**Teachers who initiate curriculum innovations:**

**Motivations and benefits**

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**Abstract**

What explains teacher-initiated curriculum innovation? Sparse but consistent literature in theories of motivation, teacher career development, teacher identity, and change in education shows that teachers value complexity and the opportunity to challenge themselves. Teachers who innovate often were motivated by the desire to effect social change or by the realisation that curriculum presentations could be more effective. How teachers work through self-initiated innovations and how the self-initiated innovations affected their identities was not well defined by the works consulted.

To better explain teachers’ self-initiated innovations, the main aim of this study was to explore the views of South Dakota teachers concerning their involvement in initiating curriculum change. Interviews were conducted with 30 teachers of students in grades K-12 (ages 5 through 18) and in a university in South Dakota, United States of America. Interviews were conducted both with teachers who identified themselves as current innovators (Phase 1) and with teachers who learned about, planned, and implemented the Storyline approach to curriculum design (Phases 2 and 3). For Phases 2 and 3, Storyline provided a common context for innovation and the essential elements of flexibility, adaptability, and challenge for the teachers.

Teachers’ motivators for innovating included increasing student engagement and compensating for the failure of the textbooks, and to a lesser degree, relieving personal boredom and fulfilling a desire to have fun. Inspiration came from professional development experiences of their own choosing as well as conversations with their own children or with colleagues.

Teachers predicted benefits and difficulties and planned accordingly for maximum student benefit. Teachers did not predict the number and nature of the benefits resulting from their innovations, particularly in areas such as personal fun, student initiative, and parent involvement. University teachers found they could adapt the narrative, imaginative teaching method Storyline from K-12 education and discovered the method effective and engaging.

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**Author’s declaration**

The author has not previously presentedany of the material contained herein.**Introduction**

**Main Aim of the Study**

The main aim of the study was to explore the views of South Dakota teachers concerning their involvement in initiating curriculum change. The main research question “What explains teacher-initiated curriculum innovation?” inspired investigation into theories of motivation, teacher career development, teacher identity, and change in education. The literature in these areas informed the design of the study, which was based on interviews with 30 South Dakota teachers of students ages 5 through adult. In this study, “curriculum” refers to the intentional learning opportunities which teachers provide to students. The teachers in this study based curriculum on standards documents provided by their governing boards.

**Origins of the Study: Personal and Professional Interests**

My interest in teacher-initiated curriculum change is both personal and professional. As both a primary and secondary teacher in the United States of America, I found that when using curriculum I designed myself, I became enthusiastic about experiencing my students’ learning. This enthusiasm intensified into excitement when I discovered and implemented the Storyline approach to curriculum design; I could hardly wait to see what would happen in my classroom the next day. As a university teacher, I found a similar phenomenon. When I used detailed lessons created by another instructor, many times I did not have an attitude of excitement about my students’ learning or about my teaching. I wondered if other teachers felt the same. When I entered the University of York postgraduate programme, I knew I wanted to study teacher-initiated curriculum design.

Some of my colleagues also pursued curriculum design in their classrooms. They chose to have primary students conduct mock trials or investigate architecture. Postsecondary colleagues also innovated, deciding to move away from the norm of lecture based on textbook. These colleagues did so without mandates to innovate.

What motivates a teacher to spend time designing innovations when they could be using well-prepared, tested lessons in textbooks? With no salary incentives for extra hours spent planning, there is no direct external reward for innovating. What then is the teacher’s reward? Do self-initiated innovations stave off teacher burnout? When teachers initiate innovations with their curricula, what is relevant to them in terms of obstacles and supports? Are there similarities between teachers of all age groups – primary through tertiary education? These questions were foundational to my study, which grew out of my desire to understand why teachers choose to innovate.

**Research Strategy and Techniques**

I planned the study with three phases, each of which was informed by the literature in theories of motivation, teacher identity, teacher career stages, and educational change. The study focussed on using the teachers’ voices directly with multiple cases; this was accomplished through planned semi-structured interviews supported by guiding questions.

In Phase 1 of the study, interviews were held with 22 teachers of students in grades K-12 (ages 5-18) who identified themselves as innovators. These interviews informed the more in-depth Phase 2 of the study. Phase 2 centred on the experiences of 8 teachers from K-12 schools and a university, all of whom were in the process of implementing the Storyline approach to curriculum design in their classrooms. Teachers were interviewed several times in both individual and whole group meetings as they were in the process of implementing in their classrooms the innovative plans they made. Phase 2 teachers were interviewed again as they continued into a new school term with the innovation; this formed Phase 3 of the study.

**Original Contribution**

Studies in educational innovation or change generally have been centred on change other than those teachers initiate. Alterations to the curriculum or teaching approach which the teacher makes on his or her own, particularly whilst having to keep in mind policy mandates, is a rarely investigated field in educational change research. Teacher-initiated innovation was the focus of this study.

This study provides information as to why and how teachers self-initiate innovations. Teachers in this study wanted the opportunity to innovate. They were motivated both to increase student learning and to provide themselves with a sense of vitality in their jobs. These findings have implications for school administrators and policy makers, who can either encourage or discourage innovation and therefore possibly affect the vitality of the teaching force and overall teaching effectiveness.

There is very little research in which the innovation vehicle, Storyline, plays a part. Although Storyline effectiveness was not the focus of the study, using Storyline for the Phases 2-3 teachers’ innovations resulted in some findings which may be unique to narrative teaching methods such as Storyline. For instance, teachers discovered more benefits than they expected, in both objective and affective aspects of their classes. During their teaching with this narrative method, teachers also discovered difficulties which they did not anticipate. Both results were possibly due to the narrative structure.

I utilized a comparative case study format which included teachers of students ages five through adult. Research regarding teachers of children and teachers of adults are typically kept separate. This study includes both groups. Because the Phases 2-3 teachers made curricular innovations using the same basic structure, this study provides information on aspects of teaching common to teachers of students in many different age groups.

**Overview of the Constituent Chapters**

**Chapter one: Context and definitions.**

Several contexts are relevant to this study: geographic, professional, and innovation. The geographic, cultural, and innovation contexts of the study participants provided both a measure of consistency and a measure of variety.

Participants worked in primary, secondary, and tertiary schools in and near a large market town in rural eastern South Dakota, United States of America. Understanding the cultural context of the participants is helpful for understanding those qualities in the study which might be unique and those which might be universal. These characteristics are presented in this chapter.

The professional contexts of local, state, and national policies governing the participants’ schools also affect studies in education. Some participants were in primary and secondary (ages 5-18) schools and others in a university, so these contexts of the differing governance systems are presented. This difference in learner level provided a measure of variety within the study.

In addition to introducing the cultural and professional contexts, this chapter also introduces Storyline. Phases 2-3 participants utilised the Storyline curriculum planning and teaching approach for their innovation vehicle. This narrative approach relies on learner-centred discovery and requires both imagination and creativity on the student’s part as well as flexibility on the instructor’s part. Although Storyline is used in many countries, it is not a common teaching approach and therefore requires some explanation. Innovating with the same structure provided consistency for the research.

Definitions of key terms are at the end of this chapter.

**Chapter two: Literature review.**

Relevant literature in several areas informed this study. The literature review includes studies in motivation, teachers’ lives (identity and career stages), the kinds of innovations teachers make and the education policy influence on innovation, the situated atmosphere surrounding innovative teachers, and conditions necessary for teacher-initiated innovation. Because the common context for innovating in Phases 2-3 was the teaching method Storyline, literature specific to Storyline is also included in a separate section of this chapter. Much significant research has been done in some these areas, but there appears to be little in the two areas of teacher-initiated innovation and in Storyline.

**Chapter three: Methodology.**

This investigation into the lives of the teachers as they innovated required a multiple-case, life history approach. Only the teachers’ words are able to reveal motivations, frustrations, and delights whilst innovating with curriculum.

This chapter details the three phases of the study. Phase 1 consisted of interviews with 22 primary and secondary teachers in all academic areas. These teachers had already innovated; they provided a backdrop of motivations, supports, and influences of their innovations. Phase 2 provided in-depth insight from 8 teachers as they planned and worked through a first iteration of a Storyline innovation. Phase 3 revealed how the 8 Phase 2 participant teachers managed or did not manage successive iterations of the Storyline innovations.

**Chapter four: Theme one. Why get involved in educational change?**

This chapter reveals teachers’ motivations to self-initiate innovations. Why do teachers make efforts into innovations, which often require much time and effort? What do they hope to get out of the innovation?

Teachers experienced catalytic events which precipitated their innovations; these were most likely to be formal learning experiences of their own choosing or the realisation of personal boredom. The catalytic events worked with the teachers’ motivations to initiate change; their motivators fit into the two broader categories of teaching perfection and the teachers’ own need for meaning.

**Chapter five: Theme two. The impact of self-initiated innovation on teacher identity.**

This chapter centres on the study findings relevant to what happens to a teacher’s identity when a teacher initiates innovations. When a teacher innovates, what does he or she risk? How is the teacher’s identity involved in innovations?

The chapter begins with a discussion of teacher identity, including aspects of professional, situated, and personal identity which appear to influence teachers’ lives. From there the chapter flows through the benefits and difficulties which teachers anticipated and later discovered from their innovations. Teachers in this study anticipated benefits and difficulties in both objective and affective course aspects; their anticipated difficulties in both aspects generally did not materialise, although the anticipated benefits were realised. Teachers were surprised by several unanticipated benefits in both objective and affective aspects. One difficulty was experienced by nearly all the teachers but anticipated by only one.

The Phase 2 participants wanted to discuss the process and results of their innovations with each other. They created their own professional learning community which met only for this purpose. This community included both K-12 and university teachers who participated as equal learners.

**Chapter six: Theme three. Sustaining change.**

How do teachers sustain change? This chapter presents an analysis of what teachers said and did when continuing their curricular innovations into a second school term.

Nearly all teachers shared difficulties which extinguished, threatened, or limited their sustaining self-initiated innovations. The most influential of these were related to standards coverage and standardised testing; nearly all comments in these areas were made by teachers with more than 16 years of experience. Teachers also commented on situated difficulties, but these were not as influential and revealed a variety of difficulties, such as changing grade levels or teaching partners.

Teachers noted the support of their supervisor as important to their innovation, and many remarked on the support of a teaching colleague. Personal support systems such as family and friends were not generally influential on innovations.

The teachers’ satisfactions with their innovations fit into two categories: satisfactions focussed on their students and satisfactions focussed on themselves. Participants shared vignettes of both student feedback and observations of students; participants also gave examples of themselves and their experiences with curriculum ownership and having fun in the classroom.

**Chapter seven: Discussion.**

This chapter presents a model of teacher process through self-initiated innovation in curriculum. Teachers’ process is presented here, from initial catalyst through sustaining changes. Suggestions for using the model are included in this chapter and are intended for policy makers, administrators, and teachers themselves.

A further section in this chapter is solely devoted to Storyline, since this planning and teaching method was the innovation used by the 8 Phases 2-3 participants. Although Storyline has existed for more than 40 years and is currently used in more than 20 countries, there have been few effectiveness studies. This section contributes some evidence of Storyline effectiveness in teaching and learning, even though the focus of the investigation was on teacher innovations rather than method effectiveness.

**Chapter eight: Conclusions.**

The discussion in this chapter reiterates the major findings of the study and gives direction for practical application of the study results. A critique of the study is also provided here, along with direction for further research in three related areas. Questions still remain in the areas of what particularly provides teachers with job satisfaction, how to assess alternative teaching and learning methods, and how teaching with alternative methods affects teacher and student curriculum ownership.

## Chapter One

## Context and Definitions

## Introduction

Because researchers can forget to include mention of the mediating effects of history and culture ([Kallinikos, 2004](#_ENREF_114)), this chapter contains introductions to several contexts which influenced this study.

Just as a horseback rider chooses and adapts saddles to fit both the rider’s purpose and the horse, the teachers in this study chose and adapted innovative teaching approaches to fit their own classrooms. The Phases 2-3 participants in this study used the innovation “Storyline,” which I describe first in this chapter. The metaphor into horseback riding extends a little further: the general characteristics of the horses affect how the horses are used, and in this sense it is the geographic and cultural contexts of schools which are influential on classroom situations. Finally, shelter and feed affect a horse-and-rider combination, so I also include in this chapter the metaphorical shelter and feed: the educational policies and situations in which the participant teachers worked at the time of the study. First, however, is a description of Storyline, the innovation used by the Phases 2-3 teachers in this study.

# Innovation Context: The Storyline Approach to Curriculum Design

I used Storyline as a planning structure whilst teaching in kindergarten (primary 1) and in grades 2 and 5 (primary 3 and 6) in the Pacific Northwestern United States. Because I had the same students in grade 5 as in grade 2, I learned how much my students had retained from study units I taught through a Storyline structure. Three years after a Mayflower Storyline, my students could tell me factual details such as why separatists left England in the 1500s, to what country they first went and why they left, who on the Mayflower ship was married to whom, and who fell overboard and was subsequently rescued. I was impressed with the power of teaching with the Storyline structure, but I was also impressed with how enthusiastic I became when teaching with Storyline. I would thoroughly immerse myself in planning curriculum and would enjoy anticipating the students’ work.

I learned about Storyline from other teachers. Teacher-to-teacher is a typical way that Storyline spreads from one classroom to another; it is now used in at least 22 countries. Teachers find that the Storyline approach meets many of their needs; they share with each other at the national and international levels through a web site, workshops, conferences, and books and articles in several languages. The Storyline structure is flexible enough that teachers can adapt it for teaching children, teenagers, and adults in most subject areas ([Bell, 2009](#_ENREF_14)).

Storyline began in Scottish primary classrooms over 40 years ago, inspired by a 1965 document from the Scottish Education Department which stated that if education is to be meaningful to the child, curriculum subjects should not be taught in isolation ([Harkness, 2007](#_ENREF_92)). In-service teacher trainers at Glasgow’s Jordanhill College (now part of the University of Strathclyde) and schoolteachers then explored ways to help teachers integrate curriculum, rather than teach with subject areas distinctly separated ([Bell & Harkness, 2006](#_ENREF_16)). The most effective form which emerged from these collaborative efforts was to place the curriculum in the context of story.

As the name implies, Storyline helps a teacher organize curricular content along the “line” of a “story.” Story elements of setting, characters, and plot serve as both a planning model and as a pedagogical approach ([Letschert, 2007](#_ENREF_137)). After determining what the students need to learn, the teacher chooses a setting appropriate to the learning outcomes. The teacher then thoughtfully plans learning experiences around typical story elements such as crises involving issues of security and threat or issues of good and evil. As the teacher continues developing the plot, he or she plans plausible episodes which resemble the contribution of chapters to a novel. The episodes give logical meaning to subject matter content.

The first two chapters or episodes in a Storyline establish the setting and the characters. If a graduate-level course in school leadership is “Introduction to School Administration,” the university instructor might identify the setting as “Jackrabbit School” which serves 300 K-12 students in rural South Dakota. Discussion would centre for a few minutes on the characteristics of this fictional school. In K-12 teaching, creating a visual of the setting is usually quite important to the content; in some university classrooms this is appropriate and in others this is not necessary.

After establishing the setting, the instructor then shifts the conversation to the people involved. The instructor’s questions might include, “Who works in Jackrabbit School? Who uses the school?” The students would probably identify teachers, students, parents, custodial staff, coaches, school board members, and people more peripheral to the school operation. The students then create visuals of these people. Visuals are typically made with collage materials, but they can also be created through computer programs, magazine cut-outs, sketches, or sculptures.

After students create the visuals, the instructor asks the students to create a short biography for the characters. This biography typically contains straightforward information about the character’s name, age, family members, and three words describing the character’s personality. In the Jackrabbit School Storyline, the students might also identify the character’s major motivating force, be it control, compassion, loyalty, approval, achievement, partying, or building a program. Although the instructor’s requirements for the biography might be few, by the time the students introduce their characters to the rest of the class, they have often invented much more information about this fictional person. At times these back stories lead naturally to plot developments, such as when students introduce relationships between the characters or refer to past events in the characters’ lives which continue to affect them. Table 1 introduces a planner which an instructor might use up to this point.

Table 1

*Storyline Planning Grid, Page One, for Possible Post-Graduate Course Entitled “Introduction to School Administration”*

|  |  |  |
| --- | --- | --- |
| Planning Grid for Storyline “Introduction to School Administration” | Outcomes and Goals | Uncover existing knowledge, assumptions, and stereotypes  Uncover existing knowledge, assumptions, and stereotypes  Create context for the rest of the course and reminders of aspects of human relations  Establish a common context for the course  Uncover situations which require specialized administrator abilities, knowledge, and responsibilities |
| Materials and Resources | Paper and pencils  White board and markers  Paper and pencils  White board and markers  Laptops with drawing program and printer or paper and fabric scraps  Completed characters  3” x 5” cards for identity    Completed characters  Tape for putting visuals on wall  Paper and pens for brainstorming; white board and markers |
| Organisation | Small group  Whole class  Small group  Whole class  Individuals  Individuals  Whole class  Whole class and/or  Small groups |
| Learner Activity | brainstorming  discussion  brainstorming  discussion  Choose characters to create; students pick their own (no one is the principal or the superintendent)  Create characters: visual; 3 words for personality; years at this school; family; age; main motivating force  Introduce characters to each other  Brainstorming  Discussion |
| Key Questions | What are the characteristics of “Jackrabbit School,” a K-12 rural school in South Dakota?  Who works in a school?  Who uses a school?  What could happen in Jackrabbit School? |
| Storyline Episode | Setting  Characters  Incidents |

At this early point in the curriculum the students have already uncovered much of their knowledge about human relations. Building the character causes the learners to interact thoughtfully with fictitious but realistic school participants, and the visuals become a medium for educational content. The instructor now introduces plot. Plot develops through asking key questions which derive from these characters interacting within this setting. Related activities create logical opportunities for acquiring specific curricular-focussed knowledge, and skills as well as situations which require applying and clarifying knowledge and skills.

In returning to the example of Jackrabbit School, it is here in the key questions that the class discovers the school situations which require an administrator’s specialised abilities, knowledge and responsibilities. The instructor might directly involve the students in forming the plot through asking, “What could happen to the people in Jackrabbit School?” Although the teacher has already thought of several incidents which could occur which would particularly require a school administrator’s attention, the students will think of more. These incidents could be either positive or negative occurrences which require problem-solving.

The instructor may have already decided on key questions which prompt investigation. Positive incidents in Jackrabbit School might include a gift of $75,000: should it be spent on gym improvements, additional aides, professional development, or computer upgrades? A negative incident could be that a community member accuses a high school student of poaching; what will happen? Another situation might involve a new teacher who has ideas which challenge the school norm. Perhaps a student identifies himself on Facebook as gay. How will each of the people involved in this school react to each of these incidents? What aspects of each incident will concern these characters the most?

Because the students create the human element in the visual characters, they develop a personal investment in the fiction which results in the students exploring not only the factual answers to questions but also the subjective feelings, moral values, and implications of actions ([Bell & Harkness, 2006](#_ENREF_16)). Difficult issues are naturally and safely addressed in the context of story because the situation is fictional and because the fictional situation requires attention to the issue. Although it is within a fiction, the issues become real and practical rather than esoteric and theoretical. In the Jackrabbit School example, the administrator candidate students have reasons to learn about the legalities and intricacies of school situations: Do game wardens have the right to pull students from class? Do parents have to be informed first? What rights do the students have? How will school area culture affect the school? How can administrators foster tolerance for individual differences? What effect does the administrator’s leadership truly have on individuals? The instructor can choose which issues to have the students investigate as well as how to have the students prove their knowledge about and their ability to address the issues.

The flexibility of Storyline which allows the teacher to tailor the structure to his or her students, situation, and philosophy also is the potential weakness in Storyline. Because the Storyline structure does not specifically lay out questions, answers, and timing, it is also possible that teachers will miss student learning opportunities. Another difficulty is that using Storyline requires a great amount of teacher planning time.

Storyline works within activity theory, particularly the idea that learning is accomplished through culturally mediated, practical activity ([Cole, 1996](#_ENREF_35)). Activity theory holds that placing a student in a situation will be far more likely to change patterned activities than will lecturing about the situation ([White, 1996](#_ENREF_223)). Storyline does act on this theory: as in activity theory, the student moulds, interacts with, and personalises knowledge ([K. Emo, 2004](#_ENREF_63)). McNaughton ([2004](#_ENREF_152)) found that children who personalised knowledge through choosing and developing characters demonstrated a “high level of affective engagement in the learning” (p. 151).

There are characteristics of Storyline in other discussions of effective education design: “Backwards Design”[[1]](#footnote-1) ([McTighe & Wiggins, 2005](#_ENREF_155)), content area integration ([Beane, 1997](#_ENREF_11)), problem-based learning ([Duch, Groh, & Allen, 2001](#_ENREF_57)), and project-based learning ([Hosic & Chase, 1924](#_ENREF_102); [Katz & Chard, 2000](#_ENREF_115)). Storyline also complements the Reggio-Emilia philosophy used in some preschools ([Edwards, Gandini, & Forman, 1998](#_ENREF_61)). Most of these theories had not been widely articulated at the time that Storyline was first developed in the 1960s. Storyline developers did not depend on any one educational theory when they designed Storyline. Rather, they worked with what they felt was good practice (Steve Bell, personal communication, May 25, 2008), including the elements of student engagement and an inquiry process.

## Geographic Contexts: Geography, Population and Culture

## Physical geography.

The study participants were K-12 and university teachers in and near a large market town in eastern South Dakota, in the northern Great Plains of the United States. The larger geographic area is open and slightly rolling farm land, as if the British Midlands were stretched out in all directions and then affected by a colder climate.

Four of the *Little House* children’s book series ([Wilder, 1939-1943](#_ENREF_225)) and the movie *Dances with Wolves* ([Wilson & Costner, 1990](#_ENREF_226)) brought the Dakota cold-winter prairie into popular knowledge. South Dakota was historically the land of the American bison and of the Plains Indians. Eastern South Dakota is now dominated by farms which grow wheat, dent corn and maize, soybeans, alfalfa, and sunflowers; cattle ranches dominate the drier western South Dakota. Farmers are beginning to diversify into energy production through wind turbines, and schools are beginning to install these. Farmers’ crop values have recently fluctuated with the development of bio fuels and the variation in petroleum prices.

### Population.

Whites settled eastern South Dakota in the late 1800s and now form 89% of the state population; the area specific to the study, which does not include an American Indian reservation, is 95% white ([2008](#_ENREF_214)). The state population hovers at about 781,000, with an average population density of 3.8 people per square kilometre ([2000](#_ENREF_213)), roughly half that of the Scottish Highlands, the least populous area of the United Kingdom ([2006](#_ENREF_206)).

South Dakota is home to three of the nation’s eight largest reservations for Native Americans; two of these are historically known for severe poverty. The reservations are several hours’ drive away from the study area and do not appear to affect education in the study area.

Census data compares the 50 states and District of Columbia. South Dakota holds significant rankings in several categories: 46th in population density, 49th in cost of renting a home, 49th in percent of population who is foreign-born, and 51st in average commute time to jobs ([2008](#_ENREF_215)). These statistics combine to reveal a rural state whose residents tend to live in the same low-cost community in which they work.

### Culture.

The census statistics reveal some cultural characteristics but leave out a discussion of personality. A personality survey of 619,397 residents in 50 states plus the District of Columbia, including 1,572 South Dakotans, revealed in preliminary results that the generalised South Dakotan personality ranks 7th in the nation in extraversion and 49th in neuroticism, meaning that residents tend toward being socially-oriented, well-balanced people. The state ranked near the national middle in the characteristics of agreeableness (defined as friendliness, trust, and helpfulness) and conscientiousness (defined as restraint, order, and dutifulness). The state ranked near the bottom in openness (defined as creativity, unconventionality, and tolerance) ([Rentfrow, Gosling, & Potter, 2008](#_ENREF_175)). The South Dakota personality can be generalised from these findings as friendly and conventional.

The market town in which this study took place has a regional appeal due to its arts events, sporting events, and the recent revitalisation of the downtown area. Major employers in the area were not as affected by the recent recession as were businesses in other areas; in June 2009 the national unemployment rate was 9.5% ([2009](#_ENREF_217)), but study area unemployment was only 3.9% ([2009](#_ENREF_202)).

## Professional Context: Organisation and School Characteristics

### School organisation.

United States public schools enrol 90% of children ages 5-18 ([Shin, 2005](#_ENREF_194)). They are typically governed by a local school district board which conforms to standards set by a state department of education. School districts are traditionally considered able to respond to local needs and philosophies. School districts vary in geographic size, with just over 1 square mile for Vermont’s Winooski School District ([2009](#_ENREF_229)) to nearly 8,000 square miles for Nevada’s Clark County School District ([Schmidt & Schlottmann, 2009](#_ENREF_184)) and in enrolment, with fewer than 10 students in rural regions ([2009](#_ENREF_20)) to over 1,000,000 in New York City ([2006](#_ENREF_60)).

Unless they are small rural entities, primary and secondary schools are typically organised into elementary schools (kindergarten through grade 5, ages 5-11), middle schools (grades 6-8, ages 12-14), and high schools (grades 9-12, ages 15-18). Together they are referred to as K-12 schools. School districts may offer alternative high schools, which typically have a smaller student-to-teacher ratio and enrol students who are at high risk of dropping out of school. Some large school districts also have magnet schools which have a particular focus, such as the arts.

School districts set graduation requirements. For college-bound students, university entrance requirements are more influential than are graduation requirements. Generally, middle and high schools require students to take courses in all academic subjects as well as elective courses in arts and vocational areas. Students most commonly stay in high school four years, graduating at age 17 or 18.

Secondary schools sponsor both competitive and non-competitive teams and interest clubs for students. Sports competitions are held between schools of similar size, but interest area competitions (debate, vocational skills, and trivia) are held with regional schools.

In addition to overseeing K-12 schools, states operate colleges and universities. These are supported by state taxes, donations, and student tuition. These schools are governed by boards of regents who usually govern several post-secondary schools. Like secondary schools, state-sponsored universities also have competitive sport and interest teams. These teams compete at regional and national levels.

Whereas K-12 schools teachers all hold the same job title, university teachers are labelled according to increasing rank: adjunct faculty (often those supervising practicum experiences), lecturer, instructor, assistant professor, associate professor, and professor. Generally those with terminal degrees in their areas begin at the assistant professor rank and advance in rank with years of acceptable research, teaching, and service.

### National and state K-12 education policy.

Because states and local areas have traditionally handled teacher certification and school funding, education is one of the areas in which federal participation is relatively recent. Federal funding of schools began in 1965 with the Elementary and Secondary Education Act (ESEA), which was intended to help children in poverty. The United States Department of Education began in 1980, formed from education divisions of other federal departments. Soon after forming, the department published a critical review of United States education in *A Nation at Risk* ([Gardner, 1983](#_ENREF_74)).

*A Nation at Risk* is credited with beginning the standards movement in the United States ([Rosenberg, 2008](#_ENREF_178)). Suggestions from this report resulted in accountability systems. Among them was the 1994 reauthorisation of the 1965 ESEA. This required each state to establish curriculum standards, assessments related to those standards, and grade-level performance benchmarks ([Jorgensen & Hoffman, 2003](#_ENREF_113)). Although this new policy was influential, far more influential and controversial was 2001 No Child Left Behind Act (NCLB), another reauthorisation of the 1965 ESEA.

NCLB legislation for the first time tied federal funding of schools to teacher qualifications and to student performance on standardised tests. The federal contribution is just 7% of most school districts’ budgets ([Ravitch, 2000](#_ENREF_172)), but because of public reporting of student testing and the possibilities of losing federal funding and school closure, the legislation resulted in overwhelming influence in classrooms. Among other reporting requirements, student achievement and improvement had to be documented by each school district, with data disaggregated by sub-populations such as race, gender, poverty level, special needs status and grade level. The law is currently challenged in district courts and nationally there is a call for abolishing it ([Ravitch, 2009](#_ENREF_173)).

State department of education policy impacts school districts in the areas of student testing, curriculum standards, and teacher certification, all of which have been affected by NCLB legislation.

### State of South Dakota K-12 characteristics.

South Dakota has the nation’s highest percentage of students enrolled in schools eligible for additional federal aid based on low incomes, at 86.8% ([Strange, 2004](#_ENREF_204)). Just over one-fourth (26.1%) of South Dakota students attend school districts with enrolments under 200 ([2006](#_ENREF_200)). The smaller schools are consolidating, however, due to recent state-level legislation.

The state’s average teacher salaries are the lowest in the nation, about 30% less than the national average ([2008](#_ENREF_162)) although per capita personal income of South Dakotans is just 8% less than the national average ([2008](#_ENREF_212)). Despite low teacher salaries, areas of severe poverty, and ranking 40th in per-pupil education spending, South Dakota eighth grade students tested with the 2007 National Assessment of Education Progress (NAEP) ranked 7th in mathematics testing and 9th in reading, when compared with students in the 50 states, the District of Columbia, and Puerto Rico.

I have found that South Dakota students are friendly, helpful, and supportive of both their peers and their teachers, even in the larger schools. Student acts in a recent talent show at one of the larger South Dakota high schools varied from an able rock band to a single student singing in Chinese and another student’s accurate but uninspired rendition of a tune popular in the 1930s; although the audience students spontaneously danced to the rock selection, they listened attentively and clapped for the other performers as well. I also found this politeness in rural schools in South Dakota: when I wandered the halls of a rural school in search of a student teacher’s classroom, one high school student not only stopped to ask if he could help me but also escorted me to the classroom I was seeking.

**K-12 characteristics in the study area.**

Although in this study area more people live in poverty than is the national average, far fewer teenagers than the national average are not in school and not employed. In 2007, 14.4% of people in the study area were living in poverty; the national poverty rate at this time was 13% ([2008](#_ENREF_214)). However, only 0.4% of teens in the study area were not employed and not in school in 2000, compared with 8.9% in the United States ([Salant, Dearien, & Gray, 2009](#_ENREF_183)).

Based on my observations as a student teacher supervisor in schools around the study area, schools appear adopt educational trends more slowly than schools in other states. For instance, a recent program in primary school mathematics designed to encourage students to think through mathematics rather than memorise algorithms had been encouraged eight years previously in my former district in rural Washington State.

Free professional growth opportunities are usually offered by the school districts. There is no budget for professional growth pursuits desired by individuals. Staff members may ask for funds for travel to conferences, but if the funds are granted they usually pay only for automobile expenses and possibly substitute teacher expenses. This policy is different from that of schools in other districts and states. In the Naselle-Grays River Valley School District in Washington State, for example, teachers had individual professional development budgets of $650 per year, in addition to free opportunities provided by both the school district and the local school district consortium.

### National and state teacher education program policy.

The federal government does not licence teachers; this is handled by each state. The NCLB legislation, however, does affect teacher education programs because of the requirement for teachers to pass licensing exams. Two national organisations, both of which are private and voluntary, focus on ensuring teacher education program quality. These organisations require annual reports and a peer review, which generally occurs every five years. The university in the study is accredited by one of these organisations, the National Council for Accreditation of Teacher Educators (NCATE).

In South Dakota teachers can prepare for licensing through a four-year university program, though students often extend their enrolment period. Most prospective secondary teachers in South Dakota are required to major in a content area and also take teacher education courses. Because of teacher shortages in some subjects, prospective teachers in South Dakota may qualify for a 100% cancellation of federal loans ([2009](#_ENREF_201)) and scholarships of up to $10,000 per year ([2007](#_ENREF_163)).

### State of South Dakota university characteristics.

There are six public universities in South Dakota, ranging in enrolment from about 2,000 students to 12,000. They are governed by the 10-member South Dakota Board of Regents, which is dedicated solely to governing the universities and two K-12 schools for special needs students. Each member of the Board of Regents is appointed by the state governor. The board establishes system-wide policies and approves course changes, new courses, and program offerings.

There are also small public and private colleges in South Dakota, each of which enrols between 200 and 1,800 students; these colleges offer associate and bachelors’ degrees in vocational and liberal arts. A few are aimed specifically at educating Native Americans. These colleges do not offer masters or doctoral level degrees.

### Characteristics of the university in the study.

Participants in this study included teachers at the largest state university, a liberal arts institution with dominant enrolments in agriculture, engineering, and nursing. Current political and economic issues have resulted in increased research in areas of national interest, such as bio fuels and family care issues. The competitive athletics program has recently experienced national-level attention in women’s basketball ([Borzi, 2009, January 29](#_ENREF_23)). The construction of several new buildings has coincided with the recent appointment of a new university president.

Students at the university level are generally seen by faculty members as respectful hard workers who desire specific directions for their assignments. The state’s universities do not have difficult entrance requirements, so the university classroom can host a wide range of previous achievement and academic background. Faculty members with experience in other geographic areas recognise a superior work ethic in these students. It is fairly common for South Dakota college students to have grown up on farms or ranches. One prominent segment of the student population belongs to the cowboy culture and is easily identified by their clothing.

Funds for professional development travel are available to full-time faculty. They are allotted $1,000 every two years for these purposes, but due to budget cuts, trip purposes have recently been scrutinised. The university also provides some faculty development in areas applicable across disciplines: focus groups centred on teaching improvement, two annual one-day on-site conferences (workshops provided by current faculty members), video conferences and webinars, and classes in technology topics.

**Conclusion**

Although the geographic, cultural, and school contexts described here are unique to the situation of the study, it is likely that their uniqueness will not block applications to other teachers in other situations. The teachers of both K-12 and university students were governed by policies at both organisational and national levels; this is similar to the situation of most teachers in public schools. The innovation context of Storyline may be unusual, but the aspect of innovating is probably not unusual. This study relates the experiences of participant teachers in this situation, but their commonality is universal: one person attempting to help a group of other people to learn.

**Definitions and Word Use**

**Innovation.**

In this study I used Halpin et al.’s ([2004](#_ENREF_88)) definition of innovation:

(W)e define “innovation” to include initiatives that are perceived to be “new” by those who introduce and experience them, even if they are not necessarily ground-breaking in the sense of being entirely original or radically configured in the manner in which progressive educators think of this process (p. 200).

Innovations included in the study were usually those which the teachers identified as different from the subject matter presentations suggested in textbooks. These are further explained in Chapter Four.

**Federal and national.**

Unless otherwise noted, these terms refer to the United States of America, which was the location of the study.

**Curriculum.**

Curriculum refers to the intentional learning opportunities which teachers provide to students. The teachers in this study based curriculum on standards documents provided by their governing boards.

**Initiate.**

Teachers who self-initiate change are defined as those teachers who decide to introduce changes to their classes without coercion by a supervisor.

**College.**

The term “college” as commonly used in the United States is nearly synonymous with “university,” since both types of institutions grant bachelor’s degrees. Typically, colleges do not grant post-bachelor’s degrees and have a smaller emphasis on research, as opposed to universities which usually do offer doctoral degrees and emphasise research.

The university in this study is organised by “colleges,” which in this case refers to groups of related subject-matter. The colleges offer degrees beyond the bachelor level.

**Chapter Two**

**Literature Review**

**Introduction**

**The literature search.**

This study’s central question was, “What explains teacher-initiated curriculum innovation?” Because participants in the study were primary, secondary, and post-secondary teachers, the literature review includes commentary on and studies conducted with teachers at all of these levels. The reviewed literature represents that found in physical and electronic library collections at both the University of York and at a research university in the Midwestern United States, in addition to books borrowed through inter-library loan services. Books and journal articles were found through searching key terms, browsing collections, and finding sources referenced by other researchers. Nearly 400 sources were read and catalogued in the attempt to discover the existing work in and influences on the topic of teacher innovation. These works included studies in English-speaking and non-English-speaking countries, but the works were in English. A few Spanish-language sources were identified, but these were translations from English-language works.

Storyline served as the innovation vehicle for 8 participants in this study, so the literature on Storyline was also examined. Nearly 100 Storyline sources were recently compiled ([Bell, Harkness, & White, 2008](#_ENREF_17)), but of those, only 23 were in English; other Storyline publication languages include Icelandic, Swedish, German, Greek, and Thai. Most of the Storyline sources in any language are method rather than research, though a few are commentary relating Storyline to educational philosophy. Four doctoral theses which specifically name Storyline as significant to the study exist or are in progress; these are in Dutch, German, Turkish, and English languages.

**Chapter organisation.**

In exploring the question of teacher-initiated curriculum innovation through the existing literature, essential aspects of teachers’ innovations came to fit the areas of the classic journalistic “5 W’s and an H:” who, what, when, where, why, and how.

Examining the question of “who” in relationship to teacher-initiated curriculum innovation leads to asking questions such as which teachers are likely to innovate. Studies in teacher identity are particularly helpful in explaining this area of investigation. Teacher identity studies are prone to address the teacher as an individual, a person with emotions and connections to students, other teachers, their schools, their communities, and their homes. This literature in examined in the section “Who: An Examination of the Teacher.”

Answering “what” is literature not only on what kinds of innovations teachers are prone to make, but also literature on education policy and the effects of policies on both teachers and students. Education policy has been found to directly impact the teacher’s ability to innovate as well as the degree to which the teachers feel able to take innovations, so it is prudent to have an awareness of this as well. The section “What, When, and Where: Teachers’ Innovations and Curriculum Policies” addresses these elements.

Questioning “when” teachers act as innovators leads in one thread back to the “who” of teacher identity, as in when in a teacher’s career he or she is most likely to innovate. Another thread of “when” returns to “what”: what the educational policy climate is, and what particular education trends are in vogue. A third thread twined into “when” is related to “where,” or the situated influences of the teacher’s school, which include the leadership and collegial atmospheres. The fourth thread of “when” is related to “why,” or the teachers’ motivations to initiated innovations with curriculum. In this literature review, the four threads of “when” will be integrated into the applicable areas of who, what, where, and why.

The final question, “how,” addresses the conditions necessary for change to take place. Some of these issues are discussed prior to this section, but the relevance will be summarised here as well, though the majority of this section will address the process teachers use in initiating curricular innovations. “How: Conditions Necessary for Innovation” is the section for works in these areas.

The last section ties together the preceding sections with Storyline literature. “Who, What, When, Where, Why, and How: Teachers Innovating with Storyline” presents the relevant works specific to Storyline. These works particularly refer to teachers in many countries.

**Introduction to the literature on education innovations.**

***The nature of innovation.***

There is a long tradition of writing and research on innovation in education which can be traced to education theorists including Comenius in the 1500s. Writings on the nature of educational innovation have been pursued from many points of view: philosophers, historians, school leadership, policy-makers, parents, and teacher educators – but rarely are there studies relying on the teachers’ own points of view.

Particularly since the mid-1980s there have been some writers who have emphasised this need for the point of view of the teacher as he or she relates to innovation and school change; some of the most prolific writers in this area are Fullan and Hargreaves, who together and separately have authored or edited nearly 40 books on the topic of educational change (see for instance, [Fullan, 2007](#_ENREF_72); [Fullan & Hargreaves, 1992](#_ENREF_73); [Hargreaves, 2003](#_ENREF_89)). Most educational change literature appears to be focussed commentary on the change process, particularly aimed at readers interested in school leadership, rather than on teacher-initiated innovations within the classroom. Instead of empirical studies conducted by those outside of schools, recently teachers’ own documented action research generally dominates the field of inquiry into teacher-initiated innovation.

There are questions about defining innovation in education, and there are differences of opinions in the answers. Questions in this area include the following:

* Does a teacher have to invent the educational practice to be considered truly innovative?
* When is something in a teacher’s practice an innovation and when is the teacher merely peculiar?
* If an educational practice has been used for years in one context, can that practice still be considered innovative for a teacher in a different context?

These and similar questions had to be considered before this study began. Halpin et al.’s study ([2004](#_ENREF_88)) of applications for funding innovations and experimentation in English high-needs schools helped with answering these questions. After reading their definition of innovation, I adopted it for this study, thus resolving questions on the definition of innovations. Although I also included this in the definitions section on pages 31-32, I reproduce it here for clarity:

(W)e define “innovation” to include initiatives that are perceived to be “new” by those who introduce and experience them, even if they are not necessarily ground-breaking in the sense of being entirely original or radically configured in the manner in which progressive educators think of this process (p. 200).

Thus the teachers in this study did not have to invent practices themselves, they did not have to examine their personalities, and their innovations could be adapted from teachers in other contexts. For the teachers in this study, whose South Dakota context was conventional, nearly any variance from the textbook’s suggested presentations could be considered innovative. For the university-level participants, whose dominant paradigm was lecture within the conventional culture, a definition of innovation included presentations which were not lecture-based.

***Education innovation literature.***

A number of books have been dedicated to examining the past century’s attempts at change within education. Two examples refer to attempts at change as “reform” ([Ravitch, 2000](#_ENREF_172); [Tyack & Cuban, 1995](#_ENREF_210)). Ravitch’s book title terms the reforms “failed;” Tyack and Cuban’s title calls the efforts “tinkering.” But though these education scholars may see successful efforts at innovating as miniscule, those outside education do not necessarily view the past 100 years’ efforts as minor. Business innovations, particularly those in the computer technology industry, have often been held up as examples for schools and are usually accompanied by the suggestion that schools ought to act as businesses do, with a mind on efficiency. Writing from the computer business industry itself, however, Christensen, Horn and Johnson ([2008](#_ENREF_32)) point out that private industry probably would not be able to cope with change as well as schools have:

In the face of enormous hurdles and despite changing demands on schools, teachers and administrators have constantly improved public schools in the United States and navigated the disruptions imposed upon them. The latter is something almost no manager in private industry has been able to do ([p. 65](#_ENREF_32)).

Both century-spanning books on educational change and individual studies of the relationship between teachers’ lives and educational change have been centred on change initiated by those other than classroom teachers. What appears to be a rarely investigated field in educational change research is teacher-initiated change, or major alterations to the curriculum which the teacher makes on his or her own. One area of research in teacher change is that of action research, in which teachers analyse their own teaching and investigate their own changes. However, the literature under review here is that by researchers other than the teachers themselves.

There is a particular lack of study in the area of teacher-initiated innovation as it relates to teachers having to satisfy policy mandates. Although there are many volumes written on curriculum theory and curriculum planning, at the early part of the current decade few studies were available on K-12 teachers who write their own curriculum ([Keys & Bryan, 2001](#_ENREF_119)). That situation did not change much during the course of the decade. As a result, it is difficult to determine from the literature how widespread teacher-initiated curriculum change is. Because of the lack of available studies on teacher-initiated innovation, this review relies both on studies published 20 years ago and on current contributions, which include a few contributions made in informal exchanges published on Internet forums.

The degree of teacher-initiated curriculum innovation is difficult to determine in the literature on primary and secondary teaching, and it is more difficult to determine in the literature on post-secondary teaching. In the seven issues of the professional journal *Innovative Higher Education* printed in 2009, only one article topic was on improvements faculty members made to their teaching ([McGowan & Graham, 2009](#_ENREF_151)). The central point of this one article was that 78% of the 30 faculty members in the study reported that the changes they made were simple and required minimal effort. There was little discussion of the effect of the efforts on the faculty who made the changes. The title of the journal as compared with its contents appears to suggest that innovation in higher education does not take place with faculty teaching and that when it does, the changes are slight.

Where literature on teaching change in higher education does exist, it is almost exclusively the province of self-study. With the exception of those faculty members holding instructor rank, post-secondary teachers in the United States usually have appointments in which they are expected to pursue research in addition to teaching; this is not the case with primary and secondary teachers. The dual appointment of post-secondary teachers may explain some of the particular lack of evidence of studying their teaching. The research component of their job is that which becomes professionally recognised and encouraged, where the teaching component holds much less professional significance. However, in the United States there is also the community college. These are post-secondary learning institutions which grant two-year degrees, usually associate of arts and vocational certifications, and they usually also offer high-interest adult education classes which do not lead to a degree. Enrolment in community colleges is non-competitive, and the instructors are not expected to engage in research. Because of the number of these instructors, it is a bit surprising that studies of their teaching improvements are difficult to find.

Why schools have been able to successfully navigate new demands when industry would not have is a question with many possible answers which work together synergistically. Why have schools been able to adjust, reform, and innovate where industry could not have? The answer lies in part in the study of those with the most localised control: the teachers.

**Who: An Examination of the Teacher**

In business and industry, the most localised control is with the people on the showroom and factory floors. The education equivalent is the classroom teacher. Salespeople, factory line workers, and teachers all adjust their work to the demands of the moment. But the teacher works with far more variables at once. The teacher manages not only the variables inherent in work with students but also changes mandated by politics, changes desired by administrators, and changes the teacher may wish to introduce to the classroom.

A central factor for teachers in experiencing satisfaction and effectiveness in their jobs is the relative success with which they manage challenges ([Day & Gu, in press](#_ENREF_54)). Aside from challenges in their personal lives outside of school, teachers also face professional challenges and situated challenges. Professional challenges are related to teachers’ ideals and the policy challenges which may originate with federal governments, state governments, departments of education, or local authorities such as school boards. Situated challenges are those which are embedded within and affect the teacher’s own situation: the culture of the school, the students, and the social and economic conditions surrounding the school.

All of these challenges are wrapped into the whole of teachers’ identities. The literature on teacher identity gives particular attention to not only the personal, situated, and professional parts which make up the whole of teachers’ identities, but attention is also given to teachers’ career stages. Understanding findings regarding teachers’ identities and career stages is necessary for understanding how policies and motivations affect the conditions for change and the resultant innovations which teachers consider and ultimately enact in their classrooms.

**Teacher identity.**

***Studies in teacher identity: An introduction.***

Studies and commentaries on teachers’ identities were generally uncommon and scattered through the 20th century, but a major work appeared approximately once every 20 years. These include *The sociology of teaching* ([Waller, 1932/1961](#_ENREF_220)), *When teachers face themselves* ([Jerslid, 1955](#_ENREF_107)), *Schoolteacher* ([Lortie, 1975](#_ENREF_142)), and *The lives of teachers* ([Huberman, 1993](#_ENREF_104)). Each of these works contributes to understanding teachers and their attitudes toward innovation, but here the Jerslid and Lortie studies are most relevant. Huberman’s study and the recent *Teachers matter: Connecting lives, work, and effectiveness* ([Day, Sammons, Stobart, Kington, & Gu, 2007](#_ENREF_55)) will be examined in the section on teachers’ career stages.

*When teachers face themselves* ([Jerslid, 1955](#_ENREF_107)) was based on 5 years of research with teachers and with graduate students in education programmes at Columbia University, New York. Jerslid administered more than 1,000 surveys and conducted 80 interviews. He based the surveys and interviews as well as the interpretation of the results on psychoanalysis theories published in the 1930s and 1940s. Although Jerslid did investigate teachers’ emotions such as loneliness and hostility through his surveys and interviews, he thought two of the teachers’ concerns were particularly significant: first, teachers were concerned with “meaningfulness,” and second, teachers experienced quite a bit of anxiety. Meaningfulness was connected to the teachers’ knowledge that schooling often consisted of scholarly motions and lacked significance, vitality and personal engagement. Jerslid defined anxiety as experiencing, among other things, negative emotions such as depression, edginess, irritability, and impatience. This is one definition of stress ([Kyriacou, 2001](#_ENREF_123)). The teachers in Jerslid’s study had lived through the years of the Great Depression and World War II. Their experiences included navigating through times of societal upheavals, which probably influenced their concerns of meaning and of anxiety. The study itself was published during the years in which United States was intensely sensitive to Communist influence in politics and society. This era of suspicion as well as the author’s awareness of psychoanalytic theory undoubtedly also contributed to his awareness of topics in meaning and anxiety.

Twenty years after Jerslid’s work, Lortie ([1975](#_ENREF_142)) reported teachers’ concerns in *Schoolteacher.* Teachers’ words again reflected their times. Interviews with 94 New England teachers were conducted in the early 1960s, shortly after the era of anti-communist suspicions, during the years of civil rights protests. This was also the post-Sputnik era, when the United States feared Soviet domination. In the attempt to improve curriculum, subject-area academics and scientists wrote curricula which could be taught by those with little science content background, thus minimising the influence of individual teachers. Lortie’s study revealed that teachers valued adding personal elements to their curriculum, which is essentially a comment on the high value that teachers place on the freedom to innovate.

Another 20 years later, *The lives of teachers* ([Huberman, 1993](#_ENREF_104)) also generated interest in teachers’ experiences and is widely cited as a seminal work in teachers’ lives. This work also reflected both the teachers’ times and the teachers’ concerns as they related to innovation. The more recent work *Teachers matter: Connecting lives, work, and effectiveness* ([Day, et al., 2007](#_ENREF_55)) also shows teachers who reflect their times and addresses some of the issues involved with teachers who “break the mould.” A new version of Huberman’s work is in press at this time, almost another 20 years afterwards ([Day & Gu, in press](#_ENREF_54)). The two works already published by Huberman and Day, et al. will be examined separately in their own sections on teachers’ career stages.

The works mentioned above, from Waller through Day, all of which to some degree addressed teachers’ attitudes toward innovation, also all involved some research into teachers’ lives. It was with Huberman’s publication that the area of study into teachers’ lives became prominent. Shortly thereafter, in 1999, the American Educational Research Association began a special interest group on the lives of teachers. Four years after forming, more than 100 interested scholars had joined the group ([Brunetti, 2006](#_ENREF_26)).

***Teacher stress studies.***

Studies linking teachers’ lives to career issues include studies on teacher stress, burnout, and attrition. Teacher stress studies have used negative emotions as a definition of teachers experiencing stress ([Kyriacou, 2001](#_ENREF_123)), and expansions of teacher stress studies have singled out the study of teachers’ emotions. The argument is that attention should be paid to this area since teaching is an emotional labour. Emotions, wrote Kelchtermans, Ballet, and Piot ([2009](#_ENREF_116)), are how teachers make sense of their working conditions. Studies of teachers’ emotions have resulted in two recent books ([Day, in press](#_ENREF_52); [Schutz & Zembylas, 2009](#_ENREF_189)). Several researchers have linked teachers’ emotions to their feelings of vulnerability, defined as the lack of having found an effective strategy for coping with challenges – essentially, feeling that their identity is questioned and that valued conditions are threatened or lost ([Day, et al., 2007](#_ENREF_55); [Kelchtermans, et al., 2009](#_ENREF_116)). Teachers experiencing vulnerability may be those who feel they cannot control their factors affecting their context or who must teach inconsistently with their core beliefs and values. These teachers are less willing to embrace change ([Lasky, 2004, as cited by Day, et al., 2007](#_ENREF_55)). Teachers who are less willing to embrace change may share the experience of one in five teacher-participants in *The lives of teachers*: they admitted to a loss of dynamism, which was related to a fear of overwork. Many of these teachers had been integrally involved in a stressful major reform which ultimately disappointed them ([Grounauer, 1993](#_ENREF_86)).

The Scottish Council for Research in Education commissioned three literature reviews of teacher stress ([Johnstone, 1989](#_ENREF_111), [1993](#_ENREF_112); [V. Wilson, 2002](#_ENREF_228)). In the most recent of these studies, Wilson came to the conclusion that teachers generally felt that they were unable to address the underlying causes of their stress, which were related to workload and interruptions to planned work. One of the most intriguing findings was reported in the earliest of these reviews ([Johnstone, 1989](#_ENREF_111)). Whilst investigating the primary causes of teacher stress, in 1986 the Assistant Masters and Mistresses Association (now the Association of Teachers and Lecturers) found that almost half of the 291 teachers in the study reported that their work demanded too little in intellectual terms – arguably, boredom. The learning performance of students degrades in both “underload” and “overload” situations ([Paas, Renkl, & Sweller, 2004](#_ENREF_167)); it is possible to argue that teacher “performance” also does not operate at optimal levels in either situation.

The standards era is blamed for increased teacher stress through both the overload of meeting performance demands as well as the underload of teaching with scripted curriculum ostensibly provided for the purpose of meeting the performance demands. Feeling compelled to teach for recall in order to pass tests may conflict with teachers’ values, which may be to teach for understanding. This conflict itself contributes to teacher stress. Well before the current standards era, however, Jerslid ([1955](#_ENREF_107)) noted that teachers’ anxiety, or stress, was of large concern to them: “anxiety permeates the lives of teachers and their pupils” (p. 7) and is often associated with “the oppressive load imposed by striving to live up to an impossible ideal” (p. 10).

***Recent works in teacher identity studies.***

One of the most recent larger studies on teacher identity, *Teachers matter: Connecting lives, work, and effectiveness* ([Day, et al., 2007](#_ENREF_55)), involved surveys and interviews with over 300 teachers in England and Wales. This book generated enough interest to result in two spin-off books in press ([Day, in press](#_ENREF_52); [Day & Gu, in press](#_ENREF_54)). The *Teachers matter* researchers found that three competing dimensions comprise each teacher’s identity: professional factors (regulations and the teacher’s own definition of the ideal teacher), situated factors (school context such as support and students) and personal factors (life outside of school). These professional, situated, and personal identity factors interact and affect each other. When a teacher has balance between these factors or when two factors are relatively stable, he or she is more easily able to negotiate and tolerate instability, or change, in one of the other areas.

As in other areas of educational studies, the concept of teachers’ identities is not fully agreed upon. Four theoretical traditions recently were presented as to why some teachers are more thoughtfully adaptive to new situations and challenges than are other teachers ([Fairbanks, et al., 2010](#_ENREF_66)). These four perspectives are that teachers have differing personal practice theories, differing degrees of “vision” for their students, and differing situational value systems (“belonging”). Teachers’ identities are also recognised as being in a constant state of flux as the teachers navigate events in their personal and professional lives. These four theories are not mutually exclusive but are presented as possible explanations of successfully adaptive behaviours.

At first these four theories appear different from the identity theory as represented by Day, et al. (2007). But the consideration of identity flux was suggested by Day, et al.. The other three perspectives of why some teachers are more adaptive do complement and fit neatly into two of Day, et al.’s three dimensions of identity: personal practice theories and vision are part of professional identity, and belonging is a teacher’s situational identity.

*Personal identity.*

The teacher’s personal identity is his or her life outside of school. This sometimes can have great impact on a teacher’s situated life in the classroom, as of course teachers may have family or personal crises. Problems at home or even just a sense of routine in the personal life were mentioned as de-stabilising to the teacher’s work by 20% of teachers ([Huberman, 1993](#_ENREF_104)). Positive events, like getting married or having children, can also strain the teacher’s attention to work at school ([Day, et al., 2007](#_ENREF_55)).

A study of two German schools with quite different teaching orientations may provide insight into the teacher’s personal identity. One of these schools had subject-specific curriculum, authoritarian teachers, and the use of physical punishment; the other school integrated the curriculum and encouraged students to make learning choices. The comparison of these schools revealed that in both schools, the students’ world outside of school was far more predictive of the students’ behaviour than any aspect of their school ([LeCompte & Preissle, 1992](#_ENREF_132)). It is certainly possible that this finding transfers to teachers as well: the teachers’ world outside of school could be more predictive of the teachers’ behaviour than any aspect of the situated or professional environment. For instance, a teacher who has habitually been encouraged to and successful in taking risks in his or her personal life may be more inclined to consider changes within his or her classroom. Likewise, a teacher who experiences criticism at home may expect to hear that at school and may not wish to try new approaches to teaching.

This study of two German schools ([LeCompte & Preissle, 1992](#_ENREF_132)) could also point to the teacher’s external environment as highly influential. Just as with students who perceive that school relevance is tied to the extra-school culture, such as job prospects for their race or social class, the teacher’s environment of demands external to the local situation could also highly influence the inclination to take risks with innovations. For instance, if the teacher’s relationship to the national, state, or local department of education is negative, the teacher may not want to experiment with teaching approaches outside of the norm. This idea leads to a short introduction to the teacher’s situated identity.

*Situated identity.*

The teacher’s situated identity is localised. It is comprised of the teacher’s own classroom, the school environment, and his or her collegial support. Classroom factors include the students, the student-teacher and student-student interactions, and the physical room itself. School environment refers to the social setting of the school, in both geographic location and in the social and economic base of the surrounding area. Collegial support includes both fellow teachers and the school leadership.

The teacher’s situated identity has traditionally been fairly isolated, with each teacher working separately from others for the length of the school day and afterwards. Teaching is less isolated than it has been in previous decades, due to publicly reported testing results and encouragements for teachers to share their practice with each other ([Margolis, 2008](#_ENREF_145)). However, teachers continue to face social isolation in their own classrooms, and isolation is compounded for teachers in rural and extreme rural areas. In the recent past administrators have been exhorted to take extra care with this aspect of the rural teacher’s situated life ([Johnston, 1981](#_ENREF_110); [Sher, 1981](#_ENREF_193)). Although the physical isolation of rural schools is still true, teachers are much more able now than even a few years ago to maintain social contacts through Internet media such as Facebook and blogs. Neither rural nor city teachers are isolated from sharing ideas, due to the advance of Internet availability and applications.

*Professional identity.*

A teacher’s professional identity is influenced by long term local and national policy, social trends as to what constitutes good teaching, continuing professional development, workload, roles, and responsibilities ([Day, et al., 2007](#_ENREF_55)). A study on teacher change necessitates consideration of teachers’ professional lives. This in turn requires an orientation into the history of both educational change and an analysis of research on the career stages of teachers. These will be addressed in their own section following an introduction to teachers’ career stages, as identified particularly by Huberman ([1993](#_ENREF_104)) and Day, et al. (2007).

A recent work focussing only on teachers’ professional identities was based on surveys of 452 Dutch secondary teachers ([van Veen, Sleegers, Bergen, & Klaassen, 2001](#_ENREF_218)). The authors pointed out that because professional identity is based on policy and trends, professional identity is entwined with the trends of the time. Instructional style, educational goals, and school organisation are then related to each other in the teacher’s concept of identity – what he or she perceives as the definition of the ideal teacher, which is defined differently in different times.

**Teachers’ career stages.**

In writing of interviews with 94 New England public school teachers, Lortie ([1975](#_ENREF_142)) addressed the lack of stages in teachers’ careers as opposed to career stages present in other occupations. He maintained that teaching exists without career stages because there are weak extrinsic career incentives. Extrinsic career incentives exist in other occupations, such as for lawyers, who can advance from preparing cases to various levels of prominence within the identity of remaining a lawyer. Those who advance up the ranks to other school-related positions such as school administrators must change their identities, as they are no longer classroom teachers. The lack of career stages, claimed Lortie, results in two things:

* since there is no hierarchy, this in itself contributes to tensions between older and younger teachers, because younger teachers do not see older teachers as role models, and
* a lack of formal career stages enhances teacher autonomy, since the capacity of administrators to exert influence over individuals does not really exist.

Since the time of Lortie’s interviews and writing, concepts of life and career stages have become prominent in popular culture, for instance with books such as *Passages* ([Sheehy, 1976](#_ENREF_192)), which explored the concept of adult development stages. Author Sheehy’s website claims the *New York Times* named this book “one of the ten most influential books of our time” ([3 Rings Media, 2009](#_ENREF_1)). The popularity of life stage analysis is possibly responsible for the analysis of teachers’ career stages, which most prominently began with Huberman’s study of Swiss secondary teachers ([1993](#_ENREF_104)) and which has recently been analysed again by Day, et al. ([2007](#_ENREF_55)) with British primary and secondary teachers.

***Five career stages of secondary teachers as identified by Huberman.***

Huberman ([1993](#_ENREF_104)) interviewed 160 Swiss secondary teachers, both those in middle and high school. He reported finding patterns of career development, though these were not necessarily a linear path. Teachers may not follow linear career stages, but they do experience stages, typically five. Not all teachers experienced every stage. Teachers cycled through some of the stages:

* exploration (acclimatising oneself to the teacher role),
* stabilisation (increased confidence and commitment),
* diversification (experimentation or innovation within the classroom, or seeking a different position within the school),
* reassessment (self-doubt; experienced by about 40% of teachers), and
* serenity.

Attempting to categorise teachers by age or teaching assignment into career phases did not fit the teachers in this study; some findings applied only to a certain cohort who had similar life experiences, such as teaching both before and after major school reorganisation. This finding that an age-related variable was not as significant as other variables was confirmed by van Veen et al.’s ([2001](#_ENREF_218)) study of 452 Dutch secondary teachers.

The diversification stage identified by Huberman ([1993](#_ENREF_104)) is most relevant to those researchers investigating educational change. Teachers in the diversification stage are actively looking for new opportunities, searching for challenges; they are highly motivated and dynamic. If the teacher does not diversify by redirecting his or her career to school leader or to teaching specialist, the teacher experiments with instructional materials, evaluation, and teaching methods. In Huberman’s study, 40% of the teachers said that they had a strong desire for innovation, noting that

they want to renew themselves, to test themselves and their classes with new pedagogical experiments. They are fearful of routine, afraid of going stale in the system ([Grounauer, 1993, p. 162](#_ENREF_86)).

Huberman ([1993](#_ENREF_104)) found that diversification, change, and new opportunities coincided with these teachers avoiding crises which would otherwise precipitate abandoning teaching. This echoed Lortie’s ([1975](#_ENREF_142)) finding, that teachers desired complexity within their jobs. Huberman also found that the teachers who diversified ended their careers with a feeling of professional satisfaction and the experience of a harmonious teaching life. Because of emphasising diversification of instructional methods and small experiments conducted at the classroom level, the teachers retained their curiosity and enthusiasm, “daring to change” as one experienced teacher phrased it ([p. 163](#_ENREF_195)).

***Six career stages of teachers as identified by Day, et al..***

In contrast to both Lortie’s ([1975](#_ENREF_142)) claim that teachers did not have career stages and Huberman’s ([1993](#_ENREF_104)) identified non-linear career stages, a recent study of 300 primary and secondary British teachers ([Day, et al., 2007](#_ENREF_55)) identified career stages which are linear. These stages are closely associated with years of experience in the classroom, as noted below:

* commitment (0-3 years),
* identity and efficacy (4-7 years),
* growing tensions and transitions (8-15 years),
* challenges to motivation and commitment (16-23 years),
* challenges to sustaining motivation (24-30 years), and
* sustaining/declining motivation (31+ years).

Although teachers felt they became more effective over time, there was no linear association between age or years of experience and teachers’ relative effectiveness. The issue of self-initiated innovation and a connection to a particular career stage was not examined in this study. The parallel to Huberman’s ([1993](#_ENREF_104)) diversification stage, in which teachers explore either alternative teaching within their classroom or alternative roles for themselves, is Day et al.’s ([2007](#_ENREF_55)) years 8-15, which are identified as those in which teachers consider moving into management roles.

Teachers’ effectiveness in all career stages was affected by an interplay of three factors: situated (school and local issues), professional (values and policy), and personal. This interplay of the situated, professional, and personal self is of particular value to those investigating educational change. The finding of the influence of the teacher’s identities upon effectiveness was so significant that the researchers realised that the teacher as a person should be the centre of the enquiry into teacher effectiveness ([Day, et al., 2007](#_ENREF_55)).

The situated, professional, and personal factors described above which affect teacher effectiveness also affect teachers’ motivation and their ability to be resilient in the face of school difficulties. This intensifies with teachers in highly challenging schools or assignments, where there becomes an obvious difference between retaining teachers and retaining motivation ([Day, et al., 2007](#_ENREF_55)).

Day, et al. did not comment much on teacher-initiated innovations, but neither did they find that teachers wanted the complexity of their work to be reduced. Rather, teachers desired that the complexity and intensity of their jobs become more appreciated and for more trust to be extended to them. For example, a Year 6 teacher in the study related her effectiveness and commitment to the opportunity to innovate:

If teaching is just a job, i.e. just doing the next page in a text book, then that’s weak commitment and probably doesn’t lead to effective teaching ([Day, et al., 2007, p. 224](#_ENREF_55)).

An Australian teacher who was not part of the Day, et al. study made a similar comment:

You would be bored [silly] if you just did something the same for

the rest of your life, if you don’t try to do something different and at the same time make it better for the kids that you are teaching ([Ritchie & Rigano, 2002, p. 1088](#_ENREF_177)).

When teachers can mediate the situated, professional, and personal factors, they have harmonious careers. However, if there are conflicts either within or between these factors, teachers become discouraged. Conflicts between factors which result in discouragement are particularly likely when situated or professional values clash with policy. In these cases, teachers become alienated and disaffected ([Grimmett & Crehan, 1992](#_ENREF_85)) and flirt with burnout ([Woods, 1999](#_ENREF_231)).

***Career stages of post-secondary teachers.***

Less has been written about career stages of post-secondary teachers than about the career stages of their colleagues who teach younger students. There also does not appear to be any large or defining work on this topic, similar to those by Huberman ([1993](#_ENREF_104)) and Day, et al. ([2007](#_ENREF_55)). Mignon and Lampson ([1999](#_ENREF_158)) did base their comments of post-secondary career stages on Huberman’s study. Mignon and Langsam pointed out that an academic career “involves moments of flux, uncertainty, challenge, and crisis, punctuated with summative occasions” ([p. 49](#_ENREF_158)), referring to performance reviews in preparation for promotion from one professional title to another – in the United States, from assistant to associate to full professor. Outside of the stressor times of preparing for the summative occasions, growth or stagnation is often an issue for academics, just as it can be for other teachers. Mignon and Langsam stated that the diversification and renewal career stage (which Huberman identified as key to harmonious teaching careers) could be promoted through careful management of the faculty member’s peer reviews in the promotion sequence. Mignon and Langsam suggested further research in the parallels of Huberman’s career stages of secondary teachers and the career stages of post-secondary teachers.

The “summative occasions” of academics do not exist in the same way for the K-12 teacher. The K-12 teacher passes annual reviews, and in many cases annual reviews are waived for consistently acceptable teachers. A further possible study would be to extend this comparison of career stages for teacher education faculty, particularly where that faculty consists of those who have experienced K-12 career stages.

**The summary of who: Teacher identity and career stages.**

Investigating “who” in teacher-initiated curriculum innovation has led to examining studies of teacher identity. Although there is a lack of study on teacher-initiated change, there are many studies on change within education. Those which take a wide-angle, historical view note that there has been much change in education in the last century and that teachers on the whole have managed it well; better, in fact, than industry would have managed with a similar degree of challenges.

Taken as a whole, teacher identity studies lead to the conclusion that diversification or innovation in teaching is likely to occur after a teacher has established an initial comfort with his or her role. Teachers wish to put something of themselves into the curriculum they teach; they appreciate complexity as long as that complexity is consistent with their professional values. The way that an individual teacher manages the challenges in his or her tri-part personal, professional, and situated life impacts his or her effectiveness in the classroom. At the same time that the teacher must create balance, the teacher may need to diversify and experiment in order to remain effective and happy.

**What, When, and Where: Teachers’ Innovations and Curriculum Policies**

Teacher-initiated curriculum change is affected by policy, politics, philosophy, and the teacher’s ideals and experiences. Innovations in education are not unheard-of; the United States “is full of fabulous boutique projects” ([Mead, 2006, Comparing school, para. 2](#_ENREF_156)). Here the questions to ask of the literature include two in particular: What innovations do teachers initiate? What education policies which either encourage or restrict innovations?These form the subsections discussed here.

**What innovations do teachers initiate?**

Literature on teacher-initiated innovation is limited, but there are indeed some sources. Teachers do make innovations to their K-12 and post-secondary classrooms without the support of mandates, classes, specialists, or colleagues. Documented innovations include those in which teachers

* encourage students to articulate their understanding in writing and in discourse ([Ritchie & Rigano, 2002](#_ENREF_177)),
* discard textbooks ([Schulz, 1994](#_ENREF_187)),
* offer unusually challenging classes ([Jessness, 2002](#_ENREF_108)),
* encourage experimentation ([Cooper, 2000](#_ENREF_37)),
* support learning with video games ([Rushkoff, 2010](#_ENREF_182)),
* tie imagination into integrated curriculum ([Letschert, Grabbe-Letschert, & Greven, 2007](#_ENREF_139)),
* dramatise processes in science ([geoteo, 2010](#_ENREF_75)), and
* re-organise curriculum ([airball, 2010](#_ENREF_3)).

As with Canadian secondary teachers participating in a curriculum implementation, teachers possibly are

not dogmatic about any one best approach to teaching but used a formidable array of methods to make things interesting and effective for their students ([Hargreaves, Earl, Moore, & Manning, 2001, p. 193](#_ENREF_90)).

**What education policies encourage or restrict innovations?**

The teacher’s ability to innovate is often impacted by education policy, both at local and national levels. Education policy is greatly impacted by the “checks and balances” system of the United States. Although there is a federal department of education, each state also has a department of education separately responsible for creating policy and standards; the head of this is elected separately from the state governors. There are also directly elected local political leaders, including directly elected school board members.

A short review of curriculum policy in the United States provides an orientation to the teachers’ experiences and the general culture of teaching and learning in the United States. Reviewing recent literature from several countries on curriculum and education policy will provide background on how these policies affect teachers and students; the review will also help inform the investigation into teacher-initiated curriculum change.

The first nationally-based policy in United States education essentially resulted in restricting innovation. Its development immediately followed the resurgence of Comenian teaching philosophies in Europe in the late 1800s. Comenian philosophies, first introduced in the 1600s, included “radical” teaching ideas such as direct observation and experimentation and learning languages through conversation rather than through memorisation of grammar tables. Perhaps as a rebuttal to the popularity of Comenian ideas, ten men, mostly university representatives, met to create standardised entrance requirements for their group of post-secondary institutions. This “Committee of Ten” went beyond creating entrance requirements and also created guidelines for which secondary school subjects should be taught, manner in which they should be taught, and the length of classroom time devoted to each ([Taylor, 1894](#_ENREF_205)).

In reaction to the Committee of Ten’s guidelines, there was the proposition that too much breadth of knowledge was required of students, and that students should be allowed to investigate a few things thoroughly ([Eliot, 1905](#_ENREF_62)). Not long afterwards, John Dewey’s philosophies became popular. In his view, education should be accomplished through experience rather than through memorisation. The teacher, then, would be encouraged use his or her discretion to address the individual’s needs as the situation demanded. Dewey’s theories led to schools based on child-centredness; these “progressive” schools were in turn replaced by those which emphasised the study of classic works, as proposed by Hutchins.

These two views of secondary education continue to exist in United States schools. Educational trends veer back and forth between the extremes of both practical experience and preparation for university admission. United States secondary schools usually have some measure of both, and teacher-initiated innovation appears to exist within both viewpoints. The college-preparatory[[2]](#footnote-2) orientation continues to have the most influence over schools, particularly in terms of the organisation of subjects and school year and day.

Whether a teacher feels aligned with one orientation or another, the teacher has long been recognised as being able to act independently of overseers. One of the first writers on teachers’ lives, Waller ([1932/1961](#_ENREF_220)), wrote that although teachers often resist proposed changes, teachers understand student needs and should be allowed freedom within their classrooms to act within their understanding and professional knowledge. Jerslid ([1955](#_ENREF_107)) built on this idea with his finding that teachers felt a need to communicate meaningfulness in their teaching, which conflicted with complying with “the prevailing tendency in education to encourage the learner to understand everything except himself” (p. 80).

Lortie’s work ([1975](#_ENREF_142)) continued to build the case for allowing teacher freedom and innovation. As noted earlier in the section on teacher identity, Lortie found that teachers want to add personal elements to curriculum. One example of the curricula popular at the time of Lortie’s 1960s research was the National Aeronautical and Space Administration’s (NASA) science curriculum. Written by subject-area experts, this curriculum attempted to script the teaching so that teacher influence would not exist. The “teacher-proof” curriculum materials did not have much success; a review of these attempts later showed that although the programmes like NASA’s were backed by well-respected organisations, only 5% of curriculum reforms started in the 1960s were effective. The commonality of the few successful reforms was that they were designed to acknowledge both the outsider expert’s interest as well as the teacher’s interest, through both process and content of change (Butt & Townsend, 1990).

Curricula-writing ventures by specialists such as NASA were lauded in *A nation at risk* ([1983](#_ENREF_74)), the publication which began the current standards era in the United States. This popularised and influential report emphasised the failure of education in the United States. *A nation at risk* suggested that specialists work to produce curriculum “as they did in the post-Sputnik era” (section B, recommendation 4). Although this document recommended that the federal government should not create administrative burden and should not intrude on local school governance, politicians acted on the report’s criticisms and required educational accountability through standardisation and school quality reviews. Innovation was not discouraged, but district and state level standards were thoroughly reviewed. Adding to the criticism provided by *A nation at risk* were analyses of the second round of world comparison tests in mathematics and science (tested between 1980-1984) and, for the first time, writing (1985) ([International Association for the Evaluation of Educational Achievement, 2007](#_ENREF_106)).

Criticisms of education in many countries continued in the 1990s, and the critiques resulted in state and national curricula, some of which are noted below:

* The English Education Reform Act of 1988 introduced a national curriculum in 1990 ([Troman & Jeffrey, 2008](#_ENREF_208)).
* Hong Kong introduced a “Target Oriented Curriculum” in 1990 ([Day, 2000](#_ENREF_51)).
* In 1994 the United States’ President Clinton signed legislation requiring state curriculum standards, assessments related to those standards, and performance benchmarks ([Jorgensen & Hoffman, 2003](#_ENREF_113)).
* The Netherlands’ schooling expectations were developed during the 1990s decade; school effectiveness concentrated on objective characteristics ([van Veen, et al., 2001](#_ENREF_218)).
* England’s National Literacy and Numeracy Strategy was enacted at the end of this decade ([Barber & Mourshed, 2007](#_ENREF_8); [Fullan, 2007](#_ENREF_72)).

International comparison testing also gained participants in the 1990s. Just 20 countries participated in mathematics comparisons in the early 1980s, but 45 countries participated in the widely publicized 1995 Third International Mathematics and Science Study (TIMSS), now known as Trends in Mathematics and Science Study. Between 1995 and 1999, tests in computer literacy, civics, and foreign language acquisition were added to these international comparisons ([International Association for the Evaluation of Educational Achievement, 2007](#_ENREF_106)).

The new century brought more comparative international tests. Testing as organised through the original sponsor of TIMSS, the International Association for the Evaluation of Educational Achievement (IEA), has expanded to include reading (2001), science and math (2007), advanced science (2008) and civics (2009) ([International Association for the Evaluation of Educational Achievement, 2007](#_ENREF_106)). More than 50 countries have already planned to take part in 2011 assessments in science, math, and reading. School systems are tending toward aligning their curriculum with international tests, particularly with the PISA (Programme for International Student Assessment) ([Barber & Mourshed, 2007](#_ENREF_8)), which was used in 65 countries in 2009 (["OECD Programme for International Student Assessment (PISA)," 2010](#_ENREF_166)). With this emphasis on testing, it appears that testing governs education.

For the United States, the new century was accompanied by stricter education laws. The most influential legislation was the 2001 No Child Left Behind Act (NCLB). NCLB legislation tied federal funding of schools to formal teacher qualifications and to student performance. The federal contribution is usually about 7% of a school district’s budget ([Ravitch & Loveless, 2000](#_ENREF_174)); in order to keep receiving this money, NCLB required school districts to compile reports on teacher qualifications and on student achievement and improvement. Student data also had to be disaggregated by sub-populations and by grade levels. Schools not improving student achievement in sub-categories risked being labelled as failures, which would then result in losing federal funding and ultimately in school closure. Testing results were required to be published and widely distributed. The high risk of school failure and possible ensuing public humiliation has not encouraged teachers to take risks with innovations.

However, whilst there is much concern about education, there has been some recent acknowledgement that the negativity which appears to have begun in the 1980s is either no longer justified or that it is unfair. In England the reforms of the 1990s were an attempt to improve schools through “informed prescription.” This curriculum has been pared down since its introduction. Michael Barber, who was a foundational force in the national curriculum, noted that the national curriculum is now two-thirds its original length. He attributed the cut to having a better performing educationsystem, which he stated results in more willingness to offer teachers more freedom ([Barber & Mourshed, 2007](#_ENREF_8)). The hope as stated by Michael Barber is that teaching is becoming “informed professionalism,” though Day, et al. ([2007, p. 241](#_ENREF_55)) found there was little evidence of this. Barber suggests that the best possible reforms would combine together “standards and accountability, collaboration and capacity building, and quasi-markets” ([Mead, 2006, Comparing education, para. 5](#_ENREF_156)).

Christensen, et al. ([2008](#_ENREF_32)), writing from outside the field of education, pointed to the unfairness of negativity about schools. Their contention was that schools have constantly improved and that teachers have continually innovated in the past century. The demands on education have continued to increase as the schools themselves have improved: it is simply that the “goal posts” have constantly been moved.

In the same year as this defence, however, teachers were again criticised publicly for the lack of student achievement. In November 2008 Ofsted’s Chief Inspector Christine Gilbert said that school inspections would begin a “crackdown” on boring teachers. Boring teachers were to blame for poor student behaviour and poor academic engagement. The *Guardian* report was that

pupils in secondary schools were too often set tasks that are not demanding enough of them. . . . The result is their loss of interest, their slow progress and, often, deteriorating behaviour. . . Some teachers fail to inspire pupils by relying on textbooks and endlessly preparing for tests ([Curtis, 2009, para. 5](#_ENREF_45)).

Neither Gilbert nor *Guardian* reporter Curtis noted that demands by Ofsted itself appear to require textbook reliance and test preparation. Teachers may feel that guidelines are strict and must be adhered to in order to prepare students for tests. On the other hand, it is also possible that Gilbert’s statement may encourage teacher innovation, much as Barber envisioned with his hope for informed professionalism.

***Attempts to raise teacher quality.***

Teachers who fail to inspire students are a perennial topic. In the attempt to define inspiring teachers, definitions influence investigations, just as in all research studies. How teacher quality is defined obviously influences what a study investigates. Teacher quality as defined by formal qualifications has shown to be responsible for nearly all difference in achievement between Black and White students in Texas ([Darling-Hammond, 2006](#_ENREF_47)). Teacher quality is also defined as pedagogical knowledge. Teacher quality in this sense is more influential on student achievement than either qualifications or subject learning ([Akiba, LeTendre, & Scribner, 2007](#_ENREF_4); [Day, et al., 2007](#_ENREF_55)). Examining top-performing school systems on an international basis resulted in the conclusion that pupils in school systems which score well on achievement tests have high quality teachers, which is no surprise. In this case, high quality teachers were defined as “more talented” people who are “better developed” and who “deliver consistently for every child” ([Barber & Mourshed, 2007, p. 40](#_ENREF_8)). These definitions were not elaborated upon.

Because of the awareness that teacher quality is inherently connected with student achievement ([Darling-Hammond, 2006](#_ENREF_47)), numerous attempts have been made to raise teacher quality. Teacher licensing laws require teacher education programmes, content knowledge examinations, and pedagogical knowledge examinations. Thus there is a minimum proficiency standard for teachers, and teachers are required to continue professional development throughout their careers. Commentators have suggested that overall teacher quality could be raised through improving recruitment, requiring more continuing education, making working conditions more appealing, increasing professional development opportunities, establishing professional learning communities, and offering grants. These suggestions are all aimed at “building capacity” and moving the teaching profession to Barber’s informed professionalism ([Day, et al., 2007](#_ENREF_55)). Suggestions promoting teaching innovations are generally not made.

*Recruiting efforts could result in higher quality teachers.*

It is often assumed that higher-scoring and achieving students will become more effective teachers. Some theorists recommend focussing efforts on recruiting top students and cite evidence from various countries. South Korea teacher candidates are in the top 5% of their class and in Finland the teachers are in the top 10% ([Barber & Mourshed, 2007](#_ENREF_8)). Making teaching a more attractive option for top students by raising salaries is also recommended. Raising teacher salaries in England by just 10% may have made teaching more attractive to graduates, since they correlated with a 30% increase in teacher applications ([Barber & Mourshed, 2007](#_ENREF_8)). In Singapore, top secondary students are recruited into paid teacher education programmes, and their beginning teacher salaries are higher than those of beginning doctors ([Darling-Hammond, 2010](#_ENREF_48)).

The ideas of recruiting more academically able teachers and increasing their salaries is hardly new; Waller ([1932/1961](#_ENREF_220)) argued for these items in 1932. Raising salaries is expensive, however, so Darling-Hammond ([2005](#_ENREF_49)) proposed several less expensive ways to increase teacher quality. Teachers intending to work in shortage fields and locations could be given scholarships, urban and rural teacher preparation programmes could expand, mentoring programmes for new teachers could increase, and states could reduce barriers to teacher mobility.

Certainly, sharing ideas about how to increase the supply of teachers is helpful, because efforts often do result in more teachers. However, there is also no guarantee that more academically able students will result in better teachers. Aloe and Becker ([2009](#_ENREF_6)) examined claims that verbal ability tests correlated with student achievement. They found that many of these claims were based on the 1966 Coleman report, which used a controversial data set. Aloe and Becker synthesised more than 450 documents reporting teacher test and student performance data and found “virtually no relationship is seen between verbal ability and school outcomes” (p. 621).

Recruiting top students to become a higher-quality teaching force began in earnest during the United States’ Great Depression of the 1930s, when teaching jobs were highly valued and the applicant pool was large ([Ravitch, 2000](#_ENREF_172)). Teacher retention was not an issue; the jobs were prized. This attitude toward recruitment rather than retention has continued. Lortie ([1975](#_ENREF_142)) noted in the 1970s that K-12 school organisation appeared to favour recruitment rather than retention. School systems still cannot respond to variation in effort and talent. Post-secondary schools do not differ much here. Although universities do not struggle with a candidate pool which has low standardised test scores, the organisation is not set up to maximise teaching effectiveness potential or to reward teaching effort and talent.

Recent longitudinal data from the state of Wisconsin contributes to the discussion of recruiting high-performing students into teaching. Hauser ([2010](#_ENREF_94)) followed 10,000 Wisconsin residents from the time of their high school graduation in 1957 through to 2005. Among the conclusions was that although higher ability and higher education people are recruited into more complex jobs, work in complex jobs also increases intellectual performance, with effects substantial to at least participant ages 53-54. The implication for teachers is that in the complex environment of schools, teachers will continue to develop cognitive ability, assuming that their environment encourages them to work with the complexity. This study appears to support the idea that teachers respond well to the opportunity to innovate and add something of themselves to their work.

*Licence renewal requirements which attempt to increase teacher quality.*

Teacher licensing in the United States is the province of each state. Historically, teacher licensing was not tied to continual professional growth. A teacher went through an education programme, taught for a few years at a provisional level, and then generally received a lifetime teaching certificate. States now attempt to increase teacher quality through requiring continuing teacher education. At the minimum, teachers must pass the equivalent of 2 classes every 5 years (South Dakota); other states require earning a master’s degree in education within 5 years of initial licensing and then also passing 5 classes every 5 years (Washington state). These requirements are not connected to innovation in any way, and classes may not require any particular connection to the teacher’s own classroom.

Privately funded national certification through the National Board for Professional Teaching Standards (“National Board”) offers additional certification for practicing teachers and is gaining wide acceptance among the states. Teachers must submit packets of information including lesson plans, videos, and peer reviews of their teaching. Because of the documentation and the involvement of peer reviews, teachers with National Board certification are well respected. These certificates are recognised by many states, and many states offer financial rewards for obtaining the certification.

The National Board organisation itself promotes teacher-initiated innovation. Within the organisation’s five standards for teachers, one of the standards can be read as entirely oriented toward teacher-initiated innovation: National Board certified teachers “are willing to try new things. . . . (They) expand their repertoire of skills and incorporate new findings into their practice” ([National Board, "National Board for Professional Teaching Standards," 2010](#_ENREF_160)).

***Effectiveness of changing policies.***

Legislation appears to be both effective and ineffective for raising student achievement and teacher quality. School district leaders thought that their own policies, rather than federal policies, were more influential causes of increased student achievement ([Rentner, et al., 2006](#_ENREF_176)). Lee’s ([2008](#_ENREF_133)) review of 14 studies showed that accountability efforts have resulted achievement gains overall, but that NCLB had no significant effect on narrowing the racial achievement gap in mathematics and reading. Surveys of 299 school districts resulted in the conclusion that achievement trends fluctuated so much that progress was not identifiable ([Rentner, et al., 2006](#_ENREF_176)). These surveys found that principals believe that NCLB has had a negative effect on student learning overall, because the focus on maths and reading has caused cuts in social studies programmes. School principals also believe that top students are no longer challenged, because NCLB requires helping the lowest students to achieve minimal performance rather than optimising achievement for all students.

Goetz ([2005](#_ENREF_78)) correlated random factors which affect schools with test scores in the largest and smallest schools in Pennsylvania, examining test scores from almost 700 schools over a 5-year period. Small, rural schools were shown to be affected by random factors much more so than were large schools. In small schools, about 80% of the increase in student test scores in a teacher’s class from one year to another was due to factors which teachers cannot control, such as the students’ innate ability, economic conditions, or home background; in larger schools, the influence was about 66%. On the other hand, an analysis of PISA scores from top-performing countries showed that there was little correlation between home background and student scores ([Barber & Mourshed, 2007](#_ENREF_8)). The difference in the results from these studies may be what has been pointed out regarding professional development opportunities and support, that teachers and students may not have support systems available to them in rural schools which are available in the top-performing PISA countries, many of which emphasise teacher development.

The increasingly legislated education environment in many countries over the past two decades has prompted educational researchers to investigate how the mandated changes have affected teachers. However, mandates provide guidance for teachers and security that they are teaching what is expected.NCLB had either no effect or minimal effect on improving teacher quality in 59% of 299 school districts surveyed ([Rentner, et al., 2006](#_ENREF_176)). School administrators do not equate appropriate licensure as required by NCLB with effectiveness. They recognise that the requirements of NCLB on teaching are threatening to teachers and do not encourage them to be good teachers; at times administrators must hire the person with the right credentials rather than the best teacher ([W. Emo, 2008, March](#_ENREF_64); [Rentner, et al., 2006](#_ENREF_176)).

With the emphasis on having correct credentials, following government documents exactly, and increasing student test performance, there has been concern that creativity has lapsed within teaching and learning. Intensification theory applies here. Intensification theory states that as societies seek to increase efficiency, work narrows and becomes routine, and there is increased subservience to the bureaucratic whole ([Woods, 1999](#_ENREF_231)). An education application of this intensification theory exists in North America ([Hargreaves, 2003](#_ENREF_89)), Australia ([Martin & Dowson, 2009](#_ENREF_148)), and Europe ([Craft, 2000](#_ENREF_38)). Craft wrote that current students will need ingenuity and flexibility in their careers, but the effect of standardised school systems constrains imagination and pulls creativity from teachers themselves. The emphasis in Europe at the time of Craft’s writing was on test scores:

At the Lisbon Summit of March 2000, European government leaders agreed to focus their efforts in the area of educational policy in such a way that Europe would . . . . be able to knock for example Korea, Japan and the United States off the TIMSS charts (Letschert, 2003).

High intellectual achievement will require creativity and innovation in education, which several commentators claim is not encouraged in real practice among teachers ([Davies, 2006](#_ENREF_50); [Letschert, 2003](#_ENREF_136)). There does not appear to be evidence that this attitude is changing for most nations. There are a few models for this, however; in post-secondary education one proposal is led by engineering programmes. Harris and Cullen ([2009](#_ENREF_93)) estimated that because by the time engineering students graduate, nearly half of the knowledge in their discipline is obsolete, there is reason to establish within the students the capacity for continuous learning. Harris and Cullen wrote, “(w)e propose a model of curriculum revision based on learning rather than on knowledge” (p. 58), which sounds obvious when examined in light of education studies. Just as with teachers, the engineering discipline is calling for “better graduates” ([p. 61](#_ENREF_93)).

There is the opposing view that teachers are already required to use much creativity. Whilst there is indeed standardisation, the complexity of teaching has risen. Because of the proliferation of manipulatives for teaching, the recognition of differing learning styles, and the variation in students’ language and cultural backgrounds, teachers have not only more responsibility but also more freedom than in the past. Teachers’ work can thus be argued to be more creative as well as more demanding ([Kozulin, 1998](#_ENREF_122)). Goodson and Hargreaves ([1996](#_ENREF_81)) referred to this complexity a paradox.

There are arguments against the claim that there is now increased creativity and freedom. Many texts and schools require certain types of lessons on certain days, and texts might provide scripts and timetables which teachers feel compelled to use. Additionally, this is not the only period in United States history which has seen a variety of students in classrooms, and it is not the only period which has seen suggestions of how to teach differently. For instance, project-based education was introduced in the 1920s ([Hosic & Chase, 1924](#_ENREF_102)), although it is treated as new in some parts of the United States ([Schuster, 2010](#_ENREF_188)). As long ago as the 1500s, Comenius advocated education through direct observation and experimentation ([Busek, 1972](#_ENREF_28)).

Teachers, teacher educators, and educational psychologists might feel that the primary purpose of education should be for productive, rather than reproductive knowledge ([Kozulin, 1998](#_ENREF_122)), but the political emphasis on test scores resulted in standardisation, school inspections, scripted textbooks, and highly publicised negative reports about schooling. Many studies have found that because of the scrutiny, teachers feel frustrated, confused, and micro-managed ([Day, et al., 2007](#_ENREF_55); [Fullan, 2007](#_ENREF_72); [Rentner, et al., 2006](#_ENREF_176)), resulting in a lack of willingness to introduce innovations.

The frustration and confusion is understandable. The pattern of mandate implementation is that policy makers and administrators to require teachers to make new policies work but without assistance; this pattern is seen in Australia, the United Kingdom, and Norway ([Day, Fernandez, Hauge, & Moller, 2000](#_ENREF_53)) as well as in Canada and the United States ([Hargreaves, et al., 2001](#_ENREF_90)). At times the assistance is in the form of highly scripted curriculum, which is criticised as removing teacher influence and innovation entirely; teachers feel that anyone could do the job ([Bencze & Hodson, 1999](#_ENREF_18)). However, scripted curriculum can help teachers, particularly if teachers feel they are underprepared in a particular area.

Teachers sometimes ignore the policies which are intended to help them develop into high quality teachers. This may reveal motivations of either what they consider their superior judgment or a lack of trust in the new policy, both of which could be interpreted as a fear of failure. A study completed early during the standards era demonstrated preschool teachers’ adherence to teaching the way they preferred rather than truly complying with policy. These teachers worked under the United States’ government programme Head Start. The bureaucratic vigilance of the programme supervisor united the teachers against the supervisor. They constructed proper plans for her, which they did not intend to carry out, and they actually taught the way they thought was better ([Lubeck, 1988](#_ENREF_143)). Newman ([1998](#_ENREF_164)) related a similar story of Marlene, a Canadian teacher in what she perceived as an oppressive climate. Like the preschool teachers, Marlene was likely to resist innovations brought to her by her principal.

Teachers like Marlene may not have arguments with new teaching strategies, but if they are in a critical environment they may feel that trying out new techniques will bring criticism. These teachers may exhibit coping behaviours such as cynical compliance or intentional ignoring of the policies ([Newman, 1998](#_ENREF_164)). Teachers may either entirely ignore or only partly comply with mandates if they feel that they cannot meet both policy expectations and student needs in the daily classroom life. Official curriculum policies may not get much attention from teachers, since teachers may see these policies as insignificant compared to actual classroom demands ([Archbald & Porter, 1994](#_ENREF_7)).

The alternative to cynical compliance or avoidance is peaceable mediation. Evidence of mediation between teaching demands, teacher judgment, and official policies is found in schools. In Hong Kong, teachers who did not entirely understand new policies interpreted the policies for their own situation and adapted to them, though the results were not necessarily aligned with the intention of the reform ([Day, et al., 2000](#_ENREF_53)). A similar finding of adaptation to new policies came from a survey of 2,000 teachers in England. Teachers capably mediated between governmental curriculum policies and own their classroom procedures, even though they had previously felt threatened ([Helsby & McCulloch, 1996](#_ENREF_96)).

**What, when, and where: A summary of the innovative teacher.**

This section began with three questions which were explored by the literature review, and the answers, as is usual in education, are complex.

* What innovations do teachers initiate? Teachers innovate in many ways in their classrooms, usually regarding the requirements they make of their students but also in their presentations of material.
* What are the education policies which either encourage or restrict innovations? Innovation appears to be encouraged by decentralised systems with less specific guidelines, such as that of Finland. Innovation is not here correlated with student achievement, but there is some relationship. Developed countries tend to relax vigilance over teaching systems when comparative student scores are up; vigilance increases as politicians perceive flaws. Student achievement, though high in the decentralised and innovation-encouraging Finland, is also high in the centralised school system of Singapore.
* What kinds of innovations appear to be encouraged by education policies? School system policies tend to favour the proven example, but departments of education also publicly encourage innovation. Whether the proven example is truly an innovation is not the question to examine here; the assumption is that if a teaching method or certain way to organise the curriculum is new to a teacher or a school, it is for that situation “innovative.”

**Why: Catalysts and Motivations in Teacher-Initiated Initiate Innovation**

A teacher’s identity, or the three factors of self-perception as a professional, the events in a teacher’s personal life, and the situated school environment, certainly affect his or her ability to teach well, and all affect his or her proclivity to initiate innovations. Policies also can restrict or encourage innovations. However, as seen in the examples of teachers who ignore or modify official policies, teachers simply may be motivated to work in their own ways, guided by their perceptions of what good teaching is – a circle back to the teacher’s professional identity. In this section, that motivation is examined. Included are findings on teachers’ primary motivators as well as relevant motivation theories: self-determination, agency, and “flow.” Before teachers experience motivation to change, however, they usually experience some form of a catalyst, a reason to change.

**Catalysts which precipitate teacher-initiated innovation.**

Teachers often experience catalytic events which precipitate their innovations. For some teachers, catalysts involve an awareness of the need for social change. Others realise that the curriculum or presentation needs revision in order to be more effective. In some instances, this realisation occurs through conversations with students or colleagues.

***Perceived need for social change effected through teaching.***

Teachers who initiate particularly amazing innovations are sometimes publicly recognised. This can be the case with those whose innovation was catalysed by their recognition of a need for social change, such as the effort by the highly inspirational Jaime Escalante, which was documented by the movie *Stand and Deliver* ([Jessness, 2002](#_ENREF_108)). A passion for social justice united the 21 teachers who contributed to *Why we teach* ([Nieto, 2005](#_ENREF_165)); many of the essays describe not only why they are teachers but also a few of their innovations. Teachers who effect change through their passionate efforts in social justice are similarly a regular topic in periodicals such as *Teacher Magazine* ([Wolk & Rodman, 1994](#_ENREF_230)). Still more examples are recorded in the 50 interviews in *I am a teacher* ([Marquis & Sachs, 1990](#_ENREF_147)), many of which are not directly related to issues of social justice.

***Perceived need for curriculum re-design.***

*“There’s a better way to teach” catalyses innovation.*

Some catalysts precipitating a change in curriculum simply come from the inspiration to teach in a better way. Below are examples of teachers who were dissatisfied with existing teaching to the point that they decided to change what they were doing. None of the teachers mentioned did this at the request of an administrator or university partner.

Australian teacher Mr Volker, in the midst of initiating change, gives some insight into initiating change. Like the teachers motivated by issues in social justice, Mr Volker also showed deep commitment to his students and helping them learn. The major reason he came to innovate was that he realised that “the ways we were doing things were not good enough” ([Ritchie & Rigano, 2002, pp. 1083-1084](#_ENREF_177)). His reason to innovate was simply to teach more effectively, but he also recognised the personally motivating issues in his remark about boredom:

You would be bored [silly] if you just did something the same for

the rest of your life, if you don’t try to do something different and at the same time make it better for the kids that you are teaching (p. 1088).

The national standards had no impact on Mr Volker’s practice; he just knew there was a better way to teach.

Nancie Atwell, a teacher in Maine, also was not influenced by standards. Like Mr Volker, she knew there must be a better way to teach. She began her innovation by investigating her own teaching. She invited researchers to observe and comment on her class, and she wrote down her own observations. As a result of the observations, she made substantial changes in her English literature classroom: she let students choose what to read, required her students to read all period long, and had the students write letters both to her and to other students about what they were reading. The changes Atwell made in her classroom resulted in both objective and affective improvements, and she was recognised with teaching awards. At the time of her innovations, in the United States the sequenced Madeline Hunter lesson planning model was quite popular, as were trends in teaching thinking skills. Nancie Atwell made the radical declaration:

We don’t need assignments, lesson plans, teacher’s manuals, or handbooks. We need only another literate person ([Schulz, 1994, p. 134](#_ENREF_187)).

Another acclaimed teacher, Lynn Cherkasky-Davis, also intentionally examined her own practice. She began her personal examination at age 30, when she recognised her own symptoms of burnout. Cherkasky-Davis’ message to other teachers is that if they notice something is not working, they have the obligation to work differently ([Ruenzel, 1994](#_ENREF_181)).

In higher education, innovations also are inspired simply from the desire to teach more effectively. One instructor of pre-service special education classes intentionally enrols parents of special education students in class, so that these parents can bring their perspective into the classroom ([Curran & Murray, 2008](#_ENREF_43)). Another post-secondary instructor noted the relatively high percent of students who had been in military service in the Middle East. This faculty member wrote on an Internet forum that inverting American history chronologically seemed to work, because the curriculum began with connections to the students’ experienced lives:

I run my history survey backwards, starting with September 11th[[3]](#footnote-3) and ending with Columbus. I like it, and students do as well. . . . Actually, I was trying to make world history relevant to my students. I mean what the f\*\*\* do they care about Columbus? So I lead with 9/11, which has clear relevance, especially given the number of veterans I've been seeing lately ([airball, 2010](#_ENREF_3)).

Also contributing to this forum on post-secondary teaching were teachers who noted ideas about both requiring more of their students through refusing to lecture from the textbook and requiring students explore with laboratory materials; other teachers worked at making the curriculum memorable through lively, dramatic presentations of physical or biological processes, as in the following contribution. This contribution in particular shows the high risks some post-secondary teachers take in their efforts to teach effectively:

I am willing to look ridiculous to make sure some information makes it into long term memory, however: I jump off my desk to demonstrate the difference between potential and kinetic energy, and cover myself with the rainfly [sic] from a tent before oozing across the floor and extruding a pair of “pseudopods” in order to entrap and engulf the waste basket. We also learn the Protein Macarena [dance], which some enjoy and other hate with unholy passion ([geoteo, 2010](#_ENREF_75)).

Teachers on this forum all noted anecdotal evidence for determining effectiveness, such as relating student reactions to the innovations, rather than referencing objective evidence of higher student achievement.

There appear to be fewer published materials regarding innovative post-secondary teaching as compared to those available regarding primary and secondary teaching. Perhaps this is due to the subordinate place teaching fills at the post-secondary level. However, students are typically surveyed regarding their classes, and evaluations of faculty by department heads usually include some discussion of student evaluations. These evaluations may not inspire innovation directly, but successful innovations can help students’ ratings to rise. The opposite of course is also possible.

*“That’s boring:” Students catalyse innovation.*

The motivation to innovate in order to teach more effectively also may come from students, either overtly or covertly. Connelly and Clandinin ([1988](#_ENREF_36)) gave an example of a Canadian teacher who became inspired to innovate through his students’ overt influence. Students in Martin’s Grade 13 French class confronted him about boring material. Rather than getting defensive, Martin engaged his students in a dialogue about curriculum. Martin later reflected that together they created a situation which was more effective for their learning and which was instructional to him in terms of ways of looking at learning.

Student influence which results in teachers’ innovations usually is not as overt as the exchange between Martin’s students and himself; often the influence to innovate is covert. Student conflicts may be a cover for their perception that school is useless: “the fixation on conflict filled a void created by the lack of perceived meaningful activity” ([Davis, 1972, as cited in LeCompte & Preissle, 1992, p. 822](#_ENREF_132)). LeCompte and Preissle explain the conflicts by saying that students, who are working at forming their own identities and are seeking meaning, also may seek to maximise autonomy in the classroom. This is usually at odds with didactic teaching. It is possible that the desire to avoid conflict inspires teachers to innovate with curriculum; they may see the need to engage the students in “meaningful activity” and thus also address the students’ developmental needs for autonomy and identity. This circles back to Gilbert’s remark that boring teachers could be to blame for poor student behaviour and academic engagement ([Curtis, 2009](#_ENREF_45)).

*Colleague influence catalyses innovation.*

Sheila, another Canadian teacher in the Connelly and Clandinin (1988) study, relates that she initiated change through the inspiration that came not from her students but from watching another teacher’s innovative approach to using manipulatives when teaching higher mathematics. Sheila decided to attempt using manipulatives, thinking that perhaps student understanding might increase. Sheila was doubtful as to how the lesson would work out. But whilst watching her students work, Sheila realised that through manipulating items her students were developing a better understanding of the concept than they would have with any didactic lesson she could have prepared.

Sheila had watched a colleague teach, which provided her inspiration to innovate, but watching others is not always practical. Teachers sometimes simply ask each other for innovative ideas. A recent forum on *The Chronicle of Higher Education’s* website was titled, “Risk-taking in the classroom” ([melba\_frilkins, 2010](#_ENREF_157)). The person who started the forum asked for specific examples of teaching risks which post-secondary teachers were making. Anonymous forums like this can be safe ways to exchange innovative ideas.

Teacher characteristics play a role in teacher-initiated change. The examples of the teachers above had many years of experience[[4]](#footnote-4). As Ritchie and Rigano ([2002](#_ENREF_177)) observed of Mr Volker, there are three commonalities with the teachers cited above: first, the realisation that there are alternatives to the teaching approach currently used; second, the investigation of these alternatives; and third, the teachers’ existence in school communities which encouraged their explorations.

Although the above examples of teachers changing curriculum exist, these studies represent only a few teachers. Mr Volker, Lynn Cherkasky-Davis, and the post-secondary forum participants were not supported by university personnel whilst introducing innovations. However, Canadian teachers Martin and Sheila were participating in a university-sponsored programme, and Nancie Atwell invited university observers’ comments. These three teachers had some measure of direct support from those committed to helping them change the way they viewed curriculum.

***Perceived need for personal social outlet.***

There was no evidence found that teachers’ motivations to innovate were catalysed in order to join a professional group which also provided a social outlet. This is of course a possible outcome of innovation, particularly if the teacher’s school is organised with professional learning communities. Professional learning communities and their effect on teacher innovations are addressed later in this chapter.

**Motivation theory and teachers.**

***Self-determination theory and innovation.***

Self-determination theory suggests that people function optimally when their needs for relatedness (connection at the personal and emotional level; in other words, having a sense of belonging), competence, and autonomy are met. Relating this theory to learning, Martin and Dowson ([2009](#_ENREF_148)) propose that students with a strong sense of relatedness can set for themselves challenging goals and high expectations.

It is possible to relate self-determination theory to teachers; teachers with a strong sense of relatedness in their situated identity, who have established competence in their professional identity, and who are allowed autonomy in their situated identity, can then, like students treated similarly, set for themselves challenging goals with high expectations. This was the case with the teachers mentioned in the section above. It is also possible that the converse may exist: teachers without relatedness in their situated identity, such as those in schools without collegiality, teachers without competence, and teachers with less autonomy are less motivated to innovate in their work.

There are arguments against teacher autonomy: autonomy taken to extremes can prevent common standards from forming, and teachers can hide their own ignorance. Goodson and Hargreaves suggested that rather than viewing autonomy as self-protective, autonomy should be viewed as “heteronomy,” defined as teachers working “authoritatively yet openly and collaboratively” ([Goodson & Hargreaves, 1996, p. 20](#_ENREF_81)).

Collaborative teacher work was examined in an Australian curriculum project in the 1990s. In this case, the collaboration was a partnership between teachers, curriculum writers, and curriculum researchers. Kirk and MacDonald’s ([2001](#_ENREF_120)) conclusion was that even in partnership-based approaches to curriculum design, degrees of control had to recognised and accommodated. The teachers involved in the curriculum writing “did make an important and invaluable contribution to the reform process through their adaptation of the materials to fit their local contexts” (p. 565), but the other members of the partnership had to recognise the teachers’ need for autonomy even within a partnership situation.

The recognised need to allow teacher autonomy, which mirrors the student’s need for autonomy, reinforces the idea that in education there has been a shift from “structure” to “agency.” In other words, the attention and concern is less on the form school takes and those in authority; attention has shifted somewhat to the less powerful participants ([LeCompte & Preissle, 1992](#_ENREF_132)). At the same time as this shift of attention, there has also come an intensification of the form which school takes, such as required minutes per day per subject. Just as learners are encouraged to take charge of their own learning, it may be that teachers want to feel encouraged to take charge of their own teaching. Waller ([1932/1961](#_ENREF_220)) used the term “vigorous” (p. 455) in referring to teachers who are inspirational; his prescription was that “the teacher must be free in his teaching” (p. 455). Perhaps teachers sense the lack of consistency throughout school systems if they are in highly controlled systems and at the same time asked to encourage student choice and personal responsibility for learning.

***Agency and innovation: Challenge, curiosity, and control.***

A point of view in agency rather than in structure occurs when a teacher independently begins a curricular innovation. He or she may be motivated by challenge, curiosity, and control. This concept of motivation comes from an early study of computer-based learning games. Malone and Lepper ([1987](#_ENREF_144)) analysed characteristics of computer games which engaged sustained student interest and participation. Common factors of high-interest, intrinsically motivating, and fun games included the individual motivators of challenge, curiosity, and control. It is possible that these same factors motivate teachers to try new options in their classrooms. Teachers may need challenge; they may be curious as to how a new method or approach will affect their students, or they may want to exercise choice in deciding what will be most effective in their situation. Pierce and Malloy (1990) ([as cited in Rudow, 1999](#_ENREF_180)) found that teachers who felt they had control and challenge, as well as a sense of calling, had a significantly lower burnout rate than teachers who did not have this point of view about their work. Along with this was the observation that teachers are more satisfied with their jobs when they experience greater variation and challenge ([Sleegers, 1999](#_ENREF_197)).

The findings regarding control and challenge are repeated in studies based on action control theory. Gerjets and Scheiter ([2003](#_ENREF_76)) remarked that increased task difficulty leads to increased effort, and that effort expended becomes less vulnerable to distractive effects. Interpreting this for innovation in education means that teachers who see their work as complex will work harder to accomplish goals, and they will be less distracted in doing so than will teachers who see their work as simplistic.

***Flow and teacher innovation.***

Curiosity, challenge, and control are also a part of the concept of “flow” as popularised by Csikszentmihalyi ([1990](#_ENREF_41)). Flow can be used as another way to understand why teachers pursue innovations. Flow is defined as the experience in which people are completely immersed in their tasks, feeling energised by the task at hand. Anxiety and apathy are at low when a person is acting in “flow.” Csikszentmihalyi argues that flow is the optimal state for psychological enjoyment, and that enjoyment depends on increasing complexity of tasks. People acting in flow are those who “play with and transform the opportunities in their surroundings” and thus have a higher quality of experience than those who “resign themselves to live within the constraints of the barren reality they feel they cannot alter” ([p. 149](#_ENREF_41)). People desire task complexity and therefore create complex situations for themselves where none exist. This reiterates the findings by Lortie ([1975](#_ENREF_142)), Huberman ([1993](#_ENREF_104)), and Day, et al. ([2007](#_ENREF_55)) that teachers like the complexity of their work. Teacher Jennifer Welborn ([2005](#_ENREF_221)) wrote,

many people have no idea how difficult it is not only to teach, but to do it well. They have no idea how “smart” you have to be, to be a good teacher. . . . (I)t never gets any easier, no matter how many years I’ve tried. In fact, the more I teach, the more I realise how much I need to learn (p. 19).

Not only do people desire complexity, but a lack of complexity accompanied by narrowly defined curriculum repels people from entering and staying in these teaching environments ([Fullan, 2001](#_ENREF_71)). When a teacher experiences a lack of complexity, burnout begins. In a prescription for preventing burnout, Kelchtermans and Strittmatter ([1999](#_ENREF_117)) did not directly refer to the concept of flow, but they did recommend that teachers develop an attitude toward their work in which they see it as a job which values searching and experimenting, conditions which those operating in a flow experience as well.

Kelchtermans and Strittmatter’s ([1999](#_ENREF_117)) emphasis seems to be on “permanent critical self-evaluation” (p. 310) and the wording appears negative. An orientation of this kind will result in more stress if it is not accompanied by opportunities which increase the teachers’ flow experiences in which the teacher him or herself is allowed to increase his or her own task complexity and find interest and satisfaction in inquiries and self-directed learning and application. When this does work, self-reflection can result in unforeseen successes. Teacher Nancie Atwell said,

My experience as a teacher who observed her students—as a teacher- researcher—has changed me forever ([Schulz, 1994, p. 135](#_ENREF_187)).

The ideas of flow, self-determination, and agency and the commentaries on teacher burnout, although offering some explanation for why teachers might be motivated to initiate innovations, do not completely explain the intense effort which some innovations require. If flow, self-determination, and agency were the only factors involved, people who are teachers could probably find a better paying, less emotionally demanding occupation which would provide these factors. What then contributes to teachers’ motivations to innovate?

**Teachers’ primary motivation is relationship with students.**

Because innovation, or change of pattern, requires effort, taking a look at the root motivator for teachers is foundational to studying change within teaching. Labour market theory of supply and demand is not completely applicable to teaching. As pointed out in a meta-analysis of teacher attrition studies ([Borman & Dowling, 2008](#_ENREF_22)), although monetary rewards are important, for teachers the working conditions and personal satisfaction may be more compelling.

Teacher motivation studies share this conclusion regarding the relative importance of non-monetary benefits. Studies with teachers both in the early 1960s and more recently document that teachers are motivated primarily by their interactions with students. Teachers do not depend upon external rewards (earning, prestige and power) or upon the ancillary rewards (work schedule, work environment). Teachers depend instead upon intrinsic rewards, such as interactions with students. This is such a strong factor that among the 94 teachers in Lortie’s ([1975](#_ENREF_142)) Boston area study, teachers were six times more likely to identify as motivators the intrinsic rewards of teaching over either external rewards or ancillary rewards. Swiss teachers referred to the best years of their careers as those which had certain cohorts or groups of students. “These are the ‘magical’ years” ([Huberman, 1993, p. 252](#_ENREF_104)). American teacher Nancie Atwell noted that “the crux of the problem and the solution: [is] the relationship between teacher and student” ([Schulz, 1994](#_ENREF_187)).

More recently, interviews with 21 teachers showed three main categories of why teachers teach. The authors organised the report around these categories: “to make sense of the world,” “to help students name and claim the world,” and “to become more fully human.” These three reasons all fit into one category: relationships with students ([Nieto, 2005](#_ENREF_165)). Another set of interviews with teachers from every state found that teachers cite appreciative remarks from students as their motivators and rely on them for motivation years after the students say them. These teachers did not merely talk about enjoying students; they displayed profound commitment to them ([Marquis & Sachs, 1990](#_ENREF_147)). Interviews and surveys with teachers in urban Ontario, Canada, schools revealed that teachers found “immense satisfaction” through helping students develop socially and emotionally; these relationships with students sustained the teachers through coping with reform mandates. Maintaining relationships allowed them to maintain their moral purposes in education. Beyond merely personally satisfying, teachers found relationships with students integral to providing students with support ([Lasky, 2005](#_ENREF_125)).

This factor of relationships with students is so strong that whilst it is recognised the strongest of motivators for teachers, it is also the factor which can most drain and discourage a teacher ([Maslach & Leiter, 1999](#_ENREF_149)). Teachers want to have an effect on students. This has been a consistent finding in a variety of studies: those with 300 teachers in the United Kingdom ([Day, et al., 2007](#_ENREF_55)), with reform-minded teachers New York City ([Nieto, 2005](#_ENREF_165)), and with teachers who established a new school ([L. M. Smith, Kleine, Dwyer, & Prunty, 1994](#_ENREF_199)). Relationships with students strongly connects with the teacher’s sense of purpose, which teachers may class as an opportunity to change the world ([Nieto, 2005](#_ENREF_165)), a spiritual “calling” ([Nieto, 2005](#_ENREF_165); [L. M. Smith, et al., 1994](#_ENREF_199)), or simply a chance to make a difference in even just one child’s life ([Fullan, 1999](#_ENREF_70)). This motivation of student relationships stays with teachers throughout their careers, and it can motivate teachers to attempt innovations.

Kzltepe ([2009](#_ENREF_124)) cited literature which found that post-secondary teachers in widely disparate environments such as Northern Ireland and Uganda were also primarily motivated by relationships with students. Kzltepe surveyed 300 Turkish faculty members on their motivators and de-motivators; they rated their research as of secondary importance in comparison to relationships with students. Similar to studies of primary and secondary teachers, Kzltepe’s review also showed that students can be the primary de-motivator for post-secondary teachers as well as for other teachers. Kzltepe’s Turkish study was conducted in a public university; salaries at these schools are quite low, and research and travel opportunities are quite limited. He points out that conditions are similar in Uganda. Kzltepe refers to many K-12 studies in his article; he relates Hargreaves’ words to the teaching life at the university level:

Good teaching is charged with positive emotion. . . . Good teachers are not just well-oiled machines. They are emotional, passionate beings who connect with their students and fill their work and their classes with pleasure, creativity, challenge and joy ([Hargreaves, 1998, p. 835, as cited by Kzltepe, 2009, p. 526](#_ENREF_124)).

The teachers whose comments contributed to the studies cited above are from several different countries. They appear to fit in easily with the teachers Jerslid ([1955](#_ENREF_107)) surveyed and interviewed mid-century. Jerslid found that teachers’ need for “meaningfulness” was one of their paramount issues: teachers’ relationships with students, whether those students are in kindergarten or graduate school, help create meaningfulness. Meaningfulness and relationships can easily be stifled through scripts but are encouraged when teachers adapt curricula to suit their situations.

**Why teachers initiate innovation: A summary of catalysts and motivators.**

Teachers’ own perceptions of what good teaching is guide them to work in ways which will result in student learning. The teacher’s professional identity certainly plays a major part here. But teachers are also motivated because of their relationships with students as well as their own desires for complexity, challenge, and autonomy. Teachers’ inspirations may come from their own perceptions of what good teaching is, but their inspirations also come from students and from colleagues. How teachers go about actually beginning and working through their innovations is the next question to ask. What conditions are necessary for teachers to innovate?

Motivation theory may explain some of why teachers initiate innovation in their classrooms; the most influential appears to be a desire to increase student understanding of the subject. How teachers initiate innovations in their environments is perhaps explained through an education application of the business model of disruptive innovation.

**How: Conditions Necessary for Innovation**

Conditions necessary for change and innovation is a more well-documented field than is the field of teacher-initiated innovation studies. Teachers who innovate certainly can do so in many situated environments. However, some environments and conditions are more conducive to innovation than are others. These include professional conditions, such as national policies or teachers’ individual perceptions of ideal teaching; situational conditions, such as the local risk tolerance environment and the presence of supportive colleagues; and personal conditions of the teacher’s life outside of school. Because teachers’ innovations are dependent upon their ideas for innovating, this section will not only examine the conditions necessary for innovation but also the effectiveness of teachers’ sources for innovative ideas. First, however, the theory of “disruptive innovation” will provide a basis from which to discuss teacher-initiated innovations and how they spread.

**Disruptive innovation theory and teaching.**

Computer technology professionals, rather than education professionals, brought disruptive innovation theory to the discussion of education ([Christensen, et al., 2008](#_ENREF_32)). Disruptive innovation theory grew out of studies of innovations in business. Disruptive innovations are those which are successful because they address the nonconsumer; they usually go unnoticed by the marketplace producers because the existing consumers’ needs are already met by the existing products.

Disruptive innovations are innovations which disrupt the market as it exists and eventually replace previous technology. Christensen, et al. ([2008](#_ENREF_32)) give the example of the transition from vacuum-tube to transistor electronics. When Sony marketed the transistor radio and portable television, vacuum tube radios and televisions were standard; they were large, furniture-like, and expensive. Sony’s small and inexpensive transistor products appealed to people who were nonconsumers of radios and televisions because they could not afford or did not have space for the vacuum tube radios and televisions. Mainstream market producers did not notice Sony’s impact, since their consumers did not want the transistor products, which had inferior sound and picture quality. Because the initial consumer of transistor products was a nonconsumer of vacuum tube technology, Sony did not have to make a product with superior sound or visuals; Sony merely had to make a product that was better than nothing. Once in the market, costs went down, the transistor technology products improved, and transistor products replaced vacuum tube products. The vacuum tube to transistor experience is typical of disruptive innovations, which go unnoticed in the existing marketplace until quality improves and costs go down. Then the innovation rapidly takes over the market.

Christensen, et al. ([2008](#_ENREF_32)) state that schools have been doing a very good job at education and at adapting to societal demands; the schools’ difficulty is that the demands on schools continue to increase. These demands will continue to increase, primarily for two reasons: the demand for student-centred learning will continue to increase, and projected teacher shortages are huge. The authors’ example is that 2007, 42% of all teachers in the United States were over the age of 50 and thus nearing retirement age.

Christensen, et al.’s ([2008](#_ENREF_32)) prescription for meeting the teacher shortage demands is directly from disruption innovation theory: separate a small number of schools from the existing “marketplace” so that they can innovate. Those schools can then begin to use personal computers for individualised learning through tutoring and other interactive learning situations which specifically address the students’ needs and learning preferences; after their success, the innovations will take over the existing market of schools as they currently exist. Christensen, et al. predict that like innovations in technology markets, practical computer-based learning options for students will keep improving and that technological costs will fall by 1/3 over the next 10 years. Improved computer-based options and lowered costs would certainly be attractive; currently, those who wish to use some Web 2.0 applications such as Second Life in education and nursing are blocked by the lack of affordable supporting technology.

In 2008, 5% of United States students participated in online learning situations ([Christensen, et al., 2008](#_ENREF_32)). Using the pattern of disruptive innovation development, the authors project that technology’s share of the learning market, or number of students participating in online learning situations, will beginning in 2012 rise quickly from 5% to 50% sometime soon after 2012. Charter and private schools would most easily accomplish the shift because they can work more easily outside the existing marketplace system. Teachers’ unions, existing culture, and other forces such as popular public opinion will act in the part of the marketplace producers, which due to their nature block disruptive innovations.

There is some evidence that the disruptive innovation is beginning, though Christensen, et al. are not credited as influential. One New York City public school has been organised with the philosophy to engage students in the curriculum through video games, particularly virtual reality games ([Rushkoff, 2010](#_ENREF_182)). The example of this school acts somewhat differently from the disruptive innovation theory model that schools of this sort would have to operate outside of the mainstream, but New York City schools have historically had difficulty and have been experimenting with alternatives to traditional systems for many years.

Although there is validity in applying disruptive innovation theory to school change, Christensen, et al. ([2008](#_ENREF_32)) miss at least five points in applying business theory to education:

* the authors discuss only how disruptive innovation applies to whole schools rather than as to teachers individually,
* they assume that textbooks rather than standards guide classes,
* there is no discussion of teacher-student relationships,
* innovations are not always preferable, and
* situated complexity is ignored altogether.

A few of these will be discussed at length.

The authors address disruptive innovation as it applies to school systems and whole schools, not how it applies to teachers individually. It is quite possibly true that disruptive innovations can be blocked by whole groups, such as unions or those interested in maintaining status quo. Certainly if computers were proposed to replace textbooks, publishers would involve themselves. However, teachers innovate on the individual level, and Christensen, et al. ([2008](#_ENREF_32)) do not even mention this phenomenon as disruptive innovation. Gaining popularity for a whole perhaps is not necessary; if the teachers are addressing the needs of the nonconsumer (the student who doesn’t understand easily in lecture presentations), then the teachers are operating in disruptively innovative ways. The necessity for suggesting that charter or private schools would affect the whole is not significant if innovations are already taking place. Whilst it is true that some charter and private schools are oriented toward innovation[[5]](#footnote-5), many are organised conservatively and are more didactic than public schools.

Christensen, et al. ([2008](#_ENREF_32)) continue to reveal their lack of intimate knowledge of school systems when describing textbook adoption and use. The authors assume that textbooks are educational standards and do not address the concept of educational standards as developed by federal, state and local education authorities. To some extent the authors are correct in that textbooks tend to drive classroom experiences, but teachers and school officials refer to standards, not textbooks, when talking about what drives the curriculum they teach.

Although teachers refer to standards as driving what they teach, as discussed earlier, teachers’ primary motivator is relationships with students. Christensen, et al. ([2008](#_ENREF_32)) do not address student-teacher relationships or situated learning theory. However, the authors do recognise theories of learning styles and preferences, noting that computer technology can be developed to address the individual’s preferred mode of learning.

A fourth criticism of the disruptive theory as applied to education can be seen with the outlier example of electric guitar amplifiers. Vacuum tube amplifiers were industry standard, but like vacuum tube radios and televisions, they too began to be replaced by solid-state electronics. Solid-state electronics in amplifiers have advantages over vacuum tubes: vacuum tubes must be warmed up before use, and vacuum tubes burn out and must be replaced. Solid-state amplifiers are popular because they do not have to be warmed up, and they do not regularly need replacement parts. As with radio and television technology, solid-state amplifiers are smaller and less expensive than vacuum-tube amplifiers. However, vacuum-tube amplifiers have retained an advantage over solid-state amplifiers in that sound quality is higher with the older technology. Solid-state amplifiers have not disrupted the market in the same way as disruptive innovations have in other businesses. Unlike in other markets, the older technology remains superior. Although the older option has disadvantages, for many consumers the advantages often outweigh them. This is the analogy to education. Disruptive innovation theory assumes that consumers share standards which can be addressed through quantitative measures. But education consumers may prefer refined but existing operational systems – teachers, rather than computer programmes.

Christensen, et al. ([2008](#_ENREF_32)) advocate a “teacher-proof” curriculum delivered by computer programmes. Although teacher-proof curriculum has been a futile attempt in other eras, it is perhaps possible in computer-assisted environments. Pointing out differing learning styles and ability levels, the authors also recognise that no centrally-planned pedagogy will work for every student. Whilst the authors acknowledge the complexity of teaching each student, the authors leave out the situated complexity of the students’ wider environment, which includes home situations, backgrounds, and the need for developing creative expression and relationships which nurture emotional and social development. The authors appear to assume that learning occurs only in either didactic or computer-game environments.

What Christensen, et al. ([2008](#_ENREF_32)) do contribute to education is bringing the discussion of disruptive innovation into the conversation of school reform. The authors believe that schools should shift their focus from the producer, or teacher, to the listener, or student. Again the authors reveal their lack of knowledge of schools; this is indeed happening in K-12 schools, in teacher education programmes, and in post-secondary education. The authors’ point is essentially to move the textbook into the computer. A few of their examples show vision also wished for by educators, such as interactive computer simulations in foreign language which combine video and two-way audio[[6]](#footnote-6). Forms of this interaction do exist through several Internet sites, in both free and subscription services. The authors did not make any mention of shifting from textbook producer to teacher; teachers themselves essentially held no part of the discussion of disruptive innovation. This work is a study in effective change, but contrary to education studies on effective change, these authors suggest that change in education come from the external force of the technology available.

Studying anomalies and outliers produces richest insight ([Christensen, et al., 2008](#_ENREF_32)). The anomalies and outliers of this study are teachers who produce innovations on their own. These teachers are “disruptive innovators” whose practices are shared one teacher to another. Unlike consumer markets, these disruptive innovations may not entirely take over systems, but as Christensen, et al. remarked, education as a whole has far exceeded the flexibility of business consumer markets in adjusting to market demand.

**Professional conditions necessary for innovation.**

Disruptive innovation theory claims that innovations most easily start outside of established larger systems. If this were true in educational systems, change would more easily be effected in the United States than in England. But Michael Barber suggested that educational reforms may be more difficult to initiate in the United States than in England because of the less centralised system in the United States ([Mead, 2006](#_ENREF_156)). Reforms which fit some circumstances are less successful in other circumstances, due in part to both partisanship and to funding differences.

***Consider the teacher during changes.***

Examining both the successful and unsuccessful reform attempts has led to the rather obvious conclusion that efforts at education innovation cannot ignore the teacher. A focus on the teacher as a person, rather than on simply as a technician, has inspired several volumes. These books include interviews with top teachers in each state ([Marquis & Sachs, 1990](#_ENREF_147)) and with reform-oriented teachers ([Nieto, 2005](#_ENREF_165)). Teachers’ words and points of view have also formed the basis for major studies on teachers’ lives ([Day, et al., 2007](#_ENREF_55); [Huberman, 1993](#_ENREF_104)). These studies echoed thoughts expressed in the 1950s. Caswell and Miel, at the time faculty members at Columbia University, New York, both argued that teachers themselves needed consideration during educational change. Miel said that curriculum change requires changing people; Caswell added that teachers, like their students, had to be involved in learning, even when learning to change curriculum ([Ravitch, 2000](#_ENREF_172)).

These suggestions of needing to include teachers in educational change continue to be repeated. Where there is a lack of change or compliance with directives, several authors emphasise the importance of attention to the change process and to viewing the change from the teachers’ points of view rather than focusing on inadequacy of policy coercion and the reluctance of teachers to change ([Fullan, 2001](#_ENREF_71); [Hargreaves, 2003](#_ENREF_89); [Penuel, Fishman, Yamaguchi, & Gallagher, 2007](#_ENREF_169); [Putnam & Borko, 2000](#_ENREF_171); [Sikes, 1992](#_ENREF_196)). Barber noted that in England, when school inspections and interventions began, the inspection teams learned that “how you construct the emotion around these things is enormously important” ([Mead, 2006, sect. No Child Left Behind, para. 6](#_ENREF_156)).

Efforts at reform and innovation appear successful where teachers can adapt materials to meet their own needs and interests as well as those of their students. Butt and Townsend (1990) found this in reviewing change efforts in the 1970s and 1980s. Wells and Claxton ([2002](#_ENREF_222)) termed the search for universal, teacher-proof curriculum “futile,” proposing that cultural-historical activity theory applies. Curriculum must be “responsive to local needs and concerns of students and the communities” in order to be effective ([CHAT goes to school, para. 2, 2002](#_ENREF_222)).

In reviewing the past 100 years of school reform, Tyack and Cuban ([1995](#_ENREF_210)) found that innovations proposed by local administrators and teachers themselves were far more likely to last than those pushed by outsiders. Reforms that lasted were those which were non-controversial to lay people on school boards and legislatures, and they were both required by law and easily monitored. Backing up these findings, Wideen, et al. ([1996](#_ENREF_224)) noted that teachers thought it important to find ways to improve their teaching, but the teachers also initially dismissed information from experts.

***Consider the time that change requires.***

Ravitch ([2000](#_ENREF_172)) also has examined the past century of school reforms. Like Tyack and Cuban (1995) and others, Ravitch noted that there has been no lack of reforms, innovations, and ideas. Her point was that schools need to provide flexibility so that teachers can try new instructional methods and at the same time be intelligent enough to gauge the effectiveness of those new methods.

Although teachers and school systems adapt, change takes time. For post-secondary teachers who face the demands of earning tenure, devoting time to participating in teaching change efforts can be quite difficult ([Hall, Fisher, Musanti, & Halquist, 2006](#_ENREF_87)). Teachers at other levels cite time as a limiting factor as well. Canadian secondary teachers discovered that “even finding time to read and understand the policy and to integrate outcomes into their programmes of teaching and learning was a challenge,” let alone working through the many alternative innovations ([Hargreaves, et al., 2001](#_ENREF_90)). Committing time to teacher learning and change implementation is necessary if one expects to see substantial changes in practice. Barber, former manager of New Labour’s school reforms, suggested 8 to 10 years ([Mead, 2006](#_ENREF_156)). Ehrmann, consultant to higher education institutions regarding technology, emphasised that institutions should allow 10 years for innovation to take root and result in changes in practice (lecture, January 12, 2010).

Teachers who are reluctant to change to keep in line with official policies may also be thinking that the changes to educational policy will soon be changed again. In the 2005-2006 school year there were at least seven legal challenges to the NCLB (Rentner et al., 2006). There are some less than positive predictions for this law’s future. Fullan ([2007](#_ENREF_72)) stated that NCLB mandates have no hope of succeeding. He reiterated education assessment analyst Popham’s statement that the law is “practically and politically impossible and that the majority of schools will be labelled as failing” ([p. 241](#_ENREF_72)). Refashioning or abolishing NCLB became a Presidential campaign topic during 2008, but as of yet no changes have been made.

**Conditions of identity (professional, personal, and situated) which support innovation.**

***Professional factors which support innovation.***

Education policy makers are realising that changes have not been as effective as hoped for and that what may indeed work instead are changes which the teachers themselves develop. These are expressed in both formal policy documents and less formal public websites.

Several countries have policies which encourage teachers to try new ideas rather than to teach exactly as scripted by a government policy. Japan reduced the amount of prescribed curriculum, and both Japan and Singapore began promoting teacher flexibility ([Hargreaves, 2003](#_ENREF_89)). In the late 1990s, the Netherlands decided that an appropriate strategy for revitalising education would be to increase the autonomy of schools ([Sleegers, 1999](#_ENREF_197)). When Finland dismantled its national curriculum in 1994, the national education leaders promoted local development of materials which would address local interests and needs. The Finnish national educational goals enable curricular innovation through remaining general outcomes rather than specific paths for teachers to tread. Teachers and schools were encouraged to establish their own curriculum ([Vulliamy, Kimonen, Nevalainen, & Webb, 1997](#_ENREF_219)).

# Scotland’s department of education appears to be following Finland’s lead in de-emphasising standardised curriculum. Local school authorities in partnership with communities are encouraged to develop their own curriculum which addresses local concerns, though much help is available through the department of education and the materials available on their web site. Those involved in planning curriculum are encouraged particularly to “promote greater flexibility and creativity” in their students. “Challenging us to think differently about the curriculum” is the caption to one visual on the department website ([Learning and Teaching Scotland, 2010](#_ENREF_130)). Advocating creative approaches to curriculum, the website states that “children and young people will progress at different rates” and that “curriculum areas are not structures for timetabling.”

Scotland’s philosophy is influencing other countries. Thirteen Danish members of Parliament visited Scotland recently to learn about both the national philosophy and Scottish Storyline, an alternative approach to curriculum which requires the teacher to write his or her own curriculum ([Bell, 2009](#_ENREF_14)).

This attitude of encouraging innovation is not attitude everywhere, and some school systems can disincline teachers toward exploring innovative solutions to problems. For instance, the 2002 English Education Act stipulated that teachers must apply in writing with their plans to innovate ([Curtis, 2004](#_ENREF_44)).

***Personal factors which support innovation.***

Just as professional factors such as federal department of education policies can influence a teacher to innovate or not, personal identity factors can have an impact as well. As noted in the section on teachers’ identities, it likely the case that teachers who innovate need stability in their personal lives so that they can better manage the instability which innovation causes in their situated lives ([Day, et al., 2007](#_ENREF_55)). It is of course possible that a teacher experiencing personal instability may compartmentalise his or her life, retreating to from personal chaos to the relatively controllable work environment. In this case, innovating at school may be therapeutic rather than seen as an additional strain.

There do not appear to be studies which link individual characteristics of gender, age, years of experience, professional preparation, family details, or other personal factors with the teacher’s proclivity toward initiating innovation. The most relevant links of personal factors with innovation were correlations of years of experience in studies by Huberman ([1993](#_ENREF_104)), Day, et al. ([2007](#_ENREF_55)), and Rosenholtz and Simpson ([1990](#_ENREF_179)). Huberman found a commonality among older teachers who shared a characteristic of less willingness to jump into reforms and new methods, which he termed “caution” and to which he devoted a chapter. Day, et al. found that the highest concentration of teachers who that felt they were losing motivation were those with 24-30 years of teaching experience, at 46% of those in this group. These two studies did not directly address issues of innovation. The Rosenholtz and Simpson study came closest to examining teacher innovation as linked with years of experience. Surveys of 1,213 Tennessee elementary teachers showed that teacher commitment was much more influenced by the teachers’ perception of personal discretion and autonomy in the classroom for those teachers with more than 10 years experience, particularly as compared with novice teachers.

There is a personal factor of simply enjoying change. This factor may be quite strong, but aside from motivation theories, the evidence in this area is difficult to uncover. Australian teacher Mr Volker acknowledged not only enjoying change but also the mutual benefits that he and his students gained.

I really enjoy trying to do some things differently and get some personal satisfaction out of it. . . . The more kids enjoy being in your class the less discipline problems and the more enjoyment you will get out of teaching that class ([Ritchie & Rigano, 2002, p. 1088](#_ENREF_177)).

***Situated factors which support innovation.***

Professional policy and personal factors certainly can support innovation. Teachers who do not adopt official policies or who do not change their practice are not categorised as mulish with their refusals; a lack of change is looked at as perhaps a situational factor ([Leithwood, 1992](#_ENREF_134)). Involving the teacher in planning for change does need to happen for success with school change. The culture of the school should be fully acknowledged when anticipating change, so that situated factors which might prevent programme implementation can be addressed ([Connelly & Clandinin, 1988](#_ENREF_36); [Fullan, 2007](#_ENREF_72)). This has been shown to be true within larger educational system cultures as well. As referred to earlier, when investigating the process of collaborative curriculum development in Queensland, Kirk and MacDonald ([2001](#_ENREF_120)) found that situated and professional forces prevented the teachers from contributing to the collaboration in any substantial way; curriculum specialists and writers essentially completed the work.

Situated factors which block innovation can include the lack of individual or organisational capacity to put the changes into practice ([Fullan, 2001](#_ENREF_71)). If situated factors are addressed, teachers can be effective leaders in educational change. Much recent attention has been given to situated factors which support innovation. These include areas of perceived support, administrator characteristics, situated culture, risk tolerance, and the available opportunities for the teachers to continue to learn.

*Perceptions of support which influence innovation.*

Perceptions of system and organisational support affect whether or not teachers will attempt to use a technology application new to them ([Butler & Sellborn, 2002](#_ENREF_29)). This specific finding regarding technology adoption supports the many commentaries on leadership for change, particularly those by Ingersoll ([2001](#_ENREF_105)), who examined organisational aspects, and Fullan ([2001](#_ENREF_71)), who addressed the process of change. External support appears necessary for teachers considering change, but Csikszentmihalyi ([1990](#_ENREF_41)) claimed that external supports are not very effective in mitigating stress. This argument is that external supports help only those who already are able to work within difficult situations such as innovation adoption, not those who are disinclined to even begin an innovation.

Teachers might seek out situated support factors which they know will help them become the educators they wish to be. Los Angeles teacher Christine Gutierrez had several offers of school positions, but she chose a position which offered both challenge opportunity and collegiality.

“I wanted intellectual rigor within a collaborative atmosphere,” she says. “I didn't want to be just an isolated teacher” ([Hill, 1994, p. 170](#_ENREF_99)).

When teachers feel supported in adapting curricula for their situations, more successful changes have occurred. This is particularly the case where teachers are able to align materials with their own interests ([Butt & Townsend, 1990](#_ENREF_30); [Ritchie & Rigano, 2002](#_ENREF_177)). On the other hand, if change is based on externally-created documents rather than on the teachers’ enacted curricula of the classroom, reform efforts are impeded rather than facilitated ([Keys & Bryan, 2001](#_ENREF_119)).

When situated factors supporting innovation do not exist, teachers at times choose to innovate outside the situated environment. Wolk and Rodman ([1994](#_ENREF_230)) collected the stories of 12 people who they termed “classroom crusaders;” of these 12, 5 were people who started new schools on their own. Most of these were private and could operate outside of the norm.

*Administrator characteristics which support innovation.*

Educationally directive professional and situated contexts, including norms as well as policies, make teacher-initiated change more difficult for teachers to pursue. In these contexts the governing or dominant body has determined that standardised content and delivery will best help the students. Academic fields may have standards which appear to necessitate adherence to normed teaching. These exist in programmes for engineers ([Harris & Cullen, 2009](#_ENREF_93)), music teachers, and school counsellors. Therefore those working within those systems may see large barriers to different teaching and learning approaches. Primary and secondary schools may have highly transient students or teachers may be under-prepared; in these situations officials have determined centralised control works best for their students and teachers. Two examples of this are the school districts in Longview, Washington, and Los Angeles, California. In 2005 teachers in these districts were required to use only district-purchased curricular materials and to teach from certain textbook pages according to a district schedule.

*Working conditions which support innovation.*

Teachers’ working conditions, including the existence of curricular schedules, can affect teachers’ job satisfaction. The contribution of working conditions to either satisfaction or burnout is of course not a new phenomenon. Sleegers ([1999](#_ENREF_197)) communicated an interactive situation in which teachers’ working conditions shape their identities, which further influences the way that teachers respond to their work. Hauser ([2010](#_ENREF_94)) found a similar phenomenon in a longitudinal study (1957-2005) of 10,000 Wisconsin, USA, residents. Although initially the more able people were hired for more complex jobs, work in complex jobs also increased intellectual performance. These studies support the idea that when teachers innovate they may be looking for a challenge and to add complexity to their jobs – thus returning to theories of flow and of motivation as discussed earlier.

Recent research has identified specific working conditions which are conducive to encouraging high quality teachers who are able to change their practice. Goodson ([1991](#_ENREF_79)) argued that the focus on practice should be avoided and replaced by a focus on the teacher’s life, or essentially, the working conditions. This focus could encourage teachers to become researchers in their own classrooms. Goodson’s recommendation of changing a focus from practice to experienced life was exactly what Day, et al. ([2007](#_ENREF_55)) found they had to do. Effectiveness, Day, et al. found, was integrally tied to the person of the teacher rather than to particular methods and formulas.

In a recent meta-analysis of teacher attrition studies ([Borman & Dowling, 2008](#_ENREF_22)), attrition was shown to be more closely associated with working conditions than previously recognised. Because working conditions are influential in both the negative sense of teacher attrition and in the positive sense of encouraging improvements and innovations, school leadership has been encouraged to attend to working conditions. Working conditions which include a school administrator who is adaptive, flexible, and patient coupled with a genuine teacher support system both at school and at home create a supportive emotional environment in which the teachers will be ready for change and will develop ownership of change. Of course, teachers who take ownership of innovations or changes are also necessary for successful initiatives. A classic example of innovation being dependent upon a supportive administrator is the back story belonging to the 1988 movie *Stand and Deliver*, in which a teacher manages to change remedial maths students into honours calculus students who pass a university Advanced Placement examination. The teacher, Jaime Escalante, was highly supported by his principal who gave him control over the maths programme ([Jessness, 2002](#_ENREF_108)).

The example of Escalante also demonstrates what happens to quality within educational systems when that quality is dependent upon one person. Innovations sparked by one person’s enthusiasm cease to exist when that person moves on; when Escalante left the school other teachers attempted to continue, but when the supportive principal also left, the success rate of the students was drastically affected ([Jessness, 2002](#_ENREF_108)). The same effect of innovations dependent upon one person’s vision has been found in several studies, including those on increasing the effectiveness of education for the gifted ([Colangelo, 1999](#_ENREF_34)), science education ([Cooper, 2000](#_ENREF_37)), and integrated subject matter ([Hargreaves, et al., 2001](#_ENREF_90)).

Cultures which discourage innovation exist at the post-secondary level as well as the K-12 levels. One highly influential inhibitor to risk-taking is the student survey of university teacher effectiveness ([Schuck, Gordon, & Buchanan, 2008](#_ENREF_186)), but the culture in general can be an inhibitor even though confident risk-takers at the university level are recognised as a societal need. In a forum focussed on sharing risk-taking behaviours in teaching at the post-secondary level, one faculty member wrote:

What I found interesting in my current job is how interested people are in discussing various techniques, activities, and behaviors [sic], but how few people then go on to implement them ([polly\_mer, 2010](#_ENREF_170)).

Other contributors to this forum noted less than positive colleague reactions to their innovations: “I have been informed that my colleagues are not universally entranced with my pedagogy” ([yellowtractor, 2010](#_ENREF_232)).

*Risk tolerance and the situated environment.*

In post-secondary education teachers can feel that their efforts at innovation will seriously undermine their reputation as scholars, and in some cases university faculty members do not wish to take risks within their classrooms for fear of disapproval by either other faculty or by students. The situated environment ideally will be one which supports attempts at improving teaching situations. There can be great risk involved in a teacher working with an innovation, and there may be more risk when the teacher alone initiates the innovation, particularly if he or she is in environment which does not support lessons learned from failure cannot support a teacher in his or her risk of failure through innovation. Like the post-secondary system discussed in the forum posts quoted above, the public school system “does not encourage or reward dissent from the status quo” ([Wolk & Rodman, 1994, p. ix](#_ENREF_230)).

Fullan ([1999](#_ENREF_70)) noted that change contains dilemmas because the details of the change process and the final product are both unknowns. Paradoxes and contradictions abound in complex situations like schools, but “creative solutions arise out of interaction under conditions of uncertainty, diversity and instability” (p. 4). Teachers may become discouraged if they experience poor results with innovations, and this returns the discussion to disruptive innovation theory. In this case the business theory applies well to education. Teachers may simply need to wait for improvements before judging innovations, even though their environments may not tolerate waiting for results.

Cramming what should be a disruptive innovation into an existing marketplace is fraught with expense and disappointment because new disruptive technologies never perform as well as does the established approach in its own market ([Christensen, et al., 2008, p. 79](#_ENREF_32)).

A study of student interactions whilst using multimedia materials shows an example of a poor initial result with an innovation ([Laurillard, Stratfold, Luckin, Plowman, & Taylor, 2000](#_ENREF_126)). There was a lack of organisational structure for the learner; as a result, the students were usually engaged in unproductive activity rather than engaged in learning. Whatever the reason for the unproductive student activity, it is quite possible that the teacher would place the blame on the innovation attempted rather than examining the presentation of the method to see if the students were perhaps not supported enough in their ventures. Teachers need to be environments where they can experiment, and they need to feel supported in their risk-taking.

**Opportunities which encourage innovation.**

***Funding incentives: Grants offered for innovative practices.***

# The recent laws regarding standards, licensure, and oversight have not substantially changed, but departments of education in the United States and in England have been hoping to spur the development of innovative projects from quality teachers through financial grant incentives. However, an analysis of grant applications in England revealed that “(s)afety and conventionality, rather than risk-taking and experimentation, prevailed” due to the continued perception that teachers would be judged by the evaluative state ([Halpin, et al., 2004, p. 203](#_ENREF_88)).

Grants for innovative practices are also available at the post-secondary level. At South Dakota State University, these are offered as summer week-long intensive course re-design opportunities. Faculty members are paid $500 for devoting two weeks to developing ideas for their classes. Incentives like these have been shown to create some interest in participation but they do not encourage long-term participation in innovations, largely because the issue many faculty members have is a lack of available time. Another example comes from a study of teacher education programmes at 34 post-secondary schools which used grants for faculty professional development in technology ([Hall, et al., 2006](#_ENREF_87)). Several situated factors increased participation, including factors of leadership and administrative support. Effective aspects of most grants included the availability of individualised help, increasing faculty understanding of relevance, and providing incentives to generate participation interest. Time again was recognised as a barrier, since the faculty had to attend to their efforts at earned tenure and promotion; the study concluded that efforts at introducing change should also give innovating faculty members release time to work through the changes.

***Teachers may be “starved for serious stimuli.”***

Grants can provide opportunities to learn which may not otherwise exist due to the structures of schools which typically provide little development time. In examining principals’ roles in issues of teacher development, Leithwood ([1992](#_ENREF_134)) places much blame on the school structure, writing that typical structures “may be responsible, in part, for stifling teacher development” (p. 96). Essentially, he argued that teachers experience inadequate intellectual stimulation.

Evidence of the possible school-level responsibility for stifling teacher development is provided by the experience of teachers who worked with museum curators in Philadelphia in the mid-1980s. Previous to the museum-based summer institutes in which they created curriculum based on primary documents, teachers felt “starved for serious stimuli” but during the course of the institute, the teachers became “immensely enthusiastic” ([Hodgson, 1986, p. 32, as cited by Little, 1993, p. 135](#_ENREF_141)). Similar opportunities with curriculum creation exist in mathematics and writing. The advantage given to teachers in workshops like these, argues Little, is that they involve the teacher in the construction, rather than the consumption, of subject matter knowledge.

Teacher involvement in the construction of subject matter knowledge is directly related to control-value theory. This was recently discussed in relationship to teachers’ responses to proposed changes ([Turner, Waugh, Summers, & Grove, 2009](#_ENREF_209)). Teachers who see little value in proposed changes and little degree of control over those changes quite logically will be unwilling to embrace change. Proposed changes may threaten the teacher’s identity. On the other hand, like the Philadelphia teachers who worked with primary documents, teachers who perceived high degrees of both value and control with respect to new skills and knowledge will be likely to experience positive emotions in association with the skill and knowledge and therefore be more likely to use the new skills and knowledge. Teachers’ perceptions of control impacted their emotional reactions, willingness to take risks, and implementation of change. In other words, teachers who not only saw value in the proposed changes but who also could insert some of themselves into the work were more likely to take the risk of attempting innovations. This is consistent with other findings; only 10% of Swiss secondary teachers claimed they wanted to “throw themselves” into externally structured changes ([Grounauer, 1993, p. 163](#_ENREF_86)).

Teachers have been encouraged to create learning environments which are conducive to learning, where students feel safe and encouraged, and that beyond this, where learning is fun. Teachers in learning environments where they have fun and feel encouraged to take risks will, like their students, be encouraged to use their knowledge.

We do not only learn facts but we also learn the emotions connected with them. If we learn math in an atmosphere of fear we might learn a lot about math but we are not going to like using this knowledge ([Schwanke, 2003](#_ENREF_190)).

Teachers develop confidence during positive learning experiences like the Philadelphia museum summer institutes. The teachers enjoyed their learning and enjoyed applying it to their classrooms. If teachers associate negative emotions with charges to change, if they feel threatened, it is possible that they will not be whole-hearted about changes or innovations which are presented to them. Like theories that students should be able to connect personally, own, respond, and feel empowered with their curriculum ([Zyngier, 2008](#_ENREF_233)), teachers too may need these features in their jobs.

***Professional development for increasing teacher quality.***

It could be argued that professional development experiences attempt to provide teachers with “serious stimuli.” Giving teachers quality professional development opportunities remains widely recognised as key to retaining a highly skilled, influential teaching force ([Darling-Hammond, 1998](#_ENREF_46); [Hargreaves, 2003](#_ENREF_89); [Penuel, et al., 2007](#_ENREF_169)). Ongoing professional development is considered to be of more use to teachers than particular licensing requirements under the No Child Left Behind Act (NCLB) ([Akiba, et al., 2007](#_ENREF_4)). NCLB addressed teachers’ professional development, but when questioned in the fourth year of the Act as to whether or not the professional development requirement in particular was having an effect on teaching and learning, two quite different views were found. Those at state departments of education responded that the professional development requirements were improving teaching and learning, but respondents in school districts felt the laws had a minimal effect on improving teaching and learning ([Rentner, et al., 2006](#_ENREF_176)). Highet ([1976](#_ENREF_98)) maintained that continuous learning about teaching was also necessary for post-secondary teachers; his reasoning was that no solution to teachers’ problems is permanent.

A difficulty sometimes discussed regarding professional development activities is that there is a lack of knowledge about what constitutes truly effective professional learning, largely because effectiveness is usually judged by teachers’ responses to post-session questionnaires. There is actually very little known about professional development ([S. M. Wilson & Berne, 1999](#_ENREF_227)). Professional development opportunities are usually matched with the priorities of the school governing system or techniques which result in immediate raising of student test scores, rather than true learning opportunities or the teachers’ needs and desires ([Day, et al., 2007](#_ENREF_55)). Some commentators go so far as to claim that many professional development activities currently espoused have no basis in research ([Lawless & Pellegrino, 2007](#_ENREF_128)).

Eun ([2008](#_ENREF_65)) agreed that development studies of practicing teachers are “rare or virtually non-existent” ([p. 151](#_ENREF_65)). He argued that teacher professional development activities should be grounded in educational theory; he makes a substantial case for placing these in a Vygotskian theory of development. Doing so appears to fit fairly well. Optimal professional development would have teachers working in their own zones of proximal development in social settings with support mediated by both materials and by other teachers. What has been recommended for students is recommended for teachers: learning not through the addition of items to a data bank, as listening to professional development lectures might be, but learning through active participation in making sense of the phenomena presented ([Hein, 1998](#_ENREF_95)).

Huberman’s ([1993](#_ENREF_104)) Swiss secondary teachers generally did not see inservice training as an opportunity to gain knowledge about how to solve classroom problems or master facets of their work which they see as needing improvement. Rather, teachers saw in-service training as providing them with social contact with other teachers. In-service training contribution to both pedagogical mastery and handling the psychological facets of teaching was “slim” (p. 241). An examination of teacher biographies similarly showed that conventional in-service education was rarely mentioned by teachers as influential ([Butt & Townsend, 1990](#_ENREF_30)). Interviews with Canadian teachers at four schools confirmed this; formal education in classroom technology use had little impact on teaching practice. However, when the teachers actually wanted to know how to use technology, informal learning experiences, undertaken on the job and with colleagues, were most influential ([Granger, Morbey, Lotherington, Owston, & Wideman, 2002](#_ENREF_83)).

Primary teachers have expressed a more positive view of professional development events than secondary teachers; they had a higher opinion of both the quality and range of opportunities offered ([Day, et al., 2007](#_ENREF_55)). Still, 80% of teachers in this study viewed professional development events as “an important professional life investment” ([p. 148](#_ENREF_55)).

A partial explanation of the lack of inservice effectiveness could be explained by a study done with science museum visitors ([Falk & Storksdieck, 2005](#_ENREF_67)). Science museum visitors who entered with high knowledge and thought there would not be much new to them did not learn much; those who entered with high knowledge and an attitude that there was always something new to learn actually did learn. In both cases, the visitors held self-fulfilling prophecies.

These attitudes of both teachers toward in-service education and visitors to museums shed light on the behaviours of post-secondary teachers in relation to teaching improvement. The growth of the Scholarship of Teaching and Learning on-campus study groups, organisations, conferences, and journals may have grown out of the recognition that post-secondary faculty do not find conferences helpful. The faculty members are beginning to pursue improving teaching in informal ways, learning with and from each other.

There is some recent thought that the conditions of continuous teacher learning, once dominated by the occasional professional development lecture, should be changed altogether ([Clandinin, 2008](#_ENREF_33)). The professional development paradigm continues to be dominated by the form created during the era of the lecture circuit, but teachers now not only include those who have adapted to learning through “Googling” their questions but also those who have never used physical library card catalogues because such cards no longer existed during their lives as students. Personal learning has grown far beyond listening to lectures, and schools are increasingly being called upon to allow teachers to direct their own learning.

When formal learning opportunities exist, such as those in organised classes, workshops, and conferences, these are most effective when chosen by the teacher. Effectiveness is also affected by the participants’ perception that the presenter is another teacher with the same issues. This perception generally impacts teacher audiences more positively than presenters who adopt an “expert” role or who are academicians. Some organisations intentionally use only classroom teachers as workshop presenters for this reason. After a conference organised by teachers, an English head teacher who attended remarked that the conference was quite effective “because teachers, not academics, ran the thing” (personal communication, Jill Wells, November 9, 2009).

In a discussion of teachers either ignoring change to their practice or attempting to introduce change, one of the most relevant studies is an investigation into teachers’ perceptions of their pedagogical mastery. In this, teachers identified areas of non-mastery and then provided their attempts at remedies. Teachers approached solutions through non-systematic trial-and error attempts and sought outside assistance only ten percent of the time ([Huberman, 1993](#_ENREF_104)). This independence has been the dominant culture in schooling through the eras of unsuccessful change, and it may inform discussions on professional learning communities.

***Professional learning communities.***

Professional learning has a strong relation to theories of learning in the classroom. Currently popular constructivist learning theory encourages educators to view learning as helping students to make sense out of phenomena presented to them, instead of the earlier behaviourist view that learning is an interaction of input and output. Two theories related to constructivism are situated learning theory and activity theory.

The usual professional development opportunity is antithetical to situated learning theory ([Lave & Wenger, 1996](#_ENREF_127)). Situated learning theory states that learning does not have a beginning and an end but is social, residing in everyday life. Effective learning is acquired in conjunction with the immediate felt need for that learning. If this is true, then teacher learning opportunities would be most effective embedded into the daily work, rather than as discreet events in summer in-service classes. Teachers could lead their own learning, either independently or with a partner.

This approach would not provide much structure to the learning and is similar to the informal networking which is present in many schools already. Teachers’ autobiographies cited as influential their own groups of peers; all teachers mentioned collegial relationships and most wrote positively about small groups with whom they exchanged ideas ([Butt & Townsend, 1990](#_ENREF_30)). Hodkinson and Hodkinson ([2005](#_ENREF_100)) argue that this kind of learning, which is collegial and supportive and immediately related to teachers’ needs, is truly most effective; and that more encouragement should be provided for these opportunities. The opportunity to network and collaborate at a school-based level has been shown in several studies to reduce the likelihood of teacher attrition ([Borman & Dowling, 2008](#_ENREF_22)).

When teachers work together to investigate education, they form a professional learning community. Teachers are engaged with each other in collaborative informal action research. This provides the opportunity for authentic learning ([Putnam & Borko, 2000](#_ENREF_171)), defined as learning which has a real context and application. Professional learning communities are promoted as one way to encourage sustainable, effective professional development ([Darling-Hammond, et al., 2005](#_ENREF_49); [Fullan, 2007](#_ENREF_72); [Goodson, 1991](#_ENREF_79); [Hargreaves, 2003](#_ENREF_89)). Teacher-driven learning communities supporting change would likely avoid failing due to lack of funds or lack of enthusiasm from one person. They can be quite supportive in encouraging teachers to attempt changes which they would not attempt on their own ([Grimmett & Crehan, 1992](#_ENREF_85)). Additionally, colleagues can be effective agents of change; teachers appear more open to new ideas from their colleagues than from outsiders, as found in a study of 40 teacher-leaders ([Margolis, 2008](#_ENREF_145)).

Although professional learning communities are often highly organised, simply having a collegial, informal inquiry community atmosphere at the school can be effective in encouraging teachers’ continuous learning. These informal networks are spontaneous, voluntary, development-oriented, and pervasive through time. They operate within groups which have developed trust, and they address “just-in-time” learning. However, because of their spontaneous nature, informal groups can also be unpredictable ([Ritchie & Rigano, 2002](#_ENREF_177)). One of the interesting findings regarding collegiality is that teachers from homogenous preparatory subjects, such as mathematics and the sciences, are more likely to be collegial than teachers from subjects with vast diversity in the field, such as social studies teachers ([van Veen, et al., 2001](#_ENREF_218)).

Professional learning communities in colleges and universities are encouraged by their institutional leadership. Sixty-eight Midwestern universities belong to a consortium whose focus is action research ([Fallon, 2008](#_ENREF_68)). The consortium holds biannual conferences in which teachers share their teaching with each other. At the institution level, the scholarship of teaching and learning is encouraged through book study groups, professional development classes, and Internet-based “webinars.”

Schools need to provide the leadership and time for teachers to form the trust and collegiality necessary to make professional learning community ventures successful. This approach has been used in Washington State with teacher development concentrated on improving science inquiry learning and history teaching using source documents. These groups of teachers had common subject areas or grade levels; the groups met together for several days spread over the course of a semester, year, or several years. Professional development such as these can be sponsored by school districts or consortiums. This is in contrast to the persistent model of the one-day workshop or class which a teacher attends. The model of topic-focussed one-week summer workshops also fit into the more effective model, but they may need to have follow-up cohort meetings during the school year in order to be truly effective. Again, these appear to be sponsored by school districts or consortiums rather than private enterprise. These conditions of leadership and time are not always available ([Day, et al., 2007](#_ENREF_55)).

***Informal learning: Personal learning networks.***

The teachers in the Day, et al. ([2007](#_ENREF_55)) study communicated a sense that they wished for personalised, differentiated learning opportunities. Consistent with Eun’s ([2008](#_ENREF_65)) suggestion, teachers want their professional development to be Vygotskian: each teacher should be able to learn in his or her zone of proximal development. Interviewed for American public television, Gee ([Rushkoff, 2010](#_ENREF_182)) pointed out that textbooks and lectures have been proven for years to be less effective than other learning methods; on-demand learning opportunities now abound. It is in this sense astounding that teachers’ professional learning has relied on lectures at the same time that the teachers themselves are encouraged to introduce active learning into their class time.

Active learning encouragements also exist at the post-secondary level, and they also, ironically, are presented in the form of lectures. South Dakota State University recently began an initiative called the “Active Learning Cloud”; faculty members attend lectures on how to engage students through digital interactive tools. However, the presentations are lectures themselves and do not require audience participation.

***Internet options for increasing teacher quality.***

The most informal effort at providing professional development opportunities to teachers, which also has possibly the widest effect, is the use of the Internet. One formal organisation is TeachersTV ([2008](#_ENREF_59)), funded by the Department for Children, Schools, and Families. TeachersTV produces and broadcasts high quality 15 and 30 minute professional development segments on topics ranging from developing coaching relationships to ways to incorporate technology into lessons. These are available both as television broadcasts and on their website. TeachersTV also incorporated a participatory forum into their website. Learning and Teaching Scotland ([Learning and Teaching Scotland, 2008](#_ENREF_129)) is similar; this site also has many resources, including video clips of teachers, headmasters, and classroom episodes. Other informal sites provide collections of helps for teachers; two of these are from Sue LeBeau ([LeBeau, 2009](#_ENREF_131)) and Kathy Shrock ([Schrock, 1995](#_ENREF_185)).

The highly informal and at times quite entertaining TeacherTube ([2008](#_ENREF_198)) encourages professional development in a different way: teachers can share with each other what they are doing in their classrooms. Included on this site are short videos of student work, administration parodies, and education commentaries. Truly inspiring are the videos from Mr Duey ([Duey, 2008](#_ENREF_58)), who makes and posts rap songs about maths, and pod casts on teaching chemistry lessons recorded by teachers ([Bergmann & Sams, 2009](#_ENREF_19)). Teachers assign the podcasts as homework, and they help students with labs and with guided and independent practice during class time.

Blogs are another Internet option for teachers. On some of these, subscribers can post lessons and ideas, or they can submit comments or questions. The Scottish teachers’ intranet system demonstrates one way that blogs can support teachers. Learning and Teaching Scotland leadership involved teachers in planning the technology before it was put in place. There was no “transmission model” of intranet formation, so the system was designed to truly be accessible to teachers. Teachers then formed creative communities through this intranet and shared practice. Said one teacher,

We have a thriving online community, all blogging about what they are doing in schools. Teachers from Orkney to Edinburgh are writing about new ideas they're trying out in class ([Blane, 2006, "Gaining confidence," para. 6](#_ENREF_21)).

Student curriculum ownership issues can be erased when teachers take part in activities such as blogging. Because the system is teacher-accessible, the teachers overcame the perceived barrier to learning to blog in their efforts to share their practice. Also in Scotland, modern languages teacher Ewan McIntosh has his student blog as well. He said,

It’s worth making the time because of the tremendous motivation kids get from having an audience for their work. Also it saves teachers time in the end ([Blane, 2006, "Gaining confidence," para. 13](#_ENREF_21)).

Aside from providing interactions between teachers previously unknown to each other, working on a voluntary basis, the Internet is helping student teachers work through problems and share successes. Teacher education preparation programmes use Internet support groups which function similarly to face-to-face professional learning communities. Teacher education faculty have their pre-service teachers use social networking sites and e-mail groups for sharing practice. Student teachers can post problems or successes, and others can comment on these.

Online forums also can be useful to teachers. One which targets university faculty members is hosted by the journal *The Chronicle of Higher Education*. Forum topics frequently change and can be started by members. One of the most recent topics was titled “Risk taking in the classroom” ([melba\_frilkins](#_ENREF_157)). In just five days this forum generated 63 contributions. The contributions of course were not all of risks, as some contributions asked for clarification or gave approval to another’s comment. The original posted question, however, revealed a desire to learn more about risk-taking. At the same time, that question revealed the felt intensity of failed experiments:

In terms of teaching methods or style, what it the biggest risk that you have taken, or do take on a regular basis? What are the biggest risks that actually panned out for you? (I’m reading a little article about being a great teacher, it says to take risks but gives no examples. My most memorable risks were failures, because it’s the crash and burn that sticks in memory) ([melba\_frilkins, 2010](#_ENREF_157)).

The difficulty with Internet resources such as forums or professional development video is similar to that of other professional development opportunities: time. Headmaster Jill Wells said that there wasn’t time enough in her day to watch videos on TeachersTV (personal communication, 9 November 2009).

**Summary of how teachers approach innovation.**

Whilst teachers may be inspired to introduce innovations through hearing of them through informal sources, teachers exist in a web of interconnected factors which can either encourage or discourage innovations. The literature addresses formal conditions necessary for teachers to introduce change, such as the supports available to teachers, the level of acceptable risk-taking in the situated environment, and time available for creating and following through with innovations. The teacher’s own orientation toward change also can affect whether or not teachers begin or persist with innovations.

The literature examined until this point has been on the general topic of educational innovation and the teacher him or herself as an innovator. The remainder of the literature review specifically refers to literature oriented toward Storyline.

**Who, What, When, Where, Why, and How: Teachers Innovating with Storyline**

Because the Phases 2-3 teachers innovated with the common context of Storyline, a review of the literature specific to Storyline is included here. If the innovation were to have been another teaching method, that literature would be reviewed here instead. Chapter One, Context, introduced Storyline. This curriculum approach, teaching method, and pedagogy began in the middle 1960s in Scotland through the efforts of teacher trainers at Jordanhill College (now part of the University of Strathclyde, Glasgow) working with teachers. Structures and ways of working were, and continue to be, continually open to suggestion from teaching practitioners. Schwanke and Gronostay ([2007](#_ENREF_191)) state that

Storyline is one of the rare examples of the successful development of a pedagogy that draws mainly on the experience and expertise of practitioners: staff, tutors, teachers, headteachers and pupils (p. 54).

This section of the literature review will build on the “who, what, when, where, why, and how” structure of the previous sections in examining the available literature on teachers who use Storyline: who they are, the educational policies connected with them (where and when), why they use Storyline, and how they do so. In presenting this information, it is important to note that empirical studies with Storyline teachers are not widespread. Storyline has spread through a teacher network rather than through government departments of education, schools of teacher education, or publishers’ promotions; teachers have not insisted on empirical evidence that Storyline “works.” They have used Storyline because it makes sense to them.

Recently a few doctoral theses have used Storyline as the backdrop. One Storyline study was conducted by a nurse working with overweight and diabetic children in Denmark ([Mark, 2007](#_ENREF_146)). Another doctoral thesis examined children’s ownership of curriculum; this was conducted in England at an American International school ([Hofmann, 2007](#_ENREF_101)) which could operate outside of the English National Curriculum. In other doctoral theses, Guney is investigating Turkish children’s learning of science when taught with either traditional or Storyline methods (Serkan Guney, personal communication, 22 April 2010); Ahlquist is currently researching the Storyline method impact on young Swedish foreign language students (Sharon Ahlquist, personal communication, 3 October 2010); and Tepetas is investigating Turkish children’s comprehension, comparing Storyline and traditional teaching methods (personal communication, Sule Tepetas, 3 October 2010). In all these studies the subjects are (or were) children rather than teachers, but the works will be referred to within this section, in addition to other works within the Storyline literature.

**Storyline teachers: Who, where, and when.**

As mentioned in Chapter One, Context, Storyline is used outside of the classroom as well as in it. Storyline has been used with intergenerational projects ([Stanton & Tench, 2003](#_ENREF_203)) and in nurse and police training ([Bell, 2009](#_ENREF_14)). However, this literature review is a study of teachers; their identities and career stages are the focus of this section.

***Storyline teachers’ identities: Professional and situated aspects.***

The teacher’s professional identity as used in this study is wrapped up in the governing educational policies and what the teacher considers good practice ([Day, et al., 2007](#_ENREF_55)). The teacher’s situated identity is that life in and near the teacher’s own classroom: school-level culture and policies, colleagues, and the children in the classes. These elements of identity have proven quite influential in the use and spread of the Storyline approach.

Storyline is flexible enough to address most teaching situations and teachers have adapted it to use in elementary, secondary, and post-secondary schools. But although it is adaptable, Storyline does not always easily fit with professional and situated cultures. Some teachers experience initial enthusiasm for using Storyline but decide that Storyline teaching does not match their demanding contexts. Barr and Frame ([2007](#_ENREF_10)) mention two main obstacles in teacher adoption of the Storyline approach: centralist control and teaching stereotypes. Storyline has thrived in countries which do not have high levels of centralist control over teacher behaviours, such as the Scandinavian countries. In many other countries, the teaching stereotypes of rote learning, conformity, and accuracy valued above all else are pervasive and do not fit well with Storyline teaching philosophy. In areas where this stereotype is strong, it is difficult for teachers to challenge what may be the expected norm with a teaching method such as Storyline. However, teaching cultures can also change. Storyline use in Scotland decreased when the 5-14 curriculum was adopted during the Thatcher era due to the apparent emphasis on compartmentalised subject areas, but the new Scottish Curriculum for Excellence appears to embrace teaching approaches such as Storyline and others which encourage subject area integration ([S. Bell, 2007](#_ENREF_13); [McNaughton, 2006](#_ENREF_153)).

Storyline teachers often are situated in a local network of teachers using Storyline; whole schools may choose to use Storyline as a teaching method. Two such examples are Aberfoyle Primary School (Stirlingshire, Scotland) and Highland School (Bend, Oregon, USA). Nearly all Icelandic teachers are aware of Storyline, and many of them use it ([Greven & Kuiper, 2007](#_ENREF_84)). The community aspect such as that in Storyline schools may be quite influential; there may be a need for teachers to develop knowledge and expertise in community as they act as Storyline designers. There is some concern that due to professional preparation paradigms, teachers may not be ready to act as designers, or that switching from previous behaviouristic teaching to the constructivist teaching which Storyline requires may be difficult ([Letschert & Grabbe-Letschert, 2007](#_ENREF_138)). Greven and Kuiper mention that teachers themselves readily admit this.

***Storyline teachers: Career stages.***

There is no available evidence on the career stages of Storyline teachers, such as when in their careers the teachers began using Storyline or when in their careers the teachers feel truly comfortable with Storyline teaching. Attendees at the 2009 international Storyline conference were in early, middle, and late career stages. Leaders who attend annual organising meetings are early, middle, and late career stage teachers, head teachers, and academics, and attendees also include retired teachers and academics. The academics attending these meetings are in the minority but are representative of several nations, including Norway, Iceland, Scotland, and Germany. Teachers outside of the classroom mainstream, including dramatists and nurse educators, also attend these meetings.

**Storyline teachers: What innovations?**

The topic of what innovations teachers make with Storyline was addressed in Chapter One, Context. Storyline teachers often integrate subject areas, but it is not necessary to do so. Because the teachers are the designers, the subject area is his or her choice. As a whole, the innovative nature is the factor of using a planned narrative framework which incorporates the element of not explicitly directing every activity of the children. All of this, of course, is accomplished whilst incorporating curriculum standards.

**Storyline teachers: Why use Storyline?**

In my twenty-six years of teaching . . . . I have never come across a more powerful teaching and learning structure than Storyline ([Lindberg, 2007, p. 164](#_ENREF_140)).

Each time I used a Storyline topic, I was struck by its effectiveness in engaging my pupils in a way that brought the best out in them ([Adamson, 2007, p. 194](#_ENREF_2)).

The quotes above from former primary and secondary Storyline teachers demonstrate that after having taught with Storyline, teachers realise its effectiveness. However, these teachers do not explain why they began using Storyline. There exists only one example in the literature of what catalysed a teacher into using Storyline, and that had to do with desperation.

Scottish art teacher Alice Bell related how she reacted to what she initially saw as the negative impact of curriculum changes. Previously given a year to prepare students for the Higher Art Examination (art history), her timetable was reduced to three months. Her previous method had been through lecture, though she admitted it was boring to both her students and herself. Bell changed her classroom approach to utilise the pedagogy of Storyline because she knew her previous method would be ineffective in her new timeline ([A. Bell, 2007](#_ENREF_12)).

Like Alice Bell, teachers may decide to use Storyline because they believe it may meet their needs. Teachers using Storyline have not demanded empirical evidence regarding Storyline effectiveness, and teachers who are introduced to Storyline but do not use it have not cited empirical evidence for its lack of effectiveness. At this point in the existing literature, it may be helpful in understanding teachers to make presumptions and leaps from students to teachers.

Findings with Year 5 Storyline students may apply to why teachers choose to teach with Storyline. Storyline students said that they learned better when involving their imaginations or when asked to create ([Hofmann, 2007](#_ENREF_101)); this fits with Bloom’s taxonomy of learning. It is possible that teachers likewise teach better when operating at high levels of Bloom. The question to ask is then, “Do teachers believe that they teach better when involving their imaginations or when creatively involved with their curriculum?” This parallel was apparently not addressed in Hofmann’s study, as the study was conducted through interviews with students.

Another parallel between student learning and teaching could be the relationship of cognitive and affective dimensions and work. Increased student engagement and ownership of learning may require that “knowledge should not be purely ‘acquired’ but ‘lived’ or ‘felt’” ([Hofmann, 2007, p. 73](#_ENREF_101)). McNaughton ([2007](#_ENREF_154)) expanded on this in relating Storyline work to drama. She proposed that because drama participants “live through” (p. 151) dramas rather than merely watching them, their reflections and evaluations result in deeper understanding of situations. The students know the dramas are not real, but because they suspend their disbelief, they can inhabit, be aware of, and interpret both the real and the imagined world. This concept of helping students to “live” knowledge echoes situated learning theory, which argues that effective learning takes place when learners are engaged in practice ([Lave & Wenger, 1996](#_ENREF_127)).

Continuing this argument but changing the focus to teachers, it is possible that teachers may increase their own engagement and ownership when they are involved both cognitively and affectively. This point is supported through the remarks earlier made in this review regarding the high importance that teachers place on relationships with students. It could be that teachers too need an affective dimension which they usually meet through relationships with students; perhaps this affective dimension is further enhanced through using Storylines, which depend on imagination, creativity, and the teacher acting as designer. This again circles back to teachers’ desire for complexity.

A final point regarding teacher identity and the possible parallels between teachers and students exists with the issue of originality and community. Hofmann ([2007](#_ENREF_101)) found that students talked of the originality of their work. That originality was oriented not toward themselves but toward the rest of the learning community in their classroom. Students did not value their own contributions as unique and original until others recognised them as such. It is possible that teachers also want to interact in a community of teachers in which they can share their work, in this case Storyline developments.

**Storyline teachers: How teachers process a narrative teaching method.**

How teachers engage in beginning a Storyline is possibly similar to how teachers innovate in other situations, and some aspects of Storyline provide no new challenges for teachers. However, deciding to teach through narrative contexts is usually quite different from teachers’ experiences, and here is the challenge ([S. Bell, 2007](#_ENREF_13)). The first section below presents four approaches to design which Storyline teachers appear to use; the following section presents some particular challenges experienced by Storyline teachers.

***Four design approaches used by Storyline teachers.***

On one hand, Storyline is a useable way to organise content into meaningful units, but Storyline is at the same time a basic pedagogical philosophy of encouragement ([Letschert & Grabbe-Letschert, 2007](#_ENREF_138)). The leading characteristic of Storyline is design, in which the teacher is the planner and the designer. However, not all teachers approach the design process in the same way. Four design paradigms appear to categorise and describe teachers’ approaches to design; these were first identified by Visscher-Voerman (1999, as referred to by [Greven & Kuiper, 2007](#_ENREF_84); [Letschert, 2007](#_ENREF_137); [Letschert & Grabbe-Letschert, 2007](#_ENREF_138)).

These four design paradigms are instrumental, communicative, pragmatic, and artistic. Letschert ([2007](#_ENREF_137)) developed a comparative table, which is helpful in the explanation. Table 2 represents a modified version which does not include Letschert’s examples of specific Storyline topics in existence, since without the reader’s familiarity of these topics, they do not contribute meaning. In the interest of clarification, this particular table also incorporates paraphrased objectives and success measures as identified by Greven and Kuiper ([2007](#_ENREF_84)), who gave examples of Icelandic teachers whose Storyline designs fit into the four design paradigms described in the table. These are instrumental, communicative, pragmatic, and artisitic. Each is further elaborated upon below Table 2, using examples from Icelandic teachers who taught at a variety of levels, primary through university.

Table 2

*Four Storyline Design Paradigms*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Design | Key features | Possibilities and constraints | Objective | Measurement of success |
| Instrumental | Goal-oriented  Planning by objectives  Logical  Methodological  Solution-driven | Direct application  Teachable  Danger of rigidity  External ownership | Create a consistent relationship between the designer’s envisaged results and the actual results | Did the design meet all the requirements set in advance? |
| Communicative | Deliberative  Shared responsibility  Based on consensus | Open strategy  Democratic decision-making  Time consuming | Consensus between parties | Did the design meet the requirements which the designer and other parties agreed upon? |
| Pragmatic | Prototyping  Has been proven useful  Repeatable | Mix of used examples and new designing  Shared ownership | Consultation with users and multiple iterations | Did the users find the resulting design practical and effective? |
| Artistic | Connoisseurship  Meeting the designer’s own quality criteria | High reputation designers  High degree of ownership  Demanding  Subjective criteria | Make use of the designer’s unique expertise and experience | Did the design meet the designer’s subjective criteria? |

Lilja, a secondary teacher, operated in the instrumental design paradigm. She did not use a Storyline planner exactly as is usually done. Lilja instead focussed on using Storyline’s concept of key questions, which she found could bring creativity but also a more meaningful whole experience for the students. She could arrange curricular form and content in a systematic way through adapting Storyline techniques for her own situation.

Gunhilder published four Storylines on the Internet, intended as resources for Icelandic teachers. Gunhilder’s Storylines provide examples of the communicative design paradigm, because all parties involved are considered and involved in discussions of the design. Her plans provide outlines or frames, but teachers are encouraged to add and remove aspects as they see fit. This is the most common Storyline form, exemplified also by primary teacher Bjorg. In Bjorg’s Storyline, the main objectives related directly to curriculum which must be included and were hers rather than the students’ objectives. She planned the outline of the whole story in advance. Although Bjorg had clear ideas of what the output would be, she left room for variation.

The pragmatic paradigm is shown through teachers who use others’ Storyline frameworks. Teacher Erla felt most comfortable using existing Storylines. Greven and Kuiper ([2007](#_ENREF_84)) pointed out that the design aspect of Storyline can be difficult and present problems; many teachers admit to not possessing the competency required for designing a Storyline. This competency is quite different from the competency required for carrying out a Storyline which someone else designed. Erla was willing to admit this.

Primary teacher Sif provided the example of the artistic paradigm. Prior to beginning a Storyline she had thought through what she wanted and established two main objectives. However, she felt that establishing all the details ahead of time was difficult, and she felt quite comfortable with using continuous inspiration whilst teaching. She was prepared to adjust the curricular process as necessary to accommodate both her own and her students’ ideas as they arose. This paradigm is less thoroughly planned in advance than are the other paradigms.

***Difficulties encountered in teaching with Storyline.***

Teachers approach Storyline teaching initially with some trepidation, due to the alternative nature of teaching with narrative rather than with more traditional textbook-recall, experiments, or project-based methods. Hofmann ([2007](#_ENREF_101)) referred to students when she observed, “The struggles, risks and pain involved in learning and ownership have rarely been discussed in the literature” (p. 68), but this can refer to teachers as well. Teachers’ struggles, risks, and pain involved in learning new approaches to teaching, particularly when combined with the strong ownership of methods like Storyline, are rarely discussed.

It is likely that another of Hofmann’s ([2007](#_ENREF_101)) conclusions from Storyline students applies to Storyline teachers. Storyline students at times can be uncomfortable when given the opportunity to exercise autonomy; they sometimes “feel they have no knowledge or experiences ‘of their own’ to choose from, or nothing to say that is valuable in school” (p. 67). It is possible that teachers, particularly those who are less experienced, feel the same way – the structure of Storyline may be too open for them. In the United States, Storyline teachers usually mark their plans with formal outcomes and goals; in England, headmaster and Year 6 teacher Jill Wells found that marking her Storyline plans in this way was helpful in justifying to herself that she was indeed addressing required aspects of the curriculum (personal communication, 7 March 2010).

One of Hofmann’s (2007) observations was more of teachers than of students.

It is not always easy to allow pupils ownership of their learning within the Storyline while simultaneously making sure the learning goals are being met and curriculum coverage achieved, if ownership is understood as freedom of choice and self-expression (p. 68-69).

In a demonstration of the persistence of previous conceptions, the students in Hofmann’s study were not always “willing to give up their constructions in favour of factual knowledge” (p. 69) such as that produced through observation of events. Once again this applies to teaching. Teachers also may not be willing to change their constructions of what good teaching looks like, particularly when presented with alternatives which rely on narrative, as Storyline does.

**Summary of Storyline teachers.**

The experience of Jill Wells exemplifies the network development of the Storyline teaching method. She learned about Storyline, taught with it, attended workshops and conferences, and finally brought a Storyline workshop to her own school. In terms of identity, she has diversified mid-career into roles as both teacher and headmaster. She enjoys her autonomy and uses her established confidence as headmaster and experienced teacher to support her innovations, which she sees as effective for both herself and her students. She hosted a Storyline workshop at her school and is now in the process of developing a local Storyline professional learning community.

**Conclusion**

Governments have recently sought to increase student achievement on standardised tests. Governing boards of education recognised that high quality curriculum and high quality teachers are influential variables in promoting student achievement. This recognition resulted laws intended to introduce change in education with the intent of increasing the quality of both curriculum and teachers. However, the laws in many countries resulted in a high degree of standardisation coupled with a lack of professional support in which to implement the mandated standardisation. Many teachers felt stressed and de-skilled.

The problem of how to increase quality in curriculum and teachers remains. Aside from suggestions to abolish recent education laws, various solutions have been presented. These ideas include increasing the quality of professional development and intentionally creating genuinely collegial professional learning communities which feature either formal or informal organisation. Professional learning communities also exist on the Internet; although teachers may formally take classes on-line, teachers can informally trade ideas through dedicated websites.

Teachers themselves also initiate change to their practice. Teachers do diversify and explore with curriculum, often on their own. Some of these teachers innovate in this way whilst still working under governmental directives. The question is, what are the experiences of innovative teachers?

Reviewing the literature reveals some helpful direction. Teachers who self-initiate innovation may be in a diversification stage in which they challenge themselves; in this career stage they are highly motivated and dynamic. Self-reflection and conversations with students or other teachers both catalyse innovations; teachers’ motivations to innovate include not only the desire to teach more effectively, but also their own desires for complexity, challenge, and autonomy.

The Scottish Education Department published in 1965:

Indeed it is quite impossible to treat the subjects of the curriculum in isolation from one another if education is to be meaningful to the child ([Harkness, 2007, p. 19](#_ENREF_92)).

These words offer an analogy for the teacher. Perhaps it is impossible to treat the parts of teaching in isolation from one another if the job is to be meaningful to the teacher. This echoes the finding in a study of four Finnish teachers ([Harjunen, 2009](#_ENREF_91)): although they held the same pedagogical ideals, their praxis differed. These four teachers each had their own tensions and had to find their own balance between them. Perhaps this is the reason why teachers have felt de-skilled and de-professionalised. Innovating in their classrooms may give teachers the opportunity to re-integrate all of their teaching into a meaningful whole.

Personal challenge exists outside of teaching, of course; “flow” certainly refers to this. Challenge exists in architecture, for instance:

Every now and then we are moved to add gargoyles or garlands, stars or wreaths, to our buildings for no practical reason whatever. . . . We see in them evidence of those sides of human nature which enable us to thrive rather than simply survive ([de Botton, 2007, p. 212](#_ENREF_56)).

Teachers may want to add to their curriculum the educational equivalent of the gargoyle or garland. Providing students with the knowledge and abilities which enable them to pass standardised tests enables both the teacher and the student to survive; providing the students with the gargoyles and garlands enable both the teacher and the student to thrive. Letschert ([2001](#_ENREF_135)) wrote that standard programmes do not work well because there are no standard children. Perhaps a paraphrase of Letschert’s words best sums up the existing literature on teachers and innovations: a standard programme does not fit teachers’ professional development; there are no standard teachers. Teachers differ, but are not unequal. This means more attention for the individual possibilities of each teacher.

**Chapter Three**

**Methodology**

**The Main Aim of the Study**

The main aim of this study was to explore the views of South Dakota teachers concerning their involvement in initiating curriculum change. The Phase 1 teachers were those who self-identified as teaching outside of the textbook; they were teachers who essentially self-identified as continuing with innovations. Phases 2-3 participant teachers were those who innovated with the common context of the Storyline teaching method. Before beginning the rationale for the research design, a re-introduction of Storyline will help re-orient the reader regarding the particular innovations the Phases 2-3 teachers implemented.

As introduced in Chapter 1, Context, teachers using Storyline choose the “story” elements of setting and characters which interact in a plot through classic story elements of problem and resolution. Because students create visuals of both characters and settings, they develop ownership in their learning. Students create a defined context for the subject-matter content which they uncover and explore through plot developments. An example of a Storyline adaptable to many levels is a fish farm ([Bell, Dunlop, & Weston, 1994](#_ENREF_15)). In this Storyline, students might create townspeople and a village by an inlet; the plot would involve one of the local people (not a character belonging to a student) starting a salmon farm. The teacher plans key questions in advance, such as: What are the legal requirements for beginning a fish farm? How will a fish farm affect the ecology of the area? How is salmon farming accomplished? Will the farm affect other industries? What effects does the fish farm have on the neighbours and community? Can the community sustain both fish farms and tourism? What potential profit and loss is there? What is the current state of fish farming in the larger area? Students then research and report on the results of their research. The subject matter content can easily include not only the sciences but also government, sociology, written communications, and mathematics.

I chose Storyline as the format for change for Phases 2-3 because of three main factors which Storyline provided: first, the participants were all unfamiliar with the way that Storyline asks them to organise, think about, and present curriculum; second, the Storyline structure can be adapted by teachers in most teaching situations; and third, Storyline requires the teacher to use creativity and flexibility in both planning and teaching. In order for the study to be as informative as possible, the elements of newness and of adaptability were essential. The requisite creativity on the teacher’s part contributed to each participant’s ownership of the curriculum change.

**Design Rationale**

A discussion of scientific education research methodology occupied most of the October 2009 issue of the American Educational Research Association’s *Educational Researcher*. In this issue Howe ([2009](#_ENREF_103)) and Tillman ([2009](#_ENREF_207)) criticise the National Research Council’s 2002 guidelines for scientific education research because the guidelines appear to highly favour positivistic, quantitative research methods. In the same journal issue, Bredo ([2009](#_ENREF_24)) argues that the only standard for educational research method choice is that the method “should perform its function well” ([p. 447](#_ENREF_24)). An interview approach would perform its function well, I thought, since it would allow for contextualised, in-depth probing regarding teachers’ thoughts about innovation. Quantitative methods would not reveal motivations, reasons, difficulties, and benefits; written surveys or lists of questions would not provide the opportunity for the researcher to clarify. The needs of this study determined the method used: interviews ([Goodson & Sikes, 2001](#_ENREF_82); [Kelly & Lesh, 2000](#_ENREF_118)). Based on the recommendation from Miles and Huberman ([1994](#_ENREF_159)), I developed interview guides to prompt conversation.

In designing this study I kept in mind Heshusius’ ([1994](#_ENREF_97)) advice that students do not care about researchers’ methodologies; they want researchers to listen to them. Teachers may have a similar feeling. Though teachers are probably more aware than are students of the need for interpretive accuracy, teachers’ concern with educational researchers is likely less with method and more with the opportunity to have a better-represented voice in educational research.

My desire to represent the teacher’s voice also came from a literature search which revealed few works in which teachers’ stories are shared ([Barone, 1992](#_ENREF_9); [Goodson, 2000](#_ENREF_80)). In the effort to include the teacher’s voice, I used the tactic of recording life histories with multiple cases. Multiple cases helped me to develop a “good picture of locally grounded causality” ([Miles & Huberman, 1994, p. 26](#_ENREF_159)).

A life history interview approach allowed me to explore the teachers’ individual contexts and to further understand their motivations for initiating time-consuming innovations in their teaching. I realized that understanding this could be informed by analysing the affective aspects of teaching and learning ([Kelly & Lesh, 2000](#_ENREF_118)), so I was motivated to interview teachers. One classic life history approach uses repeated visits and lengthy interviews with participants, but this was not necessary for the purposes of this study, since the sole case study was not the object. Rather, the object was to gain understanding of the phenomenon of teacher-initiated innovation through multiple cases. Locating the teachers’ professional practice within a whole-life perspective ([Goodson & Sikes, 2001](#_ENREF_82)) enabled the teachers to express themselves with regard to the research conversation with their own thoughts leading our conversations, rather than my direction. I as researcher became the learner and the teachers were the obvious experts. Because of the life history method adopted, no identity difficulties existed; there was no concept of researcher-expert (the researcher was not the expert) and teacher-colonised (the teachers were not told what to do by the researcher) ([Goodson & Sikes, 2001](#_ENREF_82)) to impede data collection. Although life histories as told to the researcher can contradict what researchers find through other methods, the study I conducted was centred on teachers’ motivations and teachers’ experiences, rather than an evaluation of effectiveness of curriculum. Because the study was not an evaluation, triangulation would have served little purpose; the limited perspective of the one person was exactly what this research needed.

Choosing a life history approach enabled me to build the study on the theory that teachers have career stages, including one of diversification in which they explore alternatives in their classrooms ([Huberman, 1989/1993](#_ENREF_104)). The life history orientation reflected my own experience as a teacher; as a teacher I value the teacher’s voice and wanted to make sure to include that in the study. I also was able to build on the idea that teachers’ professional lives are influenced by an interplay of situated, professional, and personal factors ([Day, et al., 2007](#_ENREF_55)). Again others’ research reflected my own experience; successful mediation between these factors increased my ability to teach well. I also wanted to include the advice that studies of teaching and change should be descriptive and include the context and the perceptions of the study participants ([Bryman, 1988](#_ENREF_27); [LeCompte & Preissle, 1992](#_ENREF_132)). A life history approach, therefore, worked well for these purposes.

**Research Approach Adopted**

I divided the study into three phases. The purpose of Phase 1 was to discover the views of teachers who on their own initiative had already innovated with curriculum. This first part of the study consisted of interviews with 22 teachers, which averaged one half hour each. In these interviews, Phase 1 participants described to me their innovative practices. During this phase of the study my relationship with the participants was neither one of uninvolved positivism nor one in which I was the agent of change, but one of interpretation ([Bredo & Feinberg, 1982](#_ENREF_25)).

Phase 1 of the study supported Phase 2, in which I investigated the views of teachers in the process of initiating curriculum innovations. This phase involved critical theory as Bredo and Feinberg ([1982](#_ENREF_25)) define it, in which I inevitably became the agent of change. I led teachers in a workshop on Storyline and then investigated the teachers’ reactions to and thoughts about the change they initiated. My role returned to interpreter as I interviewed the eight Phase 2 teachers each several times, before, during, and after implementing their self-written curriculum.

Phase 3, conducted a year after the initial implementation of the innovation, addressed issues of sustainability. The participants were the same eight as in Phase 2, and my role again was one of interpretation. Table 3 identifies these phases.

Table 3

*Format and Purpose of the Study Phases*

|  |  |  |
| --- | --- | --- |
| Phase | Number of participants | Format and purpose |
| 1  Spring 2008 | 22 | One interview each; average 33 minutes  Discuss innovations already in place |
| 2  Autumn 2008  and  Winter 2009 | 8 | 22 individual interviews; average 32 minutes  3 group discussions; average 76 minutes each  Discuss innovations as they develop  Discover life histories |
| 3  Autumn 2009 | 8  (participants same as Phase 2) | One interview each; average 15 minutes  Discuss innovation sustainability, teacher identity, and anticipated/resultant benefits of participating in the innovation |

**The Research Questions and How They Were Addressed**

The main research question was, “What explains teacher-initiated curriculum innovation?” I considered possible factors such as the teacher’s time, motivation, curriculum policies, professional development, and years of experience. Searching the literature in these areas also led to the literature on educational change and teachers’ lives ([Day, et al., 2007](#_ENREF_55); [Fullan & Hargreaves, 1992](#_ENREF_73); [Huberman, 1993](#_ENREF_104)). The conclusions in the literature gave reason for me to group my ideas into three categories for investigation into self-initiated curriculum change:

* personal issues: the teacher as a person (career stage, life experiences, home life, assumptions and beliefs underlying their practices; thoughts about how they teach, and their motives for initiating change);
* situated issues: the teacher’s work context and conditions (grade levels, physical conditions, and professional learning communities; local school and community culture); and
* professional issues: the teacher’s formal preparation and the wider culture of teaching, including state and national expectations.

The main research question, “What explains teacher-initiated curriculum innovation?” expands into, “What benefits do teachers anticipate will result from initiating innovation, and are these benefits realised and sustained?” Based on these questions, the key research questions then became:

* What are the innovations that teachers make?
  + How do the teachers initiate innovation?
* What are the motivations for teachers who innovate with curriculum?
  + What benefits do they anticipate would result from initiating innovation?
* Is there a common identity characteristic among these teachers?
  + How do the teachers fit into career/life stages as identified by Huberman (1993) and Day et al. (2007)?
  + What do the teachers perceive as dominant in the dimensions of identity (professional, situated, personal), as identified by Day et al. (2007)?
  + What supports do the teachers use whilst initiating innovation? (working conditions, school culture, home life, a particular professional development experience)
  + How does making curricular innovations affect a teacher?
    - Are the anticipated benefits realised and sustained?
    - What are their satisfactions and frustrations?
    - Does innovating with curriculum enable teachers to sustain their motivation and commitment?
    - Does this return to the issues of dimensions of identity?
* How do teachers sustain curricular innovations?

I then incorporated these key research questions into interview guides designed separately for each phase of the study. The interview guides are included in the sections below as appropriate for each phase.

**Methods and Procedures for Data Collection, Phase 1**

**Phase 1 sample selection.**

***Limits: One school district and teachers of core content areas.***

For Phase 1, I planned to have a series of short interviews regarding existing innovations with 20 to 25 grades K-12 (ages 5-18) teachers in one school district. The limit of one school district would provide some consistency in the areas of teaching environment, resources available to teachers, general leadership philosophy, pupil-related variables, and community. In the selected school district, grades K-5 (ages 5-11) teachers generally teach one class or group of children the core content areas (mathematics, language arts, sciences, and social sciences), and specialist teachers provide instruction in art, music, and physical education. Teachers of grades 6-12 (ages 12-18) are subject area specialists in core content areas, physical education, technical arts, or fine arts. It is often the case that curricular materials are purchased by the school district only for core content areas and not for the other subjects. Because I wanted the participants to be those who innovated despite having curricular materials provided, I limited the participants to teachers of core content areas.

I gave the option to self-select for this study to all teachers of core content areas in the selected school district. I also asked both university education faculty members and other teachers for recommendations of teachers they thought worked in innovative ways. The result was interviews with 22 teachers, evenly distributed between elementary and secondary schools. This method of choosing participants reflects Tillman’s ([2009](#_ENREF_207)) assertion that purposeful selection, rather than random selection, results in participants who have culturally-specific knowledge of interest to the researchers. In Phase 1 of this study, the specific knowledge desired was self-initiated innovation. The drawback to basing purposeful selection on self-identified participants in Phase 1 is that I did not obtain data from teachers who abandoned self-initiated innovations after having experienced difficulties.

***Initial contact.***

In spring 2008 I sent e-mails to all 111 teachers of core content areas, kindergarten through grade 12, in one school district in South Dakota, United States of America. I sent these from my University of York e-mail address. Using this e-mail address may have helped legitimatise my role as a student researcher, and I explained this role in the e-mail. In the e-mails I invited the teachers to share with me their innovations to curriculum, or ways that they taught which were not in an adopted textbook. I attached the interview guide to the e-mail. I found that several factors affected the response rate to this initial e-mail. These included the method of sending these invitations, the timing within the school term, and the wording of the e-mails.

My method of sending e-mails was affected primarily by a casual remark from a colleague to the effect that teachers typically ignore all mass e-mail. For this reason I sent the e-mail to small groups of teachers rather than through a mass mailing. The e-mail groups were formed first by school and then alphabetically by last name in groups of four or five. I also e-mailed individual teachers if another person had recommended them. Individual contact using a personal note increased the participation rate. In one case, an interviewed teacher walked me to another teacher’s classroom and I conducted the interview at that unscheduled time.

In regards to timing, I began to send the invitational e-mails in February 2008. These went to K-5 teachers (ages 5-11) the response rate was 18%. This response rate may have been affected by the teachers’ year-long planning for new school configurations within the school district. Middle school teachers (grades 6-8; ages 12-14) responded to their early April e-mails with a 33% rate. I contacted high school teachers (grades 9-12; ages 15-18) in mid-April; their response rate was the lowest, at 11%. Some of these high school teachers apologised, citing that they were too busy with preparation for upcoming student state and national exams or with supervising student activities, many of which are in later April and May. It is possible that high school teachers may have responded differently had I contacted them at a different time of year, for instance in the first week of a new term. Although I contacted middle school teachers at nearly the same time of year, the middle school teachers did not have the same demands on their time. It is also possible that middle school teachers perceive that they have more freedom to innovate and that the response rate was affected by that perception. The overall response rate was 20%. See Table 4 for a comparison of response rate correlated with teachers’ grade levels and months the e-mails were sent.

Table 4

*Phase 1 Teachers’ Response Rate to Initial E-mail Contact*

|  |  |  |  |
| --- | --- | --- | --- |
| Grade level | Month e-mail sent | Number sent | Response rate |
| K-5, ages 5-10 | February | 60 | 18% |
| 6-8, ages 11-14 | Early April | 24 | 33% |
| 9-12 | Mid-April | 27 | 11% |
|  |  | 111 total | 20% overall |

The third aspect of e-mailing which affected response rate had to do with the wording of the e-mail. As I received responses, I realised that the wording may have been off-putting to some teachers. I changed the wording. Due to the general society in South Dakota, which is not self-glorifying, and conversations with teachers who did not participate in the study, I am convinced that some teachers did not volunteer for the study due to not thinking of themselves as particularly clever or innovative, although in reality their lessons and planning do reflect innovative lessons. This study was conducted in an area of the United States’ Midwest which is known for a strong work ethic. In the culture of this area people are expected to do high quality work and to have that high quality work as the quietly accepted norm rather than something which is lauded. Therefore, asking teachers to self-identify as creative, innovative, or inventive is for some asking them to respond against their culture which has taught them to almost self-deprecate. In one instance, I knew prior to the study that a particular teacher used methods not straight from textbooks; however, she did not volunteer for the study. I did not pursue this teacher as a participant, assuming simply that she did not want to participate. During an informal conversation the following summer, she asked me more about the study. Upon hearing my elaboration, she said that although she did not think of herself as particularly creative or innovation, she supposed that she fit into the group of study teachers after all. Were I to conduct a similar study, I would pay particular attention to wording of initial contacts, particularly in a culture with a similar orientation away from self-glorification.

**Phase 1 data collection.**

***Phase 1 participants.***

Twenty percent of the contacted teachers self-selected for the study, resulting in interviews with 11 elementary and 11 secondary teachers (8 middle school and 3 high school). They represented all grade levels and core content areas. I interviewed two teachers together because although they have separate classrooms, they plan and review all lessons together, and they even chat about lessons between classes. Overall, the in-person interviews averaged 35 minutes each and were recorded, either digitally (17) or longhand (5). Teachers chose the location (school or cafe), date, and time of day for the interviews; these, teacher identification, and interview lengths are reported in Table 5. There were 731 minutes (12 hours, 11 minutes) of interviews, excluding time spent on social niceties which were not recorded. Interview dates were affected by several issues, among which were special student activity days, school holidays, state testing, and preparation for testing.

Table 5

*Phase 1 Interviews: Dates and Teachers*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Date | Interview length in minutes | Teacher | Grade level and/or subject | Years taught | Location | Time: before or after school, or on preparation time; or on non-school day |
| 15-Feb | 46 | Sara | K | 9 | cafe | holiday |
| 26-Feb | 54 | Lana | 2 | 32 | school | prep |
| 1-Mar | 35 | Danielle | 4 | 24+8 sub | cafe | Saturday |
| 3-Mar | 59 | Greta | 1 | 17+3 sub | school | after |
| 4-Mar | 29 | Tammy | 3 | 17 | school | prep |
| 4-Mar | 29 | Janine | 4 | 28 | school | before |
| 4-Mar | 40 | Patty | 1 | 29 | school | prep |
| 4-Mar | 35 | Tia | 5 | 24 | school | after |
| 4-Mar | 15 | John | 5 | 7+3 sub | cafe | evening |
| 12-Mar | 28 | Lynette | 5 | 24 | cafe | before |
| 18-Mar | 17 | Lianna | 5 | 8 | school | prep |
| 8-Apr | 32 | Marcie | 7 English | 20 | school | after |
| 8-Apr | 23 | Mary  Stephanie | 6 English | 3  20 | school | after |
| 21-Apr | 44 | Missy | 6 science | 25 | cafe | holiday |
| 25-Apr | 27 | Larry | 8 science | 30 | school | prep |
| 17-Apr | 21 | Steve | 7 maths | 6 | school | prep |
| 23-Apr | 36 | Sam | 6 history | 0 | school | after |
| 24-Apr | 30 | Jenna | maths | 24 | school | after |
| 25-Apr | 19 | Spencer | maths | 42 | school | study hall |
| 24-Apr | 45 | Clark | biology | 17 | school | after |
| 29-Apr | 67 | Jane | 8 English | 32 | school | after |
|  | 731 total  minutes |  |  |  |  |  |

Central to this study was identifying common characteristics in the teachers’ lives. Among the characteristics examined was years of experience. The participants’ experience ranged from a first-year teacher to a 42-year veteran. Figure 1 shows these according to categories of years of teaching experience as identified by Day, et al. ([2007](#_ENREF_55)).

*Figure 1.* Phase 1 Participant Teachers’ Professional Life Phases

In the study there were 17 females and 6 males; the males were 18% of the contacts but formed 26% of the study. Racially, one teacher was half white, half Native American; the others were white. The distribution of ethnicity reflects the ethnicity of the broader geographic area. Participants Missy and Larry (both middle school teachers) were married to each other. I was unaware of any other personal relationships between Phase 1 participants.

***Phase 1 interview guide purpose, design rationale, and development.***

I wanted an interview guide which would be both flexible and targeted on information which might inform the main study questions. I did want to observe Bryman’s ([1988](#_ENREF_27)) advice that “rambling” might be quite important to the teachers. The guide also had to be non-specific to grade level and to subject area; I would be interviewing teachers of students in various levels and subjects and wanted as much consistency in questions as possible in order to uncover the patterns or trends in what teachers said about innovating. Miles and Huberman ([1994](#_ENREF_159)) also recommended interview guides for qualitative research.

Before beginning to interview teachers, I conducted a preliminary literature review on the topics of motivation and of teacher change. The literature review and reflection on my own practice combined to create the questions which guided the interview conversations. In an informal format, I presented to a panel of university education faculty members some of the findings from the literature review, the research questions, and the possible interview guide questions which I had then formed. After working with the feedback from the faculty panel and the feedback from my university supervisor, I developed the final version of the interview guide. Initial e-mail contacts with teachers contained the interview guide as an attachment. Table 6 identifies the interview guide questions, supporting questions and prompts, and the linked key research questions. Items in the first two columns of Table 6 were in the e-mail to the teachers.Table 6

*Phase 1 Interview Guide and Key Research Questions Addressed*

|  |  |  |
| --- | --- | --- |
| Interview guide main question or prompt | Supporting questions and prompts | Key research questions addressed (researcher’s use only) |
| With what curriculum divergence are you involved? | What has changed?  Where are you going? | What are the innovations that teachers make? |
| Why did you start this? | What was your inspiration?  Why did you pick this path? | What are the motivations for teachers who innovate with curriculum?  What benefits do they anticipate would result from initiating innovation? |
| Tell me about yourself. | career/life stage, teaching background (grade levels, location, specialisation, previous innovations), professional development experiences | Is there a common identity characteristic among these teachers?  How do the teachers fit into career/life stages as identified by Huberman (1993) and Day, et al. (2007)? |
| Would you do this again? | What difficulties and successes have there been in this? | How does making curricular innovations affect a teacher?  Are the anticipated benefits realised and sustained?  What are their satisfactions and frustrations?  Does innovating with curriculum enable teachers to sustain their motivation and commitment? |
| What process have you experienced? | What support is needed? (time, money, colleagues, administrators, family, friends, professional development) | What supports do the teachers use whilst initiating innovation?  How do teachers sustain curricular innovations? |
| What else would you like to tell me? | What made the innovation “worth it”? | Possible links to any of the key research questions. |

***Phase 1 procedures used: From data to findings.***

I audio-recorded and took longhand notes in 17 interviews; those 5 which were not audio-recorded were recorded with longhand notes. All were then transcribed, in a few cases by an undergraduate student assistant. Reading through the longhand notes and the transcriptions, I noticed items which appeared significant and began coding with coloured markers. Themes that appeared at this time were remarks such as “I love my job,” the desire to create high-interest lessons and units, the mention of relationships with the pupils as motivating, comments about learning (the teachers’ own children and the pupils), the teachers’ personal boredom in the classroom, and remarks about having fun while teaching. I sorted these remarks by where they fit into the questions as established in the interview guide (see Table 6) and then further created groups for like-kind remarks made by many of the teachers, such as the desire to engage students (elaborated upon later in this chapter). I also created categories for remarks which appeared to be “outliers,” or remarks which were perhaps made by only one or a few teachers but which communicated an issue of significance to the teachers. An example of this sort of remark is that made by five participants regarding the influence of their own children upon their teaching innovations (this will be further explored later in this chapter).

After establishing the significant groups, I reviewed all transcripts and notes for the purpose of grouping the teachers’ comments. I then entered these categories as “nodes” in the computer-assisted qualitative data analysis system NVivo. When established as nodes, I then in NVivo coded the transcripts, occasionally finding that nodes had to be refined or combined as I went through the transcripts formally again. An example of the theme analysis is below in Figure 2, which shows the “tree” of coding nodes I used at this time for why teachers embarked on their own innovations.

*Figure 2.* Tree of coding nodes: “Why.”

These nodes as shown in Figure 2 formed the basis of the analysis documented in Chapter 4. It became obvious to me that the category “better way” was unwieldy and did not serve the purpose of sorting well; when I discovered that, I changed the category to “Motivators,” which were quite different from “Catalysts,” or one-time events which the teachers defined as the starting moment of their innovations.

Following the advice from Bryman ([1988](#_ENREF_27)) that it was unlikely that participants’ transcript reviews would be helpful, I did not send transcripts of the recordings to the participants.

**Methods and Procedures for Data Collection, Phase 2**

**Phase 2 sample selection.**

***Phase 2 limits and initial contact.***

My field work plan for Phase 2 was to share the Storyline curriculum approach with K-12 teachers in a workshop setting and then to ask them to share with me their reactions as they wrote and implemented their planned Storyline curriculum. Storyline is a unique approach to curriculum primarily because learners explore curriculum through the mindset of a fictional person involved in a relevant situation. Because of the personal involvement on the students’ part and the necessary teacher involvement in writing the curriculum, the Storyline narrative approach is quite different from the usual United States textbook presentation of subject areas, and I thought Storyline would likely give informative data about teacher-initiated innovation. I hoped at this time that participants would be five to ten experienced teachers all in one or two grade levels and all in one school district, thus forming as strong an element of consistency as I could contrive.

The school district in which I conducted Phase 1 in 2008 was at that time in the process of changing the configuration of their three elementary schools due to variables in funding, student demographics, and building maintenance. Rather than maintaining three K-5 schools which drew from area neighbourhoods, the district sold the oldest school building and began planning to establish “grade-alike” schools: two K-3 schools in the remaining buildings and one grades 4-5 school in a new building, scheduled to open in autumn 2009.

In November 2007 I met with the principal-designate of the new grades 4-5 school. He considered the development of the new school as an opportunity for developing a magnet or model school. He and the grades 4-5 teachers were at that time actively looking for innovative ideas which would cause the school to develop into such a magnet or model school. Due to the long-term existence of a Storyline magnet school in the state of Oregon, I presented to the principal the idea of the teachers using Storyline as a unifying, innovative approach to teaching which could indeed draw attention. The principal immediately became enthusiastic about the idea but wanted the teachers to “own” it and invited me to present the idea to the teachers in January 2008.

Based on the conversation with the principal, I planned a Phase 2 study which would consist solely of grade 5 teachers, for the sake of consistency in grade level. The plan included developing a four-day workshop for the teachers in teaching and planning with the Storyline approach to curriculum. I had high hopes of a workshop with more than twenty teachers.

However, the plan of working only with grade 5 teachers did not materialise. In April 2008 it became obvious that the teachers as a cohort were not interested in pursuing Storyline; in fact, they did not adopt any particular guiding theme for the new school which would unify them and cause them to be the professional magnet that the principal envisioned. Since the teachers were quite involved in planning the new school, they spent much of their time and energy on items like designing classroom dimensions, choosing storage cupboards, and placing playgrounds. The time required for the school design disinclined them to participate in any new curricular method or theme, since meetings required to establish the new school eroded their planning time.

I continued with the idea of the workshop although I was slightly nervous about attendance. When I was a classroom teacher, two of the “carrots” for me in continuing education were low cost and continuing education credits. I therefore arranged with the local university to offer workshop participants post-graduate credits at a reduced rate.

I decided to advertise the workshop with a flyer intended for teachers’ school mailboxes. I telephoned the secretaries at schools within commuting distance of the workshop location, asking them if I could send a packet of flyers for them to distribute. I sent out a total of 90 advertising flyers to K-5 and foreign language teachers, thinking that these would be the most likely participants. With the exception of school districts in two towns of about 20,000, all schools were in rural towns with only one or two teachers per grade level. One teacher who received the flyer passed it on to two university instructors.

***Phase 2 participants.***

The result of the advertising was a workshop with three grades K-5 teachers and two university instructors of early childhood education. This participant group was quite different from my original plan of all teachers in one grade. When I realised the potential in the variety of participants, I was delighted. I would not have thought to design a study like this had by then become. I had already read that study design disruption is fairly common, if not present, in all studies ([Gherardi & Turner, 2002](#_ENREF_77)), so I thought of the change in design not as crisis-precipitating but as an opportunity for inspiration.

All five teachers who attended the workshop on Storyline curriculum writing in June 2008 self-selected for participation in this part of the study, Phase 2. Three more participants joined the study after the workshop. One participant joined the study after conversations with me regarding the workshop material; he decided to use Storyline in his university course. He shared Storyline with a fourth university instructor who also decided to participate. An eighth participant joined the study when she apprenticed as a student teacher to one of the original workshop attendees. The resulting participants were four university teachers in various career classifications (two instructors, an assistant professor, and a professor), three K-12 teachers with various years of experience (0 to 28 years), and one student teacher.

Seven of the eight Phase 2 participants were females. Two participants were in their late 20s, three in their 40s, and three in their 50s. They ranged in experience from a student teacher to one with nearly 30 years of experience in the classroom. See Figure 3 for a comparison of the teachers’ years of experience.

*Figure 3.* Phase 2 participant teachers’ professional life phases.

Within the group of participants were several previously formed formal relationships and one which began the year of study. Additionally, several of the teachers attend infrequent meetings together, such as annual all-faculty meetings at the school district or university level. Table 7 identifies the formal relationships between participants.

Table 7

*Phase 2 Participants’ Formal Relationships*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Gina** | **Moira** | **Diana** | **Sara** | **Laura** | **Risa** | **Kristina** | **Kurt** |
| Student teacher with Moira, current or previous | x |  | x |  |  |  |  |  |
| Taught in same school district |  | x | x | x |  |  |  |  |
| Taught in College of Family and Consumer Sciences[[7]](#footnote-7), Early Childhood Education |  |  |  | x | x | x |  |  |
| Taught in College of Education, Teacher Education |  |  |  |  |  |  | x | x |
| Attended College of Family and Consumer Sciences, Early Childhood Education |  |  | x |  |  |  |  |  |
| Served on steering committee for college merger |  |  |  |  | x |  |  | x |
| Recent attendance at other university (same) | x |  | x |  |  |  |  |  |
| As of Autumn 2009, taught in the College of Education and Human Sciences, Department of Teacher Education |  |  |  | x | x | x | x | x |

**Phase 2 workshop.**

***Planning the workshop.***

I first learned of the Storyline approach to curriculum through a workshop. That workshop was five days long with two presenters from the United States Storyline organisation, Storyline Design. The presenters were well-rehearsed and had many visual examples as supports.

As a result of my positive experience in the Storyline Design workshop, when I first thought about a South Dakota workshop, I contacted that group and asked about fees for presenters. Storyline Design charged $10,000 for a week-long workshop with two presenters, but I had no funding for the project. Because I did not have the option of hiring them, I decided to develop and lead a four-day workshop on my own.

I then contacted the head of Storyline Design, Jeff Creswell. I gave him my teaching background, told him what I planned, and asked if I could use some of Storyline Design’s resource materials. I had kept these from original workshop I had attended, and many of them were available on their public-access website ([Creswell, 2009](#_ENREF_40)).

From the international Storyline website ([Bell, 2009](#_ENREF_14)) I learned of a Storyline book and accompanying DVD (Letschert, Grabbe-Letschert, & Greven, 2007). Upon my request the Netherlands publisher sent me the book and the DVD. The book contained critical essays, description, and examples. The DVD chronicled a short Storyline workshop which was filmed on location in the Netherlands.

In spring 2008 I travelled to Glasgow, Scotland, to meet with Steve Bell and Sallie Harkness, two of the originators of Storyline in 1967. My purpose in meeting them was partly to get their current perspectives on Storyline but mainly to clarify my purpose of conducting the workshop. I wanted to obtain their “blessing” on my project; I also wanted permission to use some materials previously developed for communicating the key ideas in Storyline planning. The result of the meeting was that Steve and Sallie cheerfully game me permission to use all of these materials with the stipulation that I attribute all materials used to the original sources. They gave me additional resource materials as well, such as several out-of-print books which used Storyline as the structure for teaching the content. Possibly as a result of the effort on my part to clarify my purpose conducting the workshop and my study, I was included as a presenter on the agenda for the annual international Storyline leadership meeting in August 2009.

I synthesised the materials I obtained from these sources (the United States workshops and website, the book and DVD produced in the Netherlands, and print and web materials from Scotland) and combined them with other published materials about Storyline ([Bell, et al., 2008](#_ENREF_17); [Creswell, 1997](#_ENREF_39)). I also added some original material. The resulting booklet represented Storyline history, how Storyline fits into educational theory, and practical applications of Storyline. I had the 50-page booklet printed and spiral bound for participants. I also collected art materials which the participants would use in creating their visuals. These included among other items fabrics, yarn, ribbons, coloured papers, markers, and crayons.

I modelled the workshop format on what I had seen others do, both in person and on the DVD. Storyline originators Steve Bell and Sallie Harkness agreed that the most effective way to communicate Storyline is to involve the learning teacher in a Storyline of their own (personal communication, 25 May, 2008). Sallie suggested that I modify the plan for the Capital Tours Storyline ([Bell & Harkness, 2006](#_ENREF_16)), since this topic has worked well in other workshops.

The general plot of Capital Tours is that a group plans a trip to several capital cities and must determine what to do in each city which would meet the interests of all involved on the trip. After planning, the group pretends they do actually go on the trip and then, like plot in a fictional story, random events happen to the group whilst on the trip. For instance, someone may get lost and need to get directions from someone who does not speak the same language, or someone may need hospitalisation; perhaps the family is asked to stay with a local family for a few days. Through these fictional events, students explore relevant curricular topics. Depending on the grade level and what the teacher plans to emphasise, Capital Tours can result in student learning in mathematics, geography, history, arts, cultures, and literature.

I wanted to create an atmosphere which would encourage creativity and participation. I thought about workshop situations in which I as a teacher-participant felt valued and comfortable. Attention to comfort details is important to teachers in summer workshops, particularly those which occur near the end of the academic year when teachers who may be emotionally drained need to truly enjoy continuing education opportunities. Therefore, I planned a visually attractive and welcoming atmosphere in our workshop location, the library of a local school, and I brought snacks and drinks for midday breaks.

***The workshop week.***

I began the workshop with an introduction the structure of the workshop and an introduction to my research project. I made it known right at the beginning that although I had a strong desire to share Storyline with teachers regardless of a research project, I also had the goal of conducting research on teacher-initiated curriculum change. I told the workshop participants that research project participation was entirely voluntary, and I made available on the first day a formal statement of research participation. All workshop participants decided to also participate in the research project and received an ethical statement.

After the ten-minute introduction I started an introduction to Storyline with reading a picture book with obvious, dramatic plot developments ([Charlip, 1993](#_ENREF_31)), noting that because of the context of story, listeners get involved and develop curiosity. I pointed out the classic story elements of time, place, and plot, and told the participants that during this workshop they would experience a Storyline just as their students might.

To start the Capital Tours Storyline, I asked the participants to as a group establish a family, where each one would be a member of one family and would create a visual of that person. The result was an 8 year old girl, a teenage girl, a mother, and grandparents. The participants created short biographies for the family members; the biographies included three personality characteristics. Then I asked them to create the home this person might live in.

During a break in the workshop, I set an envelope on the table where the “family” was; enclosed was an award letter notifying the family that their community was recognising their outstanding contributions and as a result had won a two-week tour to three European capital cities of their choice. First I asked them to uncover their existing knowledge of European capital city names and locations; they checked their knowledge against a map. Then the participants took on their characters’ roles and wrote their characters’ thoughts about the upcoming trip in a journal. The next group task was then was to research possible vacation sites and activities in order to plan the vacation with each character’s desires and personality in mind.

As we worked through the beginning of the Storyline as students in our classes would, the participants realised that because they created the story characters, they revealed what they knew about people. When the participant in character as the teenage girl said that she loved to dance and wanted to experience the European dance scene, the participant in character as her grandfather said that going to dance events would push his views of acceptable behaviours. The participants reacted with surprise at how involved they became with these fictional people.

In the afternoon of the first day the participants continued to act as students; they made preparations for the trip, including getting passports, planning luggage, and obtaining phrase books. We took some time out from the student role to reflect as teachers on what was happening with our interest and involvement, as well as taking time to write and ask questions. In all of the activities of the workshop, I included time for their questions and encouraged the participants to record their thoughts and to share them with the group.

After a break I introduced plot through removing one of the characters from the display, thereby introducing a plot development of a family member getting separated from the group. As the participants and I talked about plot development, we developed a list of possible incidents which could logically occur to the characters in our story. The participants discussed ways that each incident could be chronicled if Storyline participants were to follow these incidents: participants could tell the story through diaries, comic strips, news reports, or dramas. I made the point that whilst designing and teaching with Storyline, teachers must ask themselves, “What skill practice do these children need from these incidents?” ([Letschert, et al., 2007](#_ENREF_139)).

On the second day of the workshop I shared with the participants more about the history and philosophy of Storyline. I showed them examples of Storylines I had written for my classes in grades K, 2, and 5 (primary 1, 3, and 6). I also showed photographs and plans of others teachers’ Storylines. On the afternoon of the second day the teachers felt they had a fairly good grasp of the concept of Storyline, and they began planning Storylines to use in their own classrooms.

The third day of the workshop was dominated by time for the teachers to write their Storyline curriculum. The atmosphere was collegial and participants sat near each other; at times they spontaneously asked each other about their plans or asked for help figuring out some aspect of a Storyline. Twice on this day the participants formally shared with each other their progress.

Also during the third day we watched selected parts of the DVD which documented Storyline workshops in the Netherlands. The presenter was Steve Bell, one of the Storyline creators, and the workshop took place in the Netherlands with participant teachers from both Europe and Africa ([Letschert, et al., 2007](#_ENREF_139)).

On the fourth day, in addition to finishing the plans and sharing both progress and questions, at the teachers’ request we watched Internet video clips of a Scottish primary 1 teacher interacting with her students during a Storyline ([Learning and Teaching Scotland, 2008](#_ENREF_129)). We watched more DVD clips of Steve Bell ([Letschert, et al., 2007](#_ENREF_139)). After the workshop, one participant wrote, “Wendy’s approach to teaching the class was very relaxed so that we had time to dive in, experience two Storylines ourselves with all of the emotions and creativity that ensued” (Laura). This participant and two others later recommended to their department head that I lead a workshop for other faculty in their department.

At the end of the workshop I thought that there would be only these five participants in the study. However, as stated in the section on Phase 2 participants, two joined the study in August 2008, and another joined in September 2008. These three additional participants were also new to Storyline but used it to structure their curriculum during the study year. I gave each of them had a workshop booklet as a reference tool.

**Phase 2 participants’ Storyline plans.**

Particularly for those readers familiar with Storyline, it may be helpful to know the Storylines which the Phase 2 participants created. For readers unfamiliar with Storyline, providing this information gives further insight into the innovation aspect of the curriculum planning, particularly in the difference in degree from ordinary lecture and discussion plans. Because it was imperative for the participants to not feel that their efforts were scrutinised in implementation of the Storyline approach to curriculum, I did not collect entire Storyline plans. Below is Table 8, which identifies the participant, the name of the Storyline, and an introduction to the Storyline as to characters, setting, and key incidents.

Table 8

*Phase 2 Participants’ Storylines*

|  |  |  |
| --- | --- | --- |
| Participant | Storyline title | Characters, setting, and key incidents |
| Gina | Thanksgiving | Characters: Native Americans  Setting: East coast of North America, 1500s  Key Incident: A ship arrives with light-skinned immigrants |
| Sara | The Enchanted Forest | Characters: Forest dwelling animals  Setting: South Dakota  Key Incidents: Obtaining food; changing seasons and resultant animal adaptations; flood |
| Moira and Diana | King Arthur | Characters: Castle residents  Setting: Medieval English castle  Key Incidents: Preparations for king’s visit to the castle; king’s gold is stolen |
| Risa | Unexpected Diagnosis | Characters: Children ages birth to 8  Setting: Homes and schools, contemporary  Key Incidents: Children are diagnosed with learning disability |
| Lynda | The Classroom | Characters: Teachers; then second grade students, ages 7-8  Setting: South Dakota elementary school classroom  Key Incidents: Designing the classroom; designing the classroom with students in mind |
| Kurt | Create-A-Teen | Characters: High school students, ages 15-16  Setting: South Dakota high school, contemporary  Key Incidents: Interactions with friends, teachers, and parents; events in school such as food fights and sports trips |
| Kristina | Create-A-Teen  (modified Kurt’s plan for her class) | Characters: High school students, ages 14-16  Setting: South Dakota high school, contemporary  Key Incidents: Interactions with friends, teachers, and parents; events in school such as food fights and sports trips |

**Phase 2 data collection.**

I recorded the experiences of teachers in the process of writing their own curriculum during the summer 2008 workshop and later as they implemented these plans in the classrooms in the autumn of 2008. One participant, Moira, also used these plans in her 2008 summer school. She invited me to observe and participate with the children during her class; sensing that she wanted affirmation and support, I spent three hours as a participant observer in her classroom in June and July of 2008.

I anticipated that the classroom time for projects would vary from two to eight weeks, but one teacher’s plan lasted for a year and three others took place over most of a 15-week semester. Teacher interviews (digitally recorded), workshop observations, teachers’ workshop reflection journals, and digital photographs of classroom work formed the data. I took care to clarify my role ([Parlett & Hamilton, 1972](#_ENREF_168)) as a researcher of their experiences rather than as a program evaluator; I was not concerned with how well they adhered to another person’s plan or even their own but rather what they lived as they worked through the Storyline innovation. However, I also do recognise that in research projects, even open-ended interviews create a form of disturbance to the researched topic ([Parlett & Hamilton, 1972](#_ENREF_168)).

In addition to discussion and observation during the 32-hour workshop, I recorded 11½ hours of individual interviews. The interview dates and lengths are provided in Tables 9 and 10 for each teacher.

Table 9

*Phase 2 Individual Interview Schedule*

|  |  |  |
| --- | --- | --- |
| Date | Teacher | Interview length in minutes |
| 14 June | Sara | 9.5 |
| 14 June | Moira | 7.8 |
| 14 June | Gina | 5.4 |
| 14 June | Risa | 8.4 |
| 11 June | Laura | 7.3 |
| 25 June | Moira | 30.0 |
| 7 July | Moira | 32.5 |
| 17 July | Moira | 28.4 |
| 29 Aug | Sara | 24.6 |
| 29 Aug | Kurt | 34.7 |
| 23 Sep | Kristina | 90 |
| 23 Sep | Sara | 20.2 |
| 24 Sep | Laura | 21.7 |
| 25 Sep | Kurt | 31.7 |
| 29 Sep | Risa | 16.9 |
| 23 Oct | Moira & Diana | 47.0 |
| 30 Oct | Kurt | 31.4 |
| 6 Nov | Gina | 26.0 |
| 20 Nov | Laura | 22.5 |
| 20 Nov | Sara | 26.4 |
| 24 Nov | Risa | 13.4 |
| 26 Nov | Kristina | 33.9 |
| 2 Dec | Kristina | 37.2 |
| 9 Dec | Moira & Diana | 60.0 |
| 22 Jan | Gina | 18.9 |
|  | Individual interviews | 685.8 min. = 11 hr., 26 min. |

Table 10

*Average Length of Phase 2 Interviews*

|  |  |  |  |
| --- | --- | --- | --- |
| Teacher | Number of individual interviews | Total interview time in minutes | Average length of interviews in minutes |
| Sara | 4 | 80.7 | 20.2 |
| Risa | 3 | 38.7 | 12.9 |
| Kurt | 3 | 97.8 | 32.6 |
| Gina | 3 | 50.3 | 16.7 |
| Kristina | 3 | 161.1 | 53.7 |
| Moira & Diana | 2 | 107 | 53.5 |
| Moira | 4 | 98.7 | 24.7 |
| Laura | 3 | 51.5 | 17.2 |
|  |  | 685.8 minutes |  |

There were also three group meetings for another 4 hours of interview. The dates, attendees, and lengths of these meetings are shown in Table 11. Together with the interviews shown in Tables 9 and 10, there were 15½ hours of interviews.

Table 11

*Phase 2 Group Interview Schedule*

|  |  |  |
| --- | --- | --- |
| Date | Teacher | Interview length in minutes |
| 17 Oct | All | 101 |
| 20 Feb | Sara, Kurt, Kristina, Moira, Laura | 69 |
| 27 Mar | Sara, Kristina, Gina, Diana, Laura | 59 |
|  | Group meetings (3) | 229 min. = 3 hr., 50 min. |

I audio-recorded nearly all interviews and supplemented the recordings with longhand notes taken during each interview. In the case of one participant, I noticed that my longhand notes constrained her conversation, as she was sure to wait for my notes to catch up to her speech. When I noticed her hesitation, I took only brief notes rather than detailed ones; the conversation then continued more naturally.

***Phase 2 interview guide purpose and design rationale.***

As with Phase 1 interviews, I wanted a flexible but targeted interview guide. I anticipated that the teachers would want to verbally process their students’ work with me, so again I planned to allow for “rambling” ([Bryman, 1988](#_ENREF_27)). Again the guide had to be non-specific for grade level and subject area.

Primarily because of my attention to the participant as a person but also because of the attention to the interview guide design, the Phase 2 interviews had a comfortable flow to them. Some participants (Kurt, Risa, and Gina) appreciated straightforward questions particularly in first interviews; other participants (Kristina especially, Laura, Sara, Diana, and Moira) immediately launched into describing their innovations and both personal and student reactions to related class events. These participants generally answered my questions without being asked the questions. Moira and Diana together reflected not so much on their processes but on reviewing the details of class events and observations of the children. Kurt and Kristina were particularly reflective regarding their own processes; it is possible that as the only ones with doctoral degrees, their research experiences induced them to greater personal reflectivity. Sara was particularly oriented toward analytical observations of her students.

The participants were typically interviewed before they began their projects, during the middle of the implementation, and after the innovation had ceased. Due to the time element and the stage of their Storylines, the interview guide changed slightly. Tables 12, 13, and 14 accordingly reflect the changes in the interview guide; these tables also identify supporting questions and prompts as well as the linked key research questions. There was no intention of focussing on or evaluating the Storyline method itself; rather, the focus was on the teachers’ experience with innovation when self-initiated.

Table 12

*Phase 2 Interview Guide and Key Research Questions Addressed; Used Before Implementation*

|  |  |  |
| --- | --- | --- |
| Interview guide main question or prompt | Supporting questions and prompts | Key research questions addressed (researcher’s use only) |
| Questions on this topic were not asked in this interview. |  | What are the innovations that teachers make? |
| Why did you decide to learn about Storyline?  What are your previous experiences with innovative teaching? | What was your motivation? | What are the motivations for teachers who innovate with curriculum?  What benefits do they anticipate would result from initiating innovation? |
| Tell me about yourself. | career/life stage, teaching background (grade levels, location, specialisation, previous innovations), professional development experiences | Is there a common identity characteristic among these teachers?  How do the teachers fit into career/life stages as identified by Huberman (1993) and Day, et al. (2007)? |
| What are your hopes for using Storyline?  What doubts do you have about using Storyline? |  | How does making curricular innovations affect a teacher?  Are the anticipated benefits realised and sustained?  What are their satisfactions and frustrations?  Does innovating with curriculum enable teachers to sustain their motivation and commitment? |
| Do you anticipate that your Storyline be difficult to use in your school? | What support is needed? (time, money, colleagues, administrators, family, friends, professional development) | What supports do the teachers use whilst initiating innovation?  How do teachers sustain curricular innovations? |
| What else would you like to tell me? |  | Possible links to any of the key research questions. |

Table 13

*Phase 2 Interview Guide and Key Research Questions Addressed; Used During Implementation*

|  |  |  |
| --- | --- | --- |
| Interview guide questions | Supporting questions | Key research questions addressed (researcher’s use only) |
| How is your project going? | What has changed?  Where are you going? | What are the innovations that teachers make? |
| Why did you start this? | What was your inspiration?  Why did you pick this path? | What are the motivations for teachers who innovate with curriculum?  What benefits do they anticipate would result from initiating innovation? |
| In a normal class, what are you most concerned about?  In Storyline classes, what are you most concerned about? |  | Is there a common identity characteristic among these teachers?  How do the teachers fit into career/life stages as identified by Huberman (1993) and Day, et al. (2007)? |
| What successes have you experienced?  What difficulties have there been? How did you solve them?  What doubts have you entertained? | What difficulties and successes have there been in this? | How does making curricular innovations affect a teacher?  Are the anticipated benefits realised and sustained?  What are their satisfactions and frustrations?  Does innovating with curriculum enable teachers to sustain their motivation and commitment? |
| What process have you experienced?  Have you drifted back into traditional teaching? | What support is needed? (time, money, colleagues, administrators, family, friends, professional development) | What supports do the teachers use whilst initiating innovation?  How do teachers sustain curricular innovations? |
| What else would you like to tell me? |  | Possible links to any of the key research questions. |

Table 14

*Phase 2 Interview Guide and Key Research Questions Addressed; Used After Implementation*

|  |  |  |
| --- | --- | --- |
| Interview guide questions | Supporting questions and prompts | Key research questions addressed (researcher’s use only) |
| Has anything changed in your teaching over the past 12 months? | What has changed? | What are the innovations that teachers make? |
| What influences you to change the way you teach?  What was your motivation to change the way you teach? | What inspires you in your teaching? | What are the motivations for teachers who innovate with curriculum?  What benefits do they anticipate would result from initiating innovation? |
| Questions on this topic were not asked in this interview. |  | Is there a common identity characteristic among these teachers?  How do the teachers fit into career/life stages as identified by Huberman (1993) and Day, et al. (2007)? |
| What previous successes led you to be willing to try Storyline?  Do you habitually try new things in your classroom or not? |  | How does making curricular innovations affect a teacher?  Are the anticipated benefits realised and sustained?  What are their satisfactions and frustrations?  Does innovating with curriculum enable teachers to sustain their motivation and commitment? |
| What supports did you need or want during the Storyline?  What will you change for the next time you teach this topic? | What support is needed? | What supports do the teachers use whilst initiating innovation?  How do teachers sustain curricular innovations? |
| What else would you like to tell me? |  | Possible links to any of the key research questions. |

***Phase 2 procedures used: From data to findings.***

I audio-recorded most of the interviews and took longhand notes; those which were not audio-recorded were recorded with longhand notes. I typed all of the recorded interviews as well as the notes taken during the interviews. As when I analysed Phase 1 participant remarks, I first marked notes and transcripts with coloured markers according to themes which appeared to be developing in response to the questions. I compared these themes to those from Phase 1 and where appropriate added new nodes in the project’s qualitative computer-assisted data analysis system NVivo. I then coded the Phase 2 interviews with the existing nodes. At this point, the nodes (themes which had developed) were:

I sorted these remarks by where they fit into the questions as established in the interview guide (see Table 6) and then further created groups for like-kind remarks made by many of the teachers, such as the desire to engage students (elaborated upon later in this chapter). I also created categories for remarks which appeared to be “outliers,” or remarks which were perhaps made by only one or a few teachers but which communicated an issue of significance to the teachers. An example of this sort of remark is that made by five participants regarding the influence of their own children upon their teaching innovations (this will be further explored later in this chapter).

After establishing the significant groups, I reviewed all transcripts and notes for the purpose of grouping the teachers’ comments. I then entered these categories as “nodes” in the computer-assisted qualitative data analysis system NVivo. When established as nodes, I then in NVivo coded the transcripts, occasionally finding that nodes had to be refined or combined as I went through the transcripts formally again. An example of the theme analysis is below, the “tree” of coding nodes I used at this time for what the teachers said about their identities in their personal, situated, and professional lives at various stages of the study – before they began their innovations, during the innovations, and upon completion of the innovation (see Figure 4).

*Figure 4.* Tree of coding nodes: “Identity.”

These nodes as shown in Figure 4 formed the basis of the analysis documented in Chapter 5.

**Methods and Procedures for Data Collection, Phase****3**

**Phase 3 participants.**

Phase 3 was a continuation of Phase 2, and the participants were the same as those in Phase 2. Participants were four university teachers in various career classifications (two instructors, an assistant professor, and a professor), three K-12 teachers with various years of experience (2 to 28 years), and one student teacher.

Seven of the eight Phase 2 participants were females. Two participants were in their late 20s, three in their 40s, and three in their 50s.

**Phase 3 data collection.**

In September 2009 I contacted by e-mail all of the Phase 2 participants, asking for a short interview. Five of the eight participants set appointments with me; three preferred that we communicate via e-mail.

I audio-recorded the in-person interviews and supplemented the recordings with long-hand notes, and I printed the e-mails. Table 15 shows the dates of the interviews and e-mail exchanges.

Table 15

*Phase 3 Interview Schedule*

|  |  |  |
| --- | --- | --- |
| Date | Teacher | Form and/or Length of Communication |
| 9 Sep | Moira | E-mail |
| 9 Sep | Diana | E-mail |
| 11 Sep | Sara | In-person interview, 16.8 minutes |
| 17 Sep | Kristina | In-person interview, 34.8 minutes |
| 17 Sep | Laura | In-person interview, 17.0 minutes |
| 29 Sep | Risa | In-person interview, 24.5 minutes |
| 30 Sep | Kurt | In-person interview, 23.3 minutes |
| 2 Oct | Gina | E-mail |

***Phase 3 interview guide purpose and design rationale.***

The purpose of Phase 3 was to establish three items: the sustainability of innovations, the extent to which anticipated benefits were realised, and the stability of the three parts of their identity (personal, situated, and professional) during the year of innovation. As with previous interviews, I wanted a flexible but targeted interview guide. Again the guide had to be non-specific for grade level and subject area. Table 16 identifies supporting questions and prompts as well as the linked key research questions.

Table 16

*Phase 3 Interview Guide and Key Research Questions Addressed*

|  |  |  |
| --- | --- | --- |
| Interview guide questions | Supporting questions and prompts | Key research questions addressed (researcher’s use only) |
|  |  | What are the innovations that teachers make? |
| What benefits did you anticipate would result from initiating innovation with Storyline? |  | What are the motivations for teachers who innovate with curriculum?  What benefits do they anticipate would result from initiating innovation? |
| During the implementation year, how were you affected by teacher identity factors? (professional, situated, and personal) | Any factors dominate?  Any factors unstable?  Any tensions between them? | Is there a common identity characteristic among these teachers?  How do the teachers fit into career/life stages as identified by Huberman (1993) and Day, et al. (2007)? |
| Did you realise the benefits you had hoped would result? Or did something different happen?  If there was a benefit, has that sustained through to this year? |  | How does making curricular innovations affect a teacher?  Are the anticipated benefits realised and sustained?  What are their satisfactions and frustrations?  Does innovating with curriculum enable teachers to sustain their motivation and commitment? |
| Are you continuing with your Storyline? Why or why not?  If you have made changes to the initial plan, what did you change and why? |  | What supports do the teachers use whilst initiating innovation?  How do teachers sustain curricular innovations? |
| What else would you like to tell me? |  | Possible links to any of the key research questions. |

***Phase 3 procedures used: From data to findings.***

I audio-recorded and took longhand notes in most of the interviews. Again I typed all of the recorded interviews as well as the notes taken during the interviews. As when I analysed Phases 1 and 2 participant remarks, I used coloured markers to code notes and transcripts according to themes which appeared to be developing. I added new nodes to the NVivo coding, and I then coded the Phase 3 interviews with the existing nodes. I also returned to the Phase 1 participants and examined their remarks in light of the general topic of sustaining their innovations. Again the interview guide (Table 15) helped me while developing the nodes, providing structure, but sorting the teachers’ remarks into those which appeared significant to them was of paramount importance. The nodes which developed for Phase 3 are shown in Figure 5.

*Figure 5.* Tree of coding nodes: “Sustaining change.”

**Reliability and Validity: Trustworthiness of Data**

One of the most important questions to ask of research is of course, “Is the data credible?” Research always carries with it a concern with internal validity. Are the observations and measurements authentic? Do they represent someone’s reality? Particularly in Phases 2 and 3, which form the bulk of the data, the participants were purposefully selected as those having direct experience with the particular phenomenon of innovating with Storyline. Purposeful selection, Tillman ([2009](#_ENREF_207)) claimed, directly addresses concerns with credibility. Those interviewed lived the experience. Because of my concerns regarding credibility, I recorded the participants, most of them digitally, and transcribed them. I coded the interviews with the NVivo researcher’s tool. Coding transcripts gave me a measure of assurance that I was quantifying responses as much as possible, rather than relying on what I recalled or thought the participants had said.

The variety of teachers represented in this study and the reliance on their voices allows their views to legitimately represent many teachers. Although the number of participants in the study is small, they were teachers in different life stages and situations. Schools can indeed vary in their circumstances, such as location or the socio-economic status of the area; but teaching and student learning follow common lines and innovators in schools face similar difficulties ([Parlett & Hamilton, 1972](#_ENREF_168)). I address some of these external validity issues in the discussion chapter.

It is possible that there were some effects simply from the possibility that Phase 2 and 3 participants viewed me as an “expert” in Storyline teaching, due to my having led the workshop, having used Storyline in my own classroom, and having participated in the international leadership of the Storyline method. During interviews, it was not unusual for participants to present to me conundrums or problems they were working through; they also shared opinions in a manner which asked for my input as well. In these situations, I attempted to take the collegial role of a co-constructor of solutions, rather than the expert role of authority. My role as expert could have been diminished if another person had conducted the original workshop. However, in order for the research to be conducted with a maximum of researcher understanding, the interviewing researcher would have needed first-hand experience with Storyline. Thus the interviewer-expert role would again exist. Because of the possibility that I would influence teachers’ responses to my questions, I attempted careful attention to interpersonal details such as flow of conversation, responses to participants’ questions, tone, body language, and opportunities for affirmations.

I believe that this study is replicable and that the results would be similar because of the similarity of teachers’ tasks, regardless of learner age, teacher age, and culture. The study showed similarities between teachers of students from ages five through adult. The study might have slightly different results if it took place in a location which is heavily prescriptive and in which teachers are under threat of recrimination if they deviate from textbook-provided curriculum.

Because teachers self-selected for the study, some who volunteered to participate, particularly those in Phase 1, may not have particularly creative, innovative ideas for subject presentation according to an outside observer. However, because the point of the study was to investigate teachers’ views rather than observers’ views, self-selection was entirely valid. The main research question, “What explains teacher-initiated curriculum innovation?” expands into, “What benefits do teachers anticipate will result from initiating innovation, and are these benefits realised and sustained?” The choice and degree of innovation in these questions belongs to each teacher.

**Ethics**

**Researcher’s awareness of ethical issues.**

In 2006, during the research planning for my master’s thesis, I initially went through my university’s Institutional Review Board for ethics in research, and I completed the training in researchers’ ethical issues regarding human subjects through the United States’ National Institutes of Health program. That training is no longer available. In preparation for this study, although it was not required by any educational institution connected with this study, in 2008 I refreshed my knowledge of these issues through the Collaborative Institutional Training Initiative (CITI), which provides ethics training for researchers.

Because of this knowledge of ethical issues, I was aware potential ethical issues in two areas: one, the invasiveness of the researcher, and two, the possibility of the teachers’ innovations involving unethical or culturally insensitive elements. As a result, while asking questions of teachers in semi-structured interviews, I was careful to not communicate judgments when they told of events in their classes or opinions of others involved in the schools. In Phase 2, as teachers were planning Storylines and sharing those plans with me, again I was careful to not communicate judgment of their work. However, I was also aware that in situations like these, where teachers are working outside of tested curriculum, there is a need for teachers to attend to questions of ethics and cultural sensitivity, which presumably have been controlled for in tested curricular materials. During the workshop (Phase 2) we did discuss the possibility of these issues; since we discussed each others’ plans we had the opportunity to give feedback in these areas as well as in simply design and ideas. None of the teachers produced plans which were ethically or culturally insensitive to the students. The Phases 2-3 teachers did find that students brought up issues that sometimes were awkward to reconcile with the desire for student contribution; in only one case did the teacher intervene and ask the students to tone down their contribution due to cultural sensitivity issues. This occurred in Kurt’s class, where a pair of students created the Jewish character “Jesus,” whose father was a carpenter. Excerpts from this interview and how Kurt handled the situation are in Chapter Five (page 195). Kristina experienced an awkwardness rather than an ethical issue of paired students not enjoying working together; while it was not exactly an ethical issue, she chose to regroup students so that both could achieve without the awkwardness of working together in the situation she created.

It was of course a possibility that any of the participants might reveal to me unethical or culturally insensitive situations; I was prepared to address those issues through appropriate avenues should the need arise. This of course would first involve clarifying the situation with the teacher and then if necessary confronting him or her and if truly necessary, continuing on to the teacher’s supervisor. I did not observe or hear of any situation which made me question the teacher’s judgment.

**Researcher’s relationships with Phase 1 participants.**

My position as a researcher who had taught in K-12 classrooms probably helped me create a comfortable atmosphere for the Phase 1 teachers when interviewing them. I had been on their side of the desk; I had been accountable for teaching “to the standards” and I had instinctive understanding of their daily lives – students, parents, planning, administration, management, colleagues, and testing. Also fairly uniquely, with only three exceptions I had taught children in the same grades as the teacher-interviewees; this gave me the insight into knowing what ordinary work levels are for each of these areas. When a teacher showed me what her students were accomplishing in first grade maths, for instance, I knew that was far above the norm for the grade level and could react appropriately.

Also to my advantage as a researcher during Phase 1, at the same time as having intimate insight into the teacher’s life, I was only vaguely familiar with the participant schools; I had not taught in them. My previous participation in these schools was limited to a few days of substitute teaching in a few K-5 classrooms and several days of observing student teachers in the elementary specialist (art, music, and physical education) and secondary subject-area classrooms. My limited previous contact with the participants allowed for freedom. As an “insider” teacher I knew their lives; as a school “outsider” the teachers and I had limited previous relationships which in another situation could influence participation. For instance, I had no role either in the past or present as an evaluator of the teachers, so there was no threat involved in speaking with me. However, I also understand that if I had developed long-term relationships with the teachers in the study area, I might have had more participants volunteer simply due to acquaintanceships.

I had previous acquaintanceships with 6 of the 22 (27%) Phase 1 teachers. Of those who were previously known to me, three were former single-subject teachers of one of my children; our previous contact was limited to two parent-teacher conferences each. I had common church attendance with two teachers and common secondary school sport attendance with one other, but I was not otherwise socially involved with them.

Some of the Phase 1 participants knew previous to the study that I had taught their grade level or subject area, but in most cases teachers did not know this before our conversation. Unless it came up in the discussion, I did not offer it. Their knowledge of my experience in their area could have influenced the conversation one way or another; teachers could view my experience as either a validation of their expertise or as a de-valuation of their area expertise. Obviously, not knowing of my experience in their area also could have influenced the conversation, as once again, “any form of data collection creates disturbance” ([Parlett & Hamilton, 1972, p. 25](#_ENREF_168)). There is a perceived increase in negative media on teachers and schools in general, and I thought it important to communicate to the participants, as much as I could, a positive valuation of the teachers’ expertise in the classroom.

**Researcher’s relationships with Phases 2 and 3 participants.**

Prior to the workshop which introduced Storyline to Phase 2 participants, my relationship with the participants varied. Several months previous to the workshop I had substitute taught for a few days in a classroom next to participant Moira’s classroom. Sara had participated in Phase 1. I was previously unacquainted with the remaining three workshop participants, Laura, Risa, and Gina. A sixth study participant, Diana, joined the study after the workshop; I did not know her previous to the study.

I was better acquainted with the remaining two study participants, Kurt and Kristina. They were both university faculty members, and for the 2005-2007 school years I worked part-time in their college as a graduate assistant. Throughout these years we participated in the same education book study group, and I also occasionally attended faculty meetings with them.

As the study developed, my professional relationships with the participants changed somewhat. Beginning in autumn 2008, the first year of innovation, I worked as a part time instructor in the same department as Kurt and Kristina; I continued to attend faculty meetings with them. Also in the 2008-2009 school year, two university colleges began to merge and I served briefly on a merging committee with the Laura and Risa, two other participants who also were university faculty members.

**Conclusion**

This study was an attempt to illuminate one part of the teacher’s life: what motivates teachers to initiate innovations? The term “what works” in education is currently popular in political rhetoric about education and appears to demand positivistic-style research evidence. However, answers to questions in educational research may depend on not only the people involved and their contexts but also on understanding how processes work and how people adjust those processes to changing conditions ([Johnson, 2009](#_ENREF_109)). Because the investigation relied on interviews and the researcher’s role was one of interpretation, the research project chronicled in this thesis reveals what the participants thought about the processes and adjustments that occurred during their innovations.

Two perspectives supplied data for the study. These perspectives were from teachers working with previously initiated innovations and teachers who initiated innovations during the course of the study. The teachers’ range of experience, levels taught, and subject area specialties broadened the study to one which represented many teachers. The perspectives provided insights into the motivations for innovating, what teachers discover while innovating, and how teachers sustain those innovations.

**Chapter Four**

**Why Get Involved in Educational Innovation?**

**Introduction**

This study examines teachers’ answers to the research questions on why teachers initiate innovations (this chapter), the relationship of self-initiated innovation to teacher identity (Chapter Five), and issues involved in sustaining self-initiated innovation (Chapter Six). The key research questions relevant to this chapter were, “What are the motivations for teachers who innovate with curriculum?” and “What benefits do teachers anticipate will result from initiating innovation?” Related issues include identifying the actual nature of the innovation itself and how the teachers work through initiating innovation. In this study, two groups of teachers identified their motivations for self-initiating innovation. These were Phase 1 teachers and Phases 2-3 teachers; both are represented in this chapter though they are not often separated out by these categories in this chapter.

Because Phase 1 teachers were those who had already initiated curriculum innovation, the motivation and benefit questions were related to why they had initiated innovations in the past. Some Phase 1 teachers cited innovations that they initially introduced several years in the past; other teachers talked of more recent innovations. Because Phase 1 teachers self-selected for the study, there is variation in terms of degree of innovation.

Phases 2-3 teachers were those who initiated curricular innovations during the course of this study; compared to Phase 1 teachers, there was more consistency in degree and similarity of the innovations. For Phases 2-3 participants, the questions regarding motivation and hoped-for benefits related only to innovations taking place during the study. One teacher, Sara, contributed to both Phase 1 and Phases 2-3, but as these phases were distinct in time and topic, data from Sara’s contributions does not conflict with itself.

An analysis of what the teachers said about their motivations to initiate innovation revealed that their remarks fit into two categories by which this chapter is organised: catalysts and motivations.

* Catalysts, or events which precipitated innovating, were mentioned by all the teachers. Two-thirds mentioned a secondary catalyst as well. These catalysts were most commonly formal learning experiences and the realisation of personal boredom.
* Motivations to innovate were more general reasons which supported the teachers’ decisions to teach outside of ordinary textbook-guided presentations. Motivations centred on the desire to teach better and on the desire to add to their own enjoyment of their work.

**What are the Innovations that Teachers Self-Initiate?**

Before beginning a discussion of why teachers self-initiate innovations, it is helpful to the reader to provide an orientation to the kinds of innovations that the teachers in this study made. The participant teachers can be grouped in several ways, but the most obvious groups are the eight teachers in Phases 2-3 of the study and the remaining 22 teachers in Phase 1. See Figure 6.

*Figure 6.* Primary method of innovation.

The eight teachers participating in Phases 2-3 of the study wrote Storylines to use in their classrooms. The common context of Storyline was chosen so that the teachers would be equally unfamiliar with the innovation. As detailed in Chapter One, Context, Storylines require the students to create characters who participate in a setting. In that setting the characters solve problems and investigate situations which logically arise from those characters in those settings. In this study, characters and settings ranged from forest animals and Native American Indian villagers (kindergarten, primary 1) and Arthurian castle residents (fourth grade, primary 5) to children and teenagers in home and school settings (university classes). Teaching with a Storyline generally results in the teacher having a degree of uncertainty even after his or her class plans are made, since some details cannot all be planned in advance. For this reason, some teachers decide they do not have all the competencies required of them in designing curriculum with Storyline ([Greven & Kuiper, 2007](#_ENREF_84)). Participant Kurt expressed the challenge he thought Storyline teaching would be for both himself and his university students.

What they’re going to have to do with Storyline, is they’re going to have to make decisions. And they’re going to have to be, themselves be, involved in a creative activity where they themselves decide how the concepts should be applied. . . . I really don’t know how it’s going to play out (Kurt20Aug).

The 22 teachers participating in Phase 1 of the study had already implemented innovations in their classes before the study began. These were all teachers of academic subjects in grades kindergarten through twelve. Some of these teachers innovated in multiple subjects. For the Phase 1 teachers, it was most common to innovate through using inquiry-based methods, with 12 of the 22 (55%) Phase 1 teachers using inquiry-based methods for teaching in mathematics, science, and social studies classes. All grade levels are represented in these 12 teachers. Of these 12 teachers, 5 were using Cognitively Guided Instruction (Fennema, 1992) as a base for teaching mathematics, but some of them recognised that this method of teaching mathematics affected their teaching in other subject areas as well. Mention of this is included here because there is a similarity to Storyline in the teacher not planning every detail of the lesson. This idea will be revisited in Chapter Five, Identity. Below are representative remarks from mathematics teachers who noticed that they teach differently overall due to their training in Cognitively Guided Instruction.

CGI (Cognitive Guided Instruction) training was the big influence on me. Don’t tell the children; let them discover it for themselves. “What did you do? Why? Explain? Tell about your strategy.” . . . I do not teach the same in here anymore (Greta).

I have changed my way of thinking (Tammy).

Four of the Phase 1 teachers used guided reading groups. Although some teachers consider guided reading quite similar to large group reading instruction, for the Phase 1 teachers who mentioned innovating with guided reading, this was outside of their adopted textbook and they considered it unusual. It is possible that because of the influence of Cognitively Guided Instruction training, 2 of the 4 teachers who mentioned using guided reading modified classic guided reading to incorporate those teaching strategies.

Three of the Phase 1 teachers integrated curriculum across subject areas. Two used technology extensively in their innovations, and one used songs and rhymes in her teaching.

In combination with the areas Figure 3 notes as the teachers’ primary area of innovation, 9 teachers directly mentioned either not using the textbook at all or using textbook topics as guides in teaching whilst developing materials for classroom use on their own. The following excerpts provide the range of variation in using the textbook.

I take the themes from the basal reader and then try to give the students a variety of readings (Lynette).

I like to use the textbook as a, you know, as a supplementary source (Larry).

I just hated the way the next chapter was arranged. So I made my own (Jenna).

I have completely thrown out my math series (Janine).

Janine, for instance, does not use the text at all; Jenna uses the text as written except for the last chapter. Lynette analyses what the reading textbook’s themes are but finds selections on these themes which she deems “better;” likewise Larry uses textbook material but not as a daily source of information for the students.

**Catalysts and Inspiration to Change**

Just as catalysts begin chemical reactions, catalysts provided the participant teachers with distinct events which resulted in changing their teaching practices. The primary event which catalysed self-initiated change in practice was most often a formal learning experience such as a class or workshop; this was cited by 19 of the 30 teachers (61%). Teachers also cited as a primary catalyst the factors of the realisation of personal boredom (6 teachers; 19%), the influence of another teacher (3 teachers, 10%), an external change which affected the teacher (2 teachers; 6%), a grant opportunity (1 teacher, 3%), and the availability of a new resource (1 teacher, 3%)[[8]](#footnote-8) (see Figure 7). Each of these will be examined in this chapter, along with catalysts which teachers cited as of secondary influence.

*Figure 7.* Primary catalysts for self-initiating innovations.

Twenty of the 30 teachers in the study (67%) also cited secondary catalysts which were influential in their deciding to initiate classroom innovations. Most commonly, secondary catalysts were the factors of personal boredom (6 teachers, 19%) and the influence of their own children (5 teachers, 17%), either through observation of or conversation with their own children. External change, which was the primary influence for 2 teachers (7%), was not mentioned as a secondary catalyst by any of the teachers (see Figure 8).

*Figure 8.* Secondary catalysts for self-initiating innovations.

Secondary catalysts will be examined in this chapter in conjunction with the primary catalysts, in order of combined catalysing influence, as in Figure 9.

*Figure 9.* Combined primary and secondary catalysts for innovation.

Teachers did not cite as catalysts for their innovations the desire to teach more effectively, as was the case in a few studies and self-reports ([airball, 2010, January 5](#_ENREF_3); [Ritchie & Rigano, 2002](#_ENREF_177); [Schulz, 1994](#_ENREF_187)). Likewise, none of the teachers mentioned a perceived need to effect social change as a catalyst for altering their curriculum or their approach to teaching, which is different from teachers who have been recognised in the literature ([Jessness, 2002, July](#_ENREF_108); [Marquis & Sachs, 1990](#_ENREF_147); [Nieto, 2005](#_ENREF_165); [Wolk & Rodman, 1994](#_ENREF_230)). The culture of the study location may play a part here; although the culture as a whole values caring for others and benefit fund-raising, the culture does not see social justice issues as something needing local solutions. The monocultural nature of the area may contribute to this.

**Formal learning experiences.**

Nineteen of the 30 teachers (63%) in the study cited a formal learning experience on their part as a catalyst to initiate innovative teaching. With the exception of 2 teachers who cited their pre-service training as the basis for current innovations, these formal learning opportunities were classes and workshops which they chose to attend rather than being required to attend.

***Classes with credits.***

Five teachers were participating in a three-year program sponsored by the state department of education. This program is based on Cognitively Guided Instruction (Fennema, 1992) and has a particular focus on mathematics education. Four of these five mentioned that they were asked by their building principal if they would be interested in participating in this optional continuing education class. Among these five teachers, only John mentioned the continuing education credits associated with the three-year commitment. Although the class itself was the reason why he incorporated the change, the offered credits were an added benefit for taking the class and initiating an innovation.

Like John, Gina also mentioned university credits. She was forthright about stating that she needed these for license renewal, and that need resulted in her taking the four day Storyline workshop associated with Phases 2-3 of this study. However, Gina did not need to incorporate Storyline into her curriculum in order to earn the credits. The class itself was her primary catalyst for initiating innovation, just as it was for the other four workshop attendees. The remaining four Storyline workshop attendees were not motivated to attend because of the offered credits.

***Conferences or workshops.***

Workshops or conference sessions inspired 8 teachers (27%) to initiate innovations. Of these, 3 mentioned that the conferences were in their subject area and held at the national level. These were the National Council of Teachers of Mathematics (Spencer, Jenna) and the National Science Teachers’ Association (Missy).

Spencer liked the idea of incorporating practical problem solving which he saw presented at a national maths conference. He then searched other resources which helped him incorporate this idea in the classroom.

[The problems I use which require thinking skills] mostly all come from the National Council of Mathematics. I have a whole set. Either that or I’ll find them on ACT tests [university entrance exam], and I’ll think they are very valuable, or I’ll find them on SAT tests [university entrance exam] (Spencer).

Jane took an idea she found at a workshop and expanded on it. Below is her description of her decision to dress in a costume each time she introduces a different part of speech to her middle school students.

Two or three of us went to a workshop years ago, and it was a humour workshop, and it was, you know, don’t be afraid to have fun and laugh and show the kids that you can have a good time. . . . And so I thought, “I guess I can dress up like a clown,” and two of us bought those silly glasses where the eyebrows go up and down, and the nose. And so I wore those and I bought clown shoes and I made an umbrella that has the figures of alliteration and hyperbole hanging from the umbrella. And that’s how I introduced “Language is Fun” (Jane).

***Teacher education program.***

Two teachers cited influences in their teacher education programs as reasons why they introduced innovations to their teaching, rather than using textbook resources. The teachers who cited this reason, Lianna and Steve, were licensed within the previous eight years and had fewer years of classroom experience than 23 of the other 28 teachers in the study. Steve’s mathematics preparation program proposed teaching mathematics vocabulary; for Lianna, the influence was in reading and in science.

At the time of the study, Lianna was in her second year of teaching in a school where the teaching norm was using textbooks and their supporting resources. She had previously taught in another part of the state.

My inspiration for teaching with novels and with inquiry-based science is that I thought that was the only way to teach. I was a 2000 graduate; we [students in the teacher education program] were shown the basal readers and looked at them for about 20 minutes, and then we were told what we could actually do instead (Lianna).

**Personal boredom.**

The catalysing factor of boredom which was documented as influential with one Canadian teacher ([Connelly & Clandinin, 1988](#_ENREF_36)) and one Australian teacher ([Ritchie & Rigano, 2002](#_ENREF_177)) was cited frequently by the teachers in this study. Of the 30 participant teachers, 12 (40%) cited personal boredom as either their first or second most influential catalysing factor in deciding to initiate an innovation. Another 5 mentioned boredom without connecting it to a catalytic event; this will be revisited in the section “Motivations to Self-Initiate Innovations.” The research questions did not include a direct inquiry into the teachers’ state of boredom or interest in their work; the question which prompted this answer was simply, “Why did you start this innovation?”

One possible analysis of the boredom remarks would be to correlate them with the teacher’s professional life phase. Teachers cited personal boredom in response to the open ended-question, “Why did you start this innovation?” Because the question was open-ended, it is possible that boredom also had a role in catalysing or motivating an innovation for those who did not specifically mention it. Tracking when in the teacher’s professional life he or she first innovated due to boredom is possible with some of the teachers in this study, because one of the supporting research questions was, “When did you begin this innovation?” Five of the teachers responded that innovating due to a catalysing boredom factor occurred during their first three years of teaching. Below are representative remarks from teachers who realised their own boredom with textbook materials during the first three years of teaching. The first examples are from a student teacher (Diana) and a first year teacher (Sam); the third is from a teacher in her 25th year who reflected on the experience in her second year of teaching (Tia).

If you had to do that *all year long* [speaker’s emphasis], you know, do the vocab, do the worksheet, do the story, I mean, how boring is that for you as a teacher? (Diana).

If I was giving out a reading every day, I would be bored to death. . . . It was more for me [than the students] at the beginning, because, because I was new in the career, but I didn’t like what was happening already, it was just, it was way too boring (Sam).

It took every noon hour for a year and part of a summer [to write our curriculum]. And we were willing to do that, because we were just bored with what we were doing. . . . We couldn’t stand it anymore (Tia).

Teachers noted that their personal boredom with textbook materials probably reflected what their students felt about the textbooks, and that served as their catalyst for change.

[Regarding the basal reader] I thought, “I’m bored with that!” So what would I expect out of my students? (Lianna).

If you were just doing it as a job, just straight out of the book, it would be pretty dull, for both you and the students (Marcie).

Stephanie: Why did we start to leave the textbook?

Mary: It was boring.

Stephanie: Boring sentences of the same kind, over and over again. . . . When I’m looking to see, “How many more sentences are in this section?”, imagine what they’re [the students are] doing (MaryandStephanie).

The boredom topic was not one prompted by the interview guide or by questions during the interviews. These three comments showed that the teachers themselves were bored, but that they also were quite aware of the boredom issue with their own students. These teachers showed an awareness of and caring about effective pedagogy and knew that an interest factor contributed to good pedagogy. The teachers’ awareness of the boredom factor, both the students’ and their own, is not a focus of researchers’ attention, though Christine Gilbert of Ofsted recently cited boring teaching as contributing to lack of student achievement ([Curtis, 2009](#_ENREF_45)).

**The influence of another teacher.**

Teachers sometimes find inspiration for innovations from other teachers, which can be an experienced colleague inspiring another to try a new approach ([Connelly & Clandinin, 1988](#_ENREF_36)). In this study, 5 teachers (17%) noted another teacher’s influence as either a primary or secondary catalyst. However, the influence of another teacher was not one colleague giving an example to another but instead conversations between colleagues who inspired one another collaboratively (Steve, Jane, Tia), another teacher’s lack of knowledge (Danielle), and a remembered teaching example from past experience (Larry).

Jane cited conversation with an art teacher as the basis for using crayons in grammar class; Steve cited conversation with a reading teacher as his secondary catalyst for teaching vocabulary skills in his algebra class. Tia noted that her innovations grew out of a brainstorming style of conversation with another teacher, rather than the catalyst being a conversation which drew on another’s expertise.

My co-worker, we were departmentalising for science and social studies, and we got along really well, we had the same philosophy about a lot of things, and we said, “What can we do to spice this up?” (Tia).

Danielle was influenced by a colleague’s lack of subject area knowledge. Danielle was one of four fourth grade (primary 5) teachers. Fourth grade is generally a state history year in the United States, but one of the teachers in Danielle’s team was new to the state and did not know South Dakota history. In their conversation about this issue, Danielle and the fourth grade team decided to learn more together about this subject area. They wrote a grant which enabled them to travel around the state gathering materials and resources like soil samples, interviews, and photographs which would enhance their teaching. These materials and resources formed the basis on their innovation.

It’s been probably the best thing that happened to my teaching . . . when they [the school district] first gave us Wednesday afternoon to plan. . . . What we basically did was threw out the textbook and looked at our curriculum guide. Instead of teaching rocks and minerals, we taught rocks and minerals of South Dakota (Danielle).

Although Larry was in his 31st year of teaching, he still recalled the influence of his own high school science teacher on his current teaching. In this case the influence was not a conversation with another teacher or the example of a current colleague but the unintentional example of another’s teaching. This experience was an influence on his style of teaching even in his first year.

I think that part of that [reason to use investigative methods] was . . . a really good science teacher in high school. And she never used a textbook. . . . We were doing a lot of laboratory kinds of things, a lot of investigative things, and she, she always seemed to ask the right question for us to, to be more interested in what we were doing (Larry).

**Own child’s learning experiences.**

Five of the 30 teachers in the study (17%) recognised that their own children’s learning experiences had a profound effect on their own teaching. Three of these teachers who felt the effects of their own children’s learning acknowledged their children’s learning difficulties and how their current teaching would have helped with those problems. Two of these three teachers, Greta and Tammy, were innovating in mathematics due to their class in Cognitively Guided Instruction ([Fennema, 1992](#_ENREF_69)), which endeavours to have children work out their own mathematical reasoning rather than be taught algorithms to apply to textbook-provided problem sets.

I felt confident in my teaching, but I evolved as a teacher because of having my own kids. Two out of my four kids are dyslexic. My seventh-grader is a very visual thinker, very right brained. So the main challenging question for me is, “How do I meet the needs of individuals?” (Greta).

My children always needed extra help. Neither one of my children experienced the way math is taught today (Tammy).

Jane cited conversations with her two children as reasons for changing her teaching to better help students learn grammar. She recalled remarks from both of her sons as influencing her teaching.

I asked my kids, “What do you remember about seventh grade English?” and our older son . . . said, “I remember that ‘not’ is never a verb.” And I said, “Why do you remember that?” And he said, “Because Miss, Mrs. Taylor, does a dance.” So she is the one who taught me the “Not is Never a Verb” dance (Jane).

I think that as a seventh grader our younger son was an organisational nightmare. Is that a good way of putting it? And so I think I teach very, very structured because of that (Jane).

Another two teachers were inspired to change their teaching because of their daughters’ high ability compared to their peers and the problems associated with that. In Jenna’s case, her daughter suggested that changes to her teaching could accommodate able but shy students. Sara’s daughter inspired her to think critically about creating learning goals for the highly able students.

My daughter, she was very smart, but very self-conscious about it, and she would never raise her hand and answer a question. . . . I started changing the way I called on kids, because of her (Jenna).

I suppose that part of my inspiration for this program was my daughter Helen, who when at our first kindergarten conference the teacher showed us her progress report and said that she’d met all the year’s requirements. And the teacher had no plan for her for the rest of the year (Sara).

**Externally imposed change.**

Externally imposed change inspired 2 teachers in this study (7%) to self-initiate an innovation. University teachers Kurt and Kristina experienced this when their former integrated curriculum for pre-service teachers was changed to stand-alone courses with distinct titles, content, and credits. The change in program design resulted in both Kurt and Kristina teaching the new course in educational psychology, but the catalyst for innovating with Storyline in their teaching was different.

In Kurt’s case, he had a summer to plan the course. The specific catalysing factor inspiring his choice to initiate a teaching innovation in this course was the meeting format: each of his three classes met once a week for three hours. If the class had met on a more traditional one hour, three times a week schedule, he may not have considered using Storyline to support his class. Just before the class began, he said,

I was sort of apprehensive about teaching one three hour block once a week, and I think this [Storyline] will work out well (Kurt 29 August).

Kristina, however, had a different catalysing factor: she was asked to teach a section of the new educational psychology stand-alone course with little time to prepare before the new semester began. She asked Kurt about his plans for his sections of the course. He offered to share his organisation and the Storyline innovation that he incorporated into the plan. Her class was scheduled to meet three times a week for an hour; although this format was more traditional than Kurt’s, she decided that she could easily adapt Kurt’s Storyline plans to her own section. Reflecting on this experience, she used the word “survival;” this echoes the experience of Alice Bell ([A. Bell, 2007](#_ENREF_12)), who innovated with Storyline when confronted with reduced time to teach art history. Kristina said:

I guess [I started this innovation] to take the risk of doing something different, but it also was a little bit of the survival thing, too, honestly, because, because I like ed psych, and I wanted to be able to teach ed psych, and so, but I also, I didn't have the time to design it myself; I liked the way it had been before, and I was mad that it was different, but I thought that if, rather than if, I’m not the kind of person that stays mad and digs my heels in. I thought, “Okay, this is the new way. And this is, it connects with methodologies that I like, so it’s going to be kind of fun. And Kurt’s fine to work with.” And since he was willing to share­, and I just thought a lot of his [plans], in terms of the survival, it was there for me (Kristina, Phase 3).

Kristina’s situation demonstrates that at times teacher-initiated innovation can be the result of a stressor, such as little preparation time, combined with the source of a conversation with a colleague. Kristina clearly remarks that “I liked the way it had been before, and I was mad that it was different;” she had been in this department for about two decades and that she preferred the previous subject-integrated course design, which she had helped create. Due to the needs of transfer students and of the national education accreditation body NCATE (National Council for Accreditation of Teacher Education), the integrated course was replaced at this time by stand-along courses in pedagogy and psychology. Upon talking with Kurt, Kristina realised that in the new course she could use methods she favoured (“it connects with methodologies that I like”), so she might enjoy teaching in this new way. There was also at this time ineffective leadership within the department; both she and Kurt were irritated with the leadership in general. Kristina’s particular comment regarding, “I didn’t have time to design it myself,” refers to the specific situation that student registration had been completed in mid-April, but Kristina was asked to teach a section in mid-August, with the course to begin in the last week of August.

**Grant award.**

Only one teacher noted a grant as a catalyst for her innovation. When Missy was a chemistry teacher, a university faculty member approached her about collaborating in a university-school partnership for developing curricula. The faculty member’s grant allowed her to attend a national science conference, where she was inspired by one workshop presentation in particular. This inspiration led to her developing a unit on student-built radon detectors intended to be used in the home. She used the unit in her class, she contributed her curriculum to the group funded by the grant, and she later presented the idea at a state-level conference.

**Lack of materials.**

It is possible that teachers are inspired to innovate because of an obvious situational need, such as a lack of classroom materials. This study purposefully involved only teachers of academic subjects, and none of the teachers stated that there were no textbooks for these subjects. Janine, a fourth grade teacher in this study who teaches mathematics and reading, also teaches technology. She had no textbook for technology, but as this subject was not included in the study, her remark regarding this is not included in Figures 4, 5, or 6. Likewise, Jane had taught special education classes at the beginning of her career thirty years ago; at that time, she said, special education teachers had to make most of their own materials. Because her comments in this regard were not directly related to teaching academic subjects in mainstream classrooms, these also are not included in Figures 4, 5, or 6.

Sixth grade (ages 12-13) history teacher Sam did not have enough textbooks for students in an academic subject area; he was the only one in the study in this situation. However, although he did not have enough textbooks for the students, it is likely that having enough would make no difference to his teaching. His identity-related motivation for innovating is addressed in another section below, but one remark in particular implies his probable lack of textbook use if he had one for every student.

I lecture from a typical 14 day unit, I probably lecture 3 times. So there’s 11 days where there’s nothing that’s from the textbook (Sam).

Sam uses the state standards for history to guide his instruction, but like Larry, who used textbooks as supplements, Sam relies on information and teaching methods which are not based on reading text and answering questions. Sam often leads his students through role plays; based on my observations in several schools in this area, the typical history teacher has students read passages aloud during class and has them answer the questions at the end of the textbook chapter.

**New resources.**

Only two teachers mentioned that their innovations were due primarily to new technology that was made available to them. Both teachers noted the connection between the use of technology and student engagement.

Middle school mathematics teacher Steve uses a wireless tablet laptop whilst teaching, which allows him mobility.

I walk around the room, I’m not stuck in the front only. The [student teachers] see me filtering through the room, working with the kids. I’m not stuck at the board, and that’s what I love about it. It’s centrally located, it’s colour, it’s what they're used to, they gotta [sic] be entertained. It’s flashy, they like it, they know how to use it (Steve).

On each student desk in Janine’s classroom is a laptop computer. She teaches four sections of technology to fourth graders, one section of reading, and one section of low-level mathematics. Student use the laptops in each of these subjects. She was particularly pleased with technology applications for her mathematics students, noting that they seemed more willing to practice mathematics skills when technology was available to them.

I have completely thrown out my math series [of textbooks]. . . . [Technology] has had a tremendous impact on my teaching. . . . Having the desk top computers [laptops on the student desks] for me has been phenomenal. . . . [My maths students] are not pencil and paper kinds of kids. They need to be more involved with their math. We use a lot of manipulatives but technology can be one of those manipulatives. I can give them games and things to practice that we are working on in class online. . . . Their willingness to do it is far greater (Janine).

Janine’s awareness of pedagogy is evidenced by her comment that her students “are not pencil and paper kinds of kids. They need to be more involved with their math.” This awareness is similar to the awareness of good pedagogy seen in the teachers who mentioned student boredom, as discussed earlier in this chapter.

**Professional magazine.**

Two teachers mentioned that some of their ideas for innovation come from ideas printed in teachers’ magazines. These were more sources of ideas to use rather than catalysts for major change in the classroom.

[The National Council of Teachers of Mathematics], all their magazines emphasise problem-solving. And there isn’t a magazine that you get every month that doesn’t have some kind of problem-solving technique (Spencer).

I used to take the magazine, and I’ve used from them for years. . . . You get ideas from those magazines and you rip out the pages and you start that (Jane).

These two teachers, Spencer and Jane, both retired shortly after the study was completed. It is possible that the influence of teachers’ magazines is less strong in younger teachers if they are more oriented toward using the Internet over print media. It is likewise possible that this category of the influence of magazines should be combined with the influence of Internet teachers’ groups. However, both Spencer and Jane used the magazines to support the teaching they already did; both of these teachers had their innovations inspired by hearing speakers at a conference (as reported above in the discussion of catalysts).

**Licence renewal.**

None of the teachers said that their motivation for innovating was catalysed by a need for university credits which would support their licence renewal. Two teachers, John and Gina, mentioned course credits but neither teacher specifically identified the need for licence renewal as the catalyst for innovating.

John mentioned that his innovation took place in because of a three-year continuing course in mathematics instruction which resulted in twelve graduate credits in mathematics. However, he did not mention that he needed these for teaching licence renewal. Gina stated that she took a course because she needed the credits for renewal. Although she innovated in her classroom as a result of taking the course, the course itself did not require her to innovate, as John’s did.

**Motivations to Self-Initiate Innovations**

Teachers in this study cited a specific event such as a conversation, workshop attendance, or even the realisation of their own boredom as a catalyst for their innovations, but they also noted that their motivations to introduce innovations might be quite different reasons than those mentioned as distinct, single events which served as catalysts. Motivations to initiate innovations fitted into two groups:

* motivators which are related to teaching perfection, and
* motivators which are related to the teachers as people.

Teachers who noted perfection motivators realised that textbooks did not meet the students’ learning needs. Motivations related to the teachers as people were those reasons related to the desire to experiment with new teaching methods, advance careers, develop a social-professional outlet, or join an elite or specialised group of teachers. What the teachers in this study said regarding the motivations in both of these larger categories is presented in the following sections.

**The attempt at teaching perfection.**

Teachers cited perfection-related reasons to initiate innovations. The over-arching reason to innovate was to increase student learning. These remarks can be sorted into the following two categories:

* textbook failure, which includes issues of both quality and of meeting educational standards, and
* increasing student engagement through improved learning experiences, which includes issues of learning styles and concept application.

***Textbook failure: quality and education standards.***

Teachers in this study noted the failure of their textbooks in the areas of both quality and of meeting the standards. The quality issue relates partly to the boredom issue addressed above, but 14 teachers (47%) made specific remarks in reference to book quality.

Five teachers (17%) (4 mathematics, 1 science) remarked on positive text qualities. Four of the elementary teachers made positive remarks about textbook *Expressions*, ([*Mathematics Expressions*, 2006](#_ENREF_150)), which in their school district is a supplement to a mainstream mathematics text. These teachers noted that they used *Expressions* as a source rather than as an everyday book.

One teacher, Larry, a science teacher in his 30th year of teaching, went into specific detail about positive textbook features. Although he said, “I’m not a textbook kind of guy,” he appreciated the efforts made with newer textbooks:

I think the newer, the newer publishers, I think that they’re aware of, that just textbook-driven classes aren’t as stimulating to the learning. . . . [The online version also] offers reading help for students that are slow readers. It chops it up for them. And the other thing is that they can review online. . . . It has a visual for a concept, it has an explanation for a thing, and it’s interactive, and so, so, I think that the publishers now understand that kids need a little more stimulus, and the textbooks nowadays are better. I think they’re, it’s more thought. And they’re wrapping the ideas around it, and they’re actually encouraging us to be outside the textbook a little bit more (Larry).

Six of the 7 (86%) literature/reading teachers made negative comments on the quality of their textbooks, citing as poor not the selections but the analysis required of the students. The social studies teachers expressed similar opinions of their texts; all (100%) mentioned that they did not want to use the text to be used on a daily basis. Below are representative comments from both literature/reading and social studies teachers.

The questions in the lit book, are, I’m sorry, just pass the questions up in our lit book. I don’t, I don’t, they just don’t do it for me (Marcie, literature).

The basal [reader] which we were told to use just doesn’t go in-depth enough. I use class sets [of books instead] (Lianna, reading).

Like I said, wonderful resource; I’m glad to have it, you know, for a starting point for me, but yet not for the students every day (Tia, social studies).

It’s been probably the best thing has happened to my teaching. . . . What we basically did was threw out the textbook (Danielle, social studies).

Another 3 teachers (10%) noted that the adopted textbook did not address the South Dakota state curriculum standards in their subject areas. Although the United States has a federal department of education, each state develops its own curriculum standards for each subject area. Textbook publishers typically tailor their books for the states with the larger customer bases. South Dakota’s K-12 student population is fourth smallest among the 50 states ([2008](#_ENREF_161)), and South Dakota education standards differ from those in other states. Therefore, textbooks may not reliably address state standards. Sam, Janine, and Missy, who teach different subjects, all noted that they had to innovate in order to meet the state standards.

[Whilst teaching the three major world religions], I had to make up the entire Christianity unit on my own. There was almost nothing in the textbook from that one. I guess there’s not a textbook out there that goes through what we do here (Sam, 6th grade social studies).

You can’t be a textbook teacher anymore in order to meet the standards. Textbooks are written for the big states. You have to be creative while teaching. The only textbook that even comes close to what I need to be doing is my reading series. . . . I have completely thrown out my math series. Technology, there is obviously no textbook that I can rely upon. That all has to be created (Janine, 4th grade reading, mathematics, and technology).

These books, I suppose, are based more on the national standards than on the South Dakota state standards (Missy, 6th grade science).

***Increasing student engagement through improved learning experiences.***

Participant teachers represented all academic subject areas in the K-12 schools (English language, mathematics, reading, science, and social studies) and teacher preparation/educational studies in the university. All of the teachers in this study noted that one motivator for innovating was to improve their students’ learning, and the teachers gave examples of specific ways they worked to increase student engagement with the content. This motivator echoes Australian teacher Mr Volker, who had realised that “the ways we were doing things were not good enough” ([Ritchie & Rigano, 2002, pp. 1083-1084](#_ENREF_177)). One participant cited others’ evidence that he could expect better student engagement and learning if he adopted a technology innovation. However, this innovation was not the one which he talked most about in his interview.

[The testimony given at a workshop] was all the justification that I needed [for incorporating more technology]. If it engages them more than what I am doing, then I should be doing it (Clark).

Teachers mentioned several specific factors within the general motivator of improving student engagement and therefore learning. Most commonly, the teachers strove to create situations which would result in “better” student learning or understanding (these generally were undefined; cited by 16 of the 30 teachers, 53%). Thirteen (43%) said that they wanted to increase student interest in the content. Twelve each (40%) mentioned wanting to increase student ownership or student fun within the classroom. Nine teachers (30%) said they desired to provide their students with applied or authentic activities. Eight teachers (27%) each cited student learning styles, discovery learning, or an appropriate level of instruction. Fewer teachers noted motivators which fit into other categories, such as a desire to decrease student anxiety about learning the content (3 teachers, 10%), to allow students to be active (5 teachers, 17%), or to work in groups (3 teachers, 10%). See Figure 10.

*Figure 10*. Student learning motivators for initiating innovations.

Rather than examining each of the motivators in Figure 7 separately, it is perhaps more revealing to correlate the teachers’ remarks about student learning with other factors such as years of teaching experience, subject area, and class length.

*Correlations of student fun remarks with teacher experience.*

Correlating the types of remarks teachers made about student learning with the teachers’ life phases proposed by Day, Sammons, Stobart, Kington, and Gu ([2007](#_ENREF_55)) revealed only two discernable patterns, one with the mentioning of student fun and the other with learning styles, which will be discussed in the following section.

All four of the teachers in the 0 to 3 years of experience professional life phase thought that their innovations would result in more student fun. The word “fun” was used differently than was “engagement,” but it is possible that some who did not use the word “fun” might have talked about this had the interview guide led them into this. Here is an argument for using, along with the interviews, a Likert-style survey instrument which would ask specific questions of teachers. However, this instrument would have to be worded very carefully in order to not “lead” the teachers into agreeing with statements which they would not have volunteered as influential.

The characteristic of student fun was mentioned by another 8 teachers, but they were distributed throughout the other professional life years of experience groups, with the exception of the years 31 plus group. See Figure 11.

*Figure 11.* Correlation of teaching experience with citation of student fun as a motivator.

*Correlations of student learning styles remarks with teacher experience.*

Eight teachers mentioned attempting to teach to different student learning styles as a reason for their classroom innovations. Of these eight teachers, six were in the 24 to 31 years of professional experience group. One of the remaining teachers was in the 16 to 23 years group, and the last was in the 8 to 15 years group. In particular, Clark talked about the dichotomy of students having various learning styles and the typical method of transmitting knowledge in secondary classrooms. He said that many times students were uncomfortable with presentations which appealed to learning styles other than their own or those to which they were accustomed.

People like me [concrete-random learner] and poor abstract-randoms are always forced to learn concrete-sequential stuff, and so the concrete-sequentials should expand their cranium, too, and learn how to think metaphorically and globally (Clark).

It is not obvious why the more experienced teachers were more likely to mentioned learning styles than were the less experienced teachers. It is possible that the more experienced teachers had teacher inservice training emphasising learning styles which the other teachers did not. It is also possible that the more experienced teachers are more aware of pedagogy which is more inclusive for all learners. This would, of course, lead to a separate study.

*Correlation of student learning and length of class.*

Teachers in this study were also are motivated to initiate innovation simply by their class format. Three of the university faculty members in this study had classes one day a week for three hours each meeting. Laura, Risa, and Kurt all cited the length of class as a reason to introduce change. Kurt’s comment is representative:

There were two reasons for doing this [innovation]. One was to break up a three-hour block of time. I mean, I can’t talk for three hours, and they can’t listen for 45 minutes, let alone three hours (KurtPhase3).

Like the teachers who mentioned learning styles as influential, these university teachers show an awareness of effective pedagogy. Although these three are instructors of teacher education, they also fit into the categories of more experienced teachers, in either the 8 to 15 years group (Laura) or the 16-23 years group (Risa and Kurt).

*Correlations of student learning remarks with subject area: Maths and science.*

Correlating teacher statements about student learning with subject area of the innovation revealed three patterns. These were the types of remarks are explained below. They were made by teachers of mathematics, science, and, in the strongest of the correlations, teacher education.

Nine of the 30 study participants (30%) initiated innovations in mathematics. What is common amongst the mathematics teachers was that 6 of the 9 (67%) remarked on “better” student learning or understanding.

I think the kids learn it better this way. . . . It could be, you know, that they were just really struggling with it, and then I try to think of a way for them to learn it. And I am a visual learner, and I think that helps [me to figure out a way to explain it], especially in geometry (Jenna).

Four study participants innovated in some manner in science. Three of them referred to discovery learning. Three of these science teachers had 17 or more years’ experience in the classroom; they referred to their students’ range of abilities, and these same three also noted wanting to stimulate student interest in the subject area. The fourth science teacher was in her eighth year of teaching and, as an elementary teacher, also taught other subject areas.

[When students learn inductively] they have ownership, they get to discover, it’s a lot more exciting, and I suspect that it trains their brain better, you know, if you give them a chance to discover. But it takes ten times longer (Clark).

Clark’s comment here regarding science learning and Jenna’s above regarding mathematics learning were representative of what the science and maths teachers said about teaching their students. These comments once again show that the innovative teachers were aware of good pedgogy, or trying different ways of teaching which would result in their students learning more completely.

*Correlations of student learning remarks with subject area: Teacher education.*

One correlation in the study was stronger than any other examined. All 4 university education faculty members mentioned all of the following factors related to their motivation to innovate:

* increasing student learning or understanding,
* increasing student ownership of the curriculum, and
* providing authentic/applied learning opportunities.

In examining their remarks, it is possibly helpful to also note that at the time of the study, these 4 teachers were housed in two different departments. Below are remarks from each of these teachers which reveal the three factors of understanding, ownership, and application.

I think [experiencing Storyline is] a wonderful way for the students to learn about it as a process, because last semester I introduced it to the students and it was just, “This is Storyline. Here’s an example of a Storyline; what do you think about it?” And they did not buy into it (Laura20Nov).

I want them to be successful. . . . Vygotsky said that play pushes learning. . . . The whole point is that play pushes learning, needing to know, needing to learn (Kristina23Sep).

I really liked the connection that we had made with our character, this summer when you [Wendy] led the course. . . . I really thought [the Storyline approach] would work out well for them to create empathy and compassion for a child that might have a disability, as a potential teacher, you know, of a child that might have a disability (Risa29Sep).

[Through using Storyline I’m] trying new approaches to helping students understand new concepts in teaching. It’s going to require a lot more synthesis, a lot more evaluation, a lot more application (Kurt20Aug).

These teachers again return to what developed as highly influential, the issue of good pedagogy. Like the K-12 teachers, the university teachers wanted their students to develop more complete understanding of the concepts. This has not formally been a problem at this university in teacher education, as there is a high student pass rate on the teacher licensing examinations. Like history teacher Sam whose students do not take proficiency exams, the university teacher comments regarding increasing student learning shows that the teachers desire high student learning, regardless of the existence of exams.

Student ownership of curriculum was not mentioned specifically by the K-12 teachers, except through the implied ownership of the students participating in Cognitively Guided Instruction, in which they produced the maths problems to examine. All university teachers mentioned student ownership; this could be because they were all teaching future educators and saw the need for their students to internalise the knowledge and applications.

Although all of the education teachers mentioned the factors of student understanding and ownership, the teachers particularly spoke of their efforts to provide their students with practical application activities related to the concepts in their curriculum. These instructors emphasised this to such a degree that it is appropriate to provide specific examples of their remarks.

What I had hoped for was that students . . . would find that the hands-on experience helped them to problem-solve or deal with issues that affect teachers in the real world (LauraPhase3).

I really think that it [Storyline] increases the motivation for, the motivation and the personal investment, what they’re learning and what they’re supposed to apply (RisaPhase3).

I was looking at ways that I could take the concepts that I’m going to be teaching in Educational Psychology and apply it to some real person or to some realistic scenario. . . . I think [the visual the students create is] going to be real important. I wish it could be full body. I think that, I think it will give something for my students to attach their ideas to (Kurt 20Aug).

It’s easy to think about [the principles of educational psychology] in the abstract, but then [the students] need to apply them. And they had applied them, a lot of them apply really well to the CAT [Create-A-Teen Storyline] . . . the identity development, the intelligence, the, um, I mean, motivation, behaviouralistic (Kristina26Nov).

These remarks may stem from student comments often seen in the first stages of teacher education, in which the students reveal that though they attended school for the previous 13 years, they know very little about what teachers actually do to create learning situations. Additionally, comments on students’ course evaluations and on graduates’ program evaluations reveal that students sometimes think there is too much theory unconnected to teachers’ “real lives.” Though some of these remarks may be attributed to a lack of complete understanding due to a lack of experience, there may also be some attribution to the possibility that teachers in university programs may not be explicit enough in the practical application of theory. Again, through the remarks about the desire to increase concept application show that the teachers in this study were aware of factors contributing to good pedagogy.

*Research and student learning.*

Two teachers (7%) cited statements from research when discussing reasons to initiate innovations, but these appeared to be side remarks which validated the innovations rather than those which served as influential motivators. Because these appeared to be validations rather than motivators, research reasons are not included in Figure 7 as motivators. However, these remarks again return to the issue of teachers being aware of good pedagogy. Below is an example of this type of validation.

I love the research, especially the research that supports and justifies what I thought was the right thing all along. I’ve used analogies. Now the research shows that it’s the right thing to do. I’ve always thought it was. And now we actually have scientific data that, that, that shows us what’s the right way to do things (Clark).

**The search for meaning, or innovation and the teacher as a person.**

It is perhaps easy and obvious for teachers to mention increased student learning when they are questioned about why they initiate an innovation. It is perhaps more difficult and less obvious for teachers to note personal reasons for initiating innovation. One of Jerslid’s (1955) significant findings was that teachers had a need for “meaningfulness,” because they knew that schooling often lacked personal significance, vitality, and engagement. In this study teachers did reveal personal reasons to initiate change, and they were often related to Jerslid’s idea of meaningfulness. Most of the personal remarks were related to teachers’ own boredom, a factor which also served as a catalyst for change as noted earlier. A few teachers noted that their innovations were related to their identities as habitual innovators. This section will examine boredom and identity as well as the reasons to initiate innovation related to opportunities of professional advancement, joining a social-professional group, and belonging to an elite group.

***Personal boredom.***

A realisation of boredom served as a catalyst for 12 of the 30 teachers (40%) in this study to initiate innovation with their curriculum. This catalyst was discussed earlier in this chapter. Boredom also served as a motivator, rather than a one-event catalyst, for initiating innovation; 5 teachers of the 30 (17%) mentioned boredom but did not identify it necessarily as a catalyst for introducing change. Putting these catalyst and motivator remarks together, 17 of the teachers (57%) mentioned personal boredom as a reason to initiate change. This is somewhat similar to the almost half of United Kingdom teachers who in 1986 reported that their work demanded too little in intellectual terms ([Johnstone, 1989](#_ENREF_111)). A slightly smaller percentage of Swiss secondary teachers, but still somewhat close to half at 40%, said that they had a strong desire for innovation and were “fearful of routine, afraid of going stale” ([Grounauer, 1993, p. 162](#_ENREF_86)). The current study of course relied on teachers who volunteered to talk about their innovations; a higher percentage of this type of response could be expected as opposed to those in other studies where participants were not selected as innovators. Representative remarks from participant teachers are below.

I write notes to myself all the time, in my lesson plan book, that, you know, that this was boring, the kids didn’t understand this, need to develop something here, it could be, you know, that they were just really struggling with it, and then I try to think of a way for them to learn it (Jenna).

Creativity is what keeps me in education. It is never boring (Janine).

I am *so* not bored [speaker’s emphasis] (Sara).

Correlating remarks of personal boredom with whether the teachers taught one section of their topic or multiple sections of the same subject may be of significance. Seventeen of the 30 teachers (57%) in the study mentioned boredom either as a catalyst or as a motivator; 13 of those 17 who mentioned boredom (76%) taught repeated sections of the same class. Four of the 17 teachers who mentioned boredom (24%) taught only one section of their class. The student teacher, who taught only one section of reading, had not used the textbook in a previous year but had already noticed the potential for personal boredom.

Taking together the factors of professional life phase and when the teachers realised the factor of personal boredom is also possibly significant. Building on the earlier analysis of boredom as a catalyst, 11 of the 17 teachers (65%) who mentioned boredom either as a catalyst or as a motivator recognised boredom within their first three years of teaching and began initiating innovation during these first three years of teaching. Three of these 11 early-innovators were in their first three years of teaching during the study.

***Personal identity itself inspired change.***

Four participants were the most forthright about their identity as an innovator or as a person who enjoys change and challenge in the classroom. Although teacher identity is the main focus of Chapter Five, the topic is also relevant to a discussion of why teachers initiate change. These 4 teachers who were forthright about enjoying challenge and change had little in common. They taught different subjects to learners of different levels (Sara, primary school; Sam, middle school; Clark high school; Kurt, university), attended universities in different states for their initial teacher training, and had different years of experience. For these 4 teachers, teaching implies innovation, and this identity was one that they had when they started their education careers:

Right out of college I had four years of teaching: I had third and fourth grades together, and then I had fourth grade, and second and fourth, and then I had just fourth. . . . [Doing new things in the classroom] is appealing to me (Sara29Aug).

From a typical 14 day unit, I probably lecture 3 times. So there’s 11 days where there’s nothing that’s from the textbook. . . . I don’t ever just grab something out of there [any resource] and copy it (Sam, first-year teacher).

I was going to come in and do everything differently. And I did, . . . trying to reinvent every wheel. . . . I’m kind of a maverick, you know. I don’t want to do things like everybody else. . . . I can’t tolerate the sameness. I actually like change (Clark).

I really like new challenges, I really like changes. I find that I get bored doing the same old thing with any couple of years. So I’ve always enjoyed doing new things. In fact, if I were going to fault myself for anything, it would be for doing too many new things (Kurt20Aug).

***Professional advancement.***

A logical question for teachers who innovate would be, “Did you initiate innovation with the thought that this might advance your career?” This direct question was not included in the interview guide, but teachers were asked the open-ended question, “Why did you start this innovation?” No teachers in this study directly communicated that they were motivated to innovate by career advancement issues, and no teachers implied that career advancement was part of their motivation.

Twenty-five of the 30 teachers (83%) participating in this study were teaching in K-12 school districts. In all but a few United States K-12 schools, there is no “head of department” status attached to being an exemplary teacher, and none of the teachers indicated an intention to alter career tracks toward other education-related jobs such as principal, athletic director, or education positions at the regional or state level.

One K-12 participant, Diana, was a student teacher who applied for permanent positions in the semester following the innovation she implemented during her student teaching. Although she initiated innovation during the course of this study, she had already proven herself to be a good candidate for a permanent job. The opportunity to innovate was more related to her desire to do something fun and engaging with her students and with her master teacher, rather than motivated by the desire to achieve something which would secure her a better position.

Five of the 30 participants (17%) worked at a university. Professional advancement is a more relevant issue to address in this environment than in the K-12 environment because of the hierarchy which exists in universities but not in K-12 schools. University faculty positions have a hierarchical job title and salary structure which does not have a corollary in the K-12 schools. United States post-secondary teacher positions are either non-tenure track or tenure track. Non-tenure track positions usually require masters’ degrees; these positions are normally classified as either adjunct faculty (part-time, temporary, and usually supervisory in nature) or instructor (full-time or part-time, either temporary or permanent). Doctoral degrees are usually required for the tenure-track appointments to the ranks of assistant professor, associate professor, and professor. Advancement through these hierarchical ranks depends upon years of employment and on meeting employment standards in teaching, research, and service.

Three participants housed at a university (Sara, Risa, and Laura)[[9]](#footnote-9) held instructor rank and were not able to formally advance in their careers without first obtaining doctoral degrees. Their innovations demonstrated their willingness to try new ideas in their classrooms. This quality is stated as an ideal in the standards for their job description and is used in employee reviews, but it is one of many factors in the standards. Innovating also presented them with the risk of not completing the scheduled curriculum, a factor other teachers in this study noted as well and which will be returned to in Chapter Six, Sustaining Change. Whilst participants Laura and Risa expressed particular concern with the curriculum requirement aspect, they did not express the employee review as a motivating factor for innovating. Their concerns and doubts will be discussed in Chapter Five, Identity.

The other two university participants also expressed concerns regarding curriculum content and their innovation, which also will be discussed in Chapter Five. Like the other university participants, Kristina and Kurt did not view their teaching innovations to have an effect on career advancement. Also like the instructors, Kristina and Kurt had in their professional standards an ideal to demonstrate excellent teaching and attempt new ideas in the classroom. However, again like the instructors, Kurt and Kristina did not need this innovation in order to advance in their careers. Kristina already had reached professor rank before the study began, and she was already known for innovative teaching. At the time of the study (2008-2009) Kurt held the rank of assistant professor and was scheduled for an upgrade review to the rank of associate professor in the 2010-2011 academic year; he stated that this evaluation depended much more upon publications, presentations, service, and ongoing effective teaching than on one teaching innovation.

***Social-professional outlet.***

Innovative teaching might provide teachers with the opportunity to participate in a social network or to join a related interest group within the profession. It is possible that forming or joining social-professional networks fills a need for adult contact within their career community. Figure 12 provides a visual comparison of the social-professional influence on innovation.

*Figure 12.* Social-professional outlet and teacher motivation to innovate

Twelve of the 30 teachers in this study (40%) did not state that they were influenced by the presence of a social-professional outlet in connection with their innovation. They did not mention this directly in connection with their innovation, and an analysis of the interview transcripts does not reveal inferences of this influence.

Two teachers (7%) experienced the development of a social-professional influence on their motivation to innovate during innovation implementation. One of these was a student teacher and the other was a first-year teacher. They became part of a professional learning community whose other members were much more experienced than they. The experiences of these 2 teachers in relationship to their identity development will be further discussed further in Chapter Five.

For the other 3 teachers (20% of those motivated by social-professional outlet), the social-professional outlet was a minor but contributing influence. None of them mentioned these outlets as major influences on their innovations, but they did contribute to the teachers’ work. Moira and John had the support of professional learning communities which were focussed on their areas of innovations; Larry was part of a subject-area group.

We have the opportunity to meet once a month with the science, with the other science teachers in the building, so you know, we can draw from each other and share ideas, so I think that is beneficial as well (Larry).

Sixteen of the teachers in this study (53%) were motivated to innovate by the opportunity for a social-professional outlet. The social-professional outlet was a major, rather than a minor, influence on 13 of these 16 (80%) teachers. For instance, Missy was asked by a university faculty member to join a professional group working on developing lessons in connection with a grant. As part of this grant, she had the opportunity to go a national-level science teachers’ conference. Spencer also cited attendance at a national-level conference as a motivator for his innovations in mathematics. Below are examples of comments about working with others.

We teach pretty much South Dakota in social studies the whole year. And [the new teacher] was from Kansas, and she said, “I don’t know anything about South Dakota.” She was kind of nervous. And so during one of those team meetings, we [four teachers in the team] decided that we were going to take a trip around South Dakota, the four of us [to learn about the curriculum first hand] (Danielle).

I heard really positive things about Storyline from Sara. Sara, Laura, and I are the early childhood team and we like doing things together (Risa14June).

[Another teacher] and I grew through teaching together. She and I made it a goal to attend at least one workshop every year. And we often went together. . . . I think another delight about teaching is working with other people in the building (Jane).

Mary: We teach sixth grade English, and we’re together on every single thing, practically, which is probably not very common but is very nice.

Stephanie: Very, very nice (MaryandStephanie).

***Sense of elitism.***

Another socially-related motive to innovate could be that the innovation provides an opportunity for the teacher to join a group, thereby establishing a sense of group belongingness or a sense of elitism. The South Dakota culture in which these teachers operate, as noted in Chapter One, Context, is one which values work well done but one which does not condone sharing with others self-identified exceptional work. For this reason, asking teachers directly about their sense of belonging to an elite group could result in invalid data; cultural norms might prevent those with this feeling from expressing it. Because of this cultural factor, questions relating to this idea were not directly part of this study. However, the interviews with the teachers do reveal some data regarding the possibility that a motivator to innovate could be the opportunity to join an elite group. This discussion of an identity of elitism will be discussed again in Chapter Five, Identity, but it is relevant here to include the teachers’ statements. Figure 13 visually presents an analysis of the data in relation to elitism.

*Figure 13.* Sense of elitism as a motivator to innovate

Two teachers were comparatively overt in their identification that their innovations were motivated by their sense of elitism. The experienced teacher Clark was quite frank about his original motivation to be a hero, and although he disparages that now, in his 18th year of teaching, he continues to value being different from what he sees as the norm.

I really got into teaching to be a hero. . . . I had a real idealistic, heroic kind of thing, I was going to come in and “save” education. . . . I’m kind of a maverick, you know. I don’t want to do things like everybody else (Clark).

Sam as a first-year teacher expressed not heroism but a sense of commonality with his students. The commonality he shared with his students functioned as elitism because it was not the norm for his teaching colleagues.

These kids now, and I’m one of them, totally, I’m only 25, so instant gratification is what we shoot for. So the faster I can show these kids something, the more they will understand it, and the easier it is to relate it to them. So that’s why I choose to do that (Sam).

Fourteen teachers of the 30 in the study (47%) implied rather than overtly stated a sense of elitism as a contributing motivator for initiating innovation. These teachers did not explicitly express a sense of belonging to an unusual group, but they did address some form of elitism through their remarks. Four were involved in a state-wide professional development course in mathematics teaching (Greta, John, Tammy, and Tia), 3 had received funding to attend national conferences in their subject area (Spencer, Missy, and Jane), 4 formed or worked within a small group (Danielle, Mary, Stephanie, and Sara), and 3 had innovated without others (Lana, Lianna, and Marcie).

Since I’ve been a part of it [the maths group], I really enjoy it. I’m probably one that seems to share quite a bit more at meetings (John).

Spencer communicated his feeling that not only was attending national conferences elite but that high quality teaching was in itself elite.

I went to almost every national conference [National Council for Teachers of Mathematics] for almost ten, fifteen years. . . . The attitude that too many people in South Dakota have, that it’s just walk into your room and they could do it. And you can’t, you know. You can’t. In any subject area (Spencer).

Lana’s remarks were among the few which referred to teaching colleagues and an awkward work relationship. She did not elaborate on this implied comment of an elitism factor.

Superior people are uncomfortable [to be with]. It is hard to share with colleagues (Lana).

Lianna also implied a sense of superiority. Her superiority remarks were related to her teacher preparation and previous teaching experiences. She had been teaching west of the Missouri River, which divides the state in the middle and contributes to state residents’ geographically-oriented identity. Lianna’s “West River” university had a particular emphasis on inquiry-based science, and now she lives “East River,” which she finds lacking in professional development.

The philosophy and the professional development opportunities East and West River have a huge difference. . . . There is pretty much no professional development here in comparison. I’m going to a class in Ohio! (Lianna).

Marcie’s remarks included her previous teaching experiences as well as her personal interest in international travel. She did not refer to them in a superior manner, but these experiences are not usual for South Dakota teachers. As a seventh grade English teacher, her innovations generally centre on incorporating world geography, which is a required seventh grade subject but is taught by a different teacher.

I love to travel. . . . I started teaching in the Peace Corps, in Kenya (Marcie).

Fourteen teachers (47%) did not appear to be influenced at all by a sense of elitism. Twelve of these teachers did not communicate anything which could be inferred as referring to a sense of superiority or elitism. Janine and Steve directly addressed this issue of elitism. It is possible that Janine and Steve consider most teachers to be quality innovators. It is also possible that their remarks reflect the South Dakota culture of not lauding one’s own achievements.

Janine, who started teaching in 1979, is one of a team of four fourth grade teachers whose students rotate between the four teachers for subject-area classes. Janine teaches one section of reading, one section of low-ability mathematics, and four sections of technology. She claims to be an ordinary teacher; her innovations include near-constant student use of laptop computers and not using a mathematics textbook at all. In 2010, Janine became the South Dakota Teacher of the Year.

I am just a basic teacher trying to keep up (Janine).

Steve teaches secondary mathematics. In the year of the study, his sixth year teaching, he was named the “Most Distinguished Recent Alum” from his university. He was awarded “Teacher of the Year” in his middle school during his third year of teaching.

I don’t think I’m deserving of those awards. I don’t think I do anything different than anyone else. I think I’m just an average teacher. . . . I’m not one of the best, by any stretch of the imagination (Steve).

**Conclusion**

Teachers communicated that they experienced catalytic events which precipitated their initiating innovation in their classrooms. This catalyst was likely to be a professional development experience which they pursued by their own choice. Required classes, workshops, or professional development sessions were not mentioned by the teachers in this study as an inspiration to initiate change in their classrooms. When the catalyst was not a formal learning experience, the catalyst was likely to be a realisation of personal boredom with the curriculum. Two small groups of teachers mentioned conversations either with another teacher or their own children as catalysts for innovations.

Motivations teachers cited for initiating innovation in their classrooms were generally to increase student engagement and learning. Many remarks showed that the teachers were motivated by what they considered good pedagogy. Secondarily, teachers wanted to avoid personal boredom. A majority of the teachers who mentioned boredom noticed the boredom potential within their first three years of teaching. Related to a boredom factor is the fun factor. Three-quarters of the teachers communicated that they wanted to experience personal fun within the classroom environment. Teachers were not motivated to initiate change by the possibility to improving their career prospects or by the desire to earn credits to retain their licenses.

The idea that textbook failure could inspire teacher innovation was not addressed in the literature which was reviewed. Although textbook publishers test their books and have both classroom teachers and subject area specialists contribute, some teachers in this study still thought that the books were boring or that the questions in the books were uninspiring. If this teacher opinion carries through to the larger teacher population, further investigation is warranted.

One of the reasons defending textbook use is that they usually have been carefully examined for bias of many sorts. When teachers initiate innovation and do not use textbooks, it is perhaps possible that they require themselves to be more aware of introducing bias in their classrooms than if they used a textbook. It is also possible that the teachers do not address this issue as completely as they might.

Some of the teachers in this study mentioned that the textbook did not address the state standards. There does not appear to be a standard way for teachers to work with this situation.

**Chapter Five**

**The Impact of Self-Initiated Innovation on Teacher Identity**

**Introduction**

The focus of the previous chapter was why teachers innovate; data from teachers in both Phase 1 and Phases 2-3 was included. This chapter explores the relationship of innovation to teacher identity and relies on information from the teachers in Phases 2-3 as they developed, implemented, reflected upon, and repeated major innovations in their teaching—in this study, using the Storyline teaching method. Because Phase 1 teachers were not interviewed throughout the process of innovation, there is no data from them in this chapter. The following chapter, Chapter Six, examines the issues teachers face when sustaining self-initiated change in relationship to curriculum or curricular presentation. Data from both Phase 1 and Phases 2-3 teachers is included in the discussion of sustaining change.

Several of the key research questions relate to the topic of this chapter, teacher identity. The most relevant question was, “What is the impact of self-initiated innovation on a teacher’s identity?” Wording this another way, “How does making curricular innovations affect a teacher?”

* Are the anticipated benefits realised and sustained?
* What are their satisfactions and frustrations?
* Does innovating with curriculum enable teachers to sustain their motivation and commitment?
* Does this return to the issues of dimensions of identity?

The chapter first contains a short introduction to teacher identity as discovered from the participants’ remarks. The chapter then communicates anticipated benefits and difficulties the teachers foresaw as resulting from their innovations. The third major section relates the teachers’ processes and experiences through the course of the innovation, including the spontaneous formation of a professional learning community, the difficulties the teachers actually encountered, and the benefits the teachers discovered. The fourth section relates the importance of student feedback to the teachers. The final section examines the participants’ experiences with identity stability and instability. The following chapter, Chapter Six, will address the sustainability of innovations.

**Teacher Identity Defined**

One recent study found that teacher identity is a composite of three competing interactions: professional (regulations and the teacher’s own definition of the ideal teacher), situated (school context such as administrative and collegial support, the community, and the students) and personal (life outside of school). These interact in such a way that they can be placed in a Venn diagram ([Day, et al., 2007](#_ENREF_55)). Teachers in this study expressed their opinions that there were not three but two dimensions to their identities.

I’ve always thought of it as two, like my personal life and my professional life (LauraPhase3).

That’s personal, my personal life, and, and, and my professional life (KurtPhase3).

Laura noted that in her life the two dimensions acted on each other; Kurt noted that he strove to keep them separate. However these factors act on each other, the teachers in this study made remarks on their professional lives which necessitate further explanation. A teacher’s professional identity is influenced by long term local and national policy, social trends as to what constitutes good teaching, continuing professional development, workload, roles, and responsibilities ([Day, et al., 2007](#_ENREF_55)). The Phases 2-3 teachers in this study, queried whilst in the process of innovating, did not remark much on policy; they did refer to their workload and roles. This lack of referencing policy is reminiscent of Australian teacher Mr Volker and American teacher Nancie Atwell, who both remarked that the national education standards did not influence their decisions to innovate ([Ritchie & Rigano, 2002](#_ENREF_177); [Schulz, 1994](#_ENREF_187)). More significant to participant teachers’ innovation process than workload and roles were their remarks which revealed insights into how teachers view good teaching. When they spoke of their innovations during either planning or implementing, their remarks fit into two categories: factors which grew from the objective needs of teaching, such as planning curriculum and marking papers, and factors which grew from the affective needs of teaching, such as their own feelings and managing classroom dynamics. This chapter examines teacher identity based on these two categories of objective and affective needs of teaching.

**Teacher Identity Whilst Beginning an Innovation**

As the participants thought about and planned their proposed classroom innovations, they anticipated both benefits and difficulties. These benefits and difficulties each further fitted into two categories: objective and affective factors. Objective factors are those such as covering curriculum and providing concept application. Affective factors are both interpersonal and intrapersonal issues which affect effective teaching, such as the teacher’s own feelings about the class, student contributions, classroom dynamics, and the teacher’s need to socialise. The teachers in this study revealed identity issues in both objective and affective areas. The teachers had thought about problems which might arise due to their innovations, but they also felt strongly enough about the anticipated benefits that they proceeded with their innovations.

**Anticipated benefits.**

Teachers anticipated that innovating would provide them with some benefits. Teachers expressed this with more strength when they referred to benefits in the category of filling a course need than they were in the filling a personal need. Some of them had immediate needs to fill, such as the two who were teaching a new course, but other teachers saw innovations as solutions to longer-term issues. Teachers also anticipated personal benefits related to their innovations, but although personal, the benefits were related to their careers. Teachers did not mention an anticipated benefit related to any law or policy.

***The innovation would fill an objective course need.***

Five of the 8 Phases 2-3 participants anticipated that the innovation would fill a course need. These five were all housed at the university. The teachers who did not mention filling a course need were Moira, who anticipated the innovation as filling a personal need; Diana, the student teacher; and Gina, the first year teacher.

Those who did mention that the anticipated innovation would fill an objective course need cited four areas: concept application, raising course rigor, aligning course with teaching philosophy, and providing an alternative to lecture. These remarks are correlated with teacher in Table 17. Evidence for each of these areas is provided below the table.

Table 17

*Innovation Anticipated to Fill an Objective Course Need*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Moira  Grade 4 | Diana  Student teacher | Sara  K at univ. | Gina  K, 1st year | Risa  Univ. | Laura  Univ. | Kurt  Univ. | Kristina  Univ. |
| Concept application |  |  |  |  |  | x | X | x |
| Raise course rigor |  |  |  |  |  | x | X |  |
| Align delivery with philosophy |  |  | x |  | x | x |  | x |
| Alternative to lecture |  |  |  |  | x | x | X |  |

*Application of the concepts.*

Kurt and Kristina’s immediate need was to provide their students with an application of educational psychology concepts. They did not at this time have a classroom observation assignment or placement attached to their classes. Both anticipated that using their fictitious Storyline teens would provide application. Laura also did not have classroom observation connected to her class in planning and managing early childhood education classrooms. She too hoped for application of concepts.

I knew that giving students a chance to apply the concepts in some sense of the authentic, or semi-authentic way with role-playing or fictitious . . . little scenarios . . . had worked, so I had a sense that it [the Storyline innovation] would work (KristinaPhase3).

They’re going to have to really think through the concept and understand the concept, at some level, if they are to accurately apply it to their teen (Kurt20Aug).

What I had hoped for was that students would . . . find that the hands-on experience helped them to problem-solve or deal with issues that affect teachers in the real world (LauraPhase3).

*The innovation would raise the level of course rigor.*

One of the concerns for teachers at the university is that there has been a lack of effective leadership in the secondary education department for about a decade. Surveys of matriculated students, both undergraduate and postgraduate, reveal that some students notice that the education classes do not require much rigor. However, this lack of rigor is possibly not unique to the secondary teacher education department; participant Laura, in the early childhood education department, noticed a tendency to have a passive student personality dominate.

It’s going to require a lot more synthesis, a lot more evaluation, a lot more application. . . . This course is going to be much more rigorous than it has been in the past. And that is in part is because of Storyline, that certainly is going to contribute to the rigor, what’s expected, indirectly, what’s expected of the students (Kurt20Aug).

The culture of the college classroom is to sit back, put time in the seat, and drool. There is some movement at the college level to get students more involved, more responsible for their own learning. This [Storyline] is a way to do that. I look forward to doing that (Laura14June).

Whether or not passivity and lack of rigor are related, Kurt and Laura particularly desired to challenge their students through the use of the Storylines. It is perhaps related to note that at the time of these interviews, both Kurt and Laura were on the college merger steering committee and were looking forward to college re-organisation and stronger leadership.

*The innovation would bridge teaching practice with teaching philosophy.*

The university teachers also noticed that their innovations would provide them with ways to link their lesson delivery to the educational philosophies which they embraced. The early childhood education department has a teaching philosophy which embraces the Reggio-Emilia philosophy. This philosophy is fairly unusual for South Dakota, which tends toward traditional paradigms. The participant teachers housed in this department (Risa, Sara, and Laura) mentioned that they wanted their teaching to reflect their philosophies, and that their innovation would do that.

I would like to carry over [into my classroom teaching] the philosophy of inquiry-based, constructivist education, and Storyline seemed like a great fit. . . . It’s important for me to do it, to model it for my students. It’s really different to change from preschool to elementary, and there’s currently no fit with the Reggio Emilia teaching philosophy which our department uses. This is a very concrete thing; instead of philosophy, you should go out and be constructivist and inquiry-oriented (Risa14June).

I didn’t want to pull away from what I already believe in [Reggio-Emilia teaching philosophy]. I see Storyline as strengthening and supplementing that (Sara14June).

Kurt, who has experience teaching in alternative schools and minority cultures (Hispanic and Native American), also noted his desire to help his students develop perspectives for working with the unconventional student.

Is it possible that through the attachment that the students form of their fictitious teen, that that will be a lens that they will start to use when they get out in the field and start to work with other teens? So those saboteurs that create the “tough guy” visual image and try to create that biography, will they develop a deeper understanding of what the façade of being a tough guy is all about? So when those history or PE teachers get out in the field, they’ll, they won’t completely “ream” the tough-guy students in their class? (Kurt20Aug).

These teachers had noticed that their personal philosophy of good teaching was sometimes at odds with the university-level paradigm of lecturing. Their goals as revealed here were both to teach more like what they valued in K-12 teaching as well as to increase the students’ understanding of what good teaching looks like, even in situations with the unconventional learner.

*The innovation would provide an alternative to lecturing.*

Three of the Phases 2-3 teachers, Kurt, Risa, and Laura, all taught in 3-hour blocks. All wanted to avoid lecturing for three hours, though Risa and Laura, having already taught their courses, had already practised ways to do that.

I was sort of apprehensive about teaching one three hour block once a week, and I think this will work out well (Kurt20Aug).

***The innovation would fill an affective course need.***

The teachers acknowledged anticipating benefits from initiating innovations. They talked with most strength about the benefit of filling an objective need, as noted above in applying concepts, raising rigor, aligning presentation with philosophy, and providing an alternative to lecturing. The teachers talked with less strength about the anticipated benefit of their innovation filling an affective course need, such as more knowledge, an opportunity to work with others, encouragement in the job, and the challenge they appreciated having. They did not mention anticipating that the innovation would affect interactions with students, though relationships with students has repeatedly been shown to be highly motivating for teachers at both the university and K-12 levels (see for example, [Kzltepe, 2009](#_ENREF_124); [Lasky, 2005](#_ENREF_125)). Table 18 shows the teachers’ contributions in these areas. Each is examined below Table 18 with evidence from the teachers.

Table 18

*Innovation Anticipated to Fill an Affective Course Need*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Moira  Grade 4 | Diana  Student teacher | Sara  K at univ. | Gina  K, 1st year | Risa  Univ. | Laura  Univ. | Kurt  Univ. | Kristina  Univ. |
| Personal learning |  |  | x | x | x | x |  |  |
| Socialise |  |  | x |  | x |  |  |  |
| Encouragement | x |  |  |  |  |  |  | x |
| Provide challenge |  | x | x |  | x | x | x |  |

*Personal teacher learning.*

Five of the participants attended the Storyline workshop conducted in June 2008. Three of the attendees said that they were interested simply in improving their own knowledge. A fourth, Gina, was drawn to the workshop mostly by the inexpensive units; the fifth workshop participant did not particularly mention a desire to improve her own knowledge of teaching or educational issues. Those who did mention the desire to learn are characterised by the comments below from Laura and Risa, both of whom realised that as teachers of pre-service teachers, they had an innate imperative to develop their knowledge in additional arenas of teaching.

I need to know more about this [Storyline]. [Last school term] I looked online and brainstormed about it, got ideas, and planned discussions with college students. I started a Storyline in my class, using questions like, “what would happen next?” One student said, “I don’t know why anyone would do this.” It deflated me. I decided to learn more (Laura14June).

I think it’s imperative for me to understand other ways to do curriculum. It’s imperative for me to try it so that I understand it (Risa14June).

As with the teachers who wanted to more completely align their teaching with their philosophy of good K-12 teaching, Laura and Risa here express their continued desire for using good pedagogy. In this case, the good pedagogy is knowing about alternative ways of teaching and communicating that to their students.

*Desire to participate with others.*

For a few teachers, the opportunity to participate in learning situations possibly leading to innovation is motivated by a desire to participate with others or develop social networks. Huberman ([1993](#_ENREF_104)) found that secondary teachers viewed inservices as social networking opportunities rather than as opportunities to change their practice. This was not quite the case for the three teachers who worked in the early childhood department at the university (Laura, Risa, and Sara); although they were in the same department, the environment was not as collegial as they had experienced in K-12 teaching. They did look forward to learning new methods, and they also looked forward to the networking possibilities. Sara mentioned that she would like to have a colleague down the hall who was doing the same things, a person with whom she could share. Teacher education departments are encouraged to develop partnerships and working relationships with teachers in the local schools. Risa’s comment sums up the thoughts of the teachers in this department.

I like the opportunity of working with others who are interested in the same things as I am, and so when Sara and Laura were going do it, too, that was something exciting. . . . And then also, building the relationships with the faculty at the elementary school also (RisaPhase3).

*Personal encouragement.*

Moira had the most years of experience teaching in K-12 schools. She alone mentioned personal discouragement due to policy in particular, and she attended the workshop intentionally to find a way to alleviate her discouragement. Moira also made a comment which could be interpreted as doubting that she is taken seriously as a good teacher when she introduces creative elements into her teaching. Lack of confidence in other teachers’ good opinions of one’s creative teaching was also expressed by university teachers on recent Internet forum posts ([geoteo, 2010](#_ENREF_75); [yellowtractor, 2010](#_ENREF_232)). Moira said:

I needed that spark to look forward to coming to school every day. I’m feeling a lot of frustration with NCLB [the No Child Left Behind Act]. There are grants for math and science, but that’s about it. There’s pressure for the teachers: we have to get rid of being creative. Storyline helps me to justify what I’m doing. Creative teachers get labelled, “oh, she’s not really teaching” (Moira14June).

Unlike Moira, Kristina’s need for situated encouragement came not from discouragement but rather the situation itself; just a few weeks before the semester began, she was asked to teach a course new to her. Participant Kurt’s sections of a new course filled, and the department head added an additional section with Kristina as teacher. Kristina went to Kurt to find out what he had planned; following his plans helped her with her new load. That semester she had four different courses to prepare for, as well as assignments in supervising student teachers and serving on committees.

*Personal identity needs a challenge.*

As mentioned in Chapter Four as to why teachers initiate innovation, often the motivation for innovation comes from a teacher’s perception of themselves as an innovator. Teachers in this study mentioned having the identity of simply enjoying challenge and change, sometimes in an effort to alleviate boredom. Again there is a parallel with Australian teacher Mr Volker ([Ritchie & Rigano, 2002](#_ENREF_177)), who talked of enjoying change. Phases 2-3 teachers’ remarks in this area are represented by those below.

Do the vocab, do the worksheet, do the story, I mean, how boring is that for you as a teacher? (Diana).

[Doing new things in the classroom] is appealing to me (Sara29Aug).

The teacher’s role [in teaching with Storyline] is critical. I have a comfort level with this sort of thing which is much higher than a totally traditional teacher (Sara14June).

I really like new challenges. I really like changes (Kurt20Aug).

**Anticipated difficulties.**

Just as the teachers anticipated benefits in both objective course needs and affective course needs, the teachers anticipated difficulties in these areas. These appear to be less universal as factors than were the anticipated benefits, though there are some commonalities.

***Difficulties anticipated in objective course needs.***

Of the teachers who attended the workshop and did not change their plans, only Risa had multiple concerns about implementation with regards to her course. Kurt, who did not attend the workshop and who developed his plans based solely on a few conversations with the researcher, had the most concerns. However, some of his concerns were unique to the plan he developed, which required the use of technology. The teachers’ comments are categorised in Table 19. These concerns were in the areas of wondering if there would be complete curriculum coverage, having incomplete plans, the lack of a body of research specific to the innovation, the appropriateness of the innovation for the grade level. Additional concerns were in the areas of the amount of time assessment would take, anticipated difficulties with technology, and the planning time the project would take in general. Each of these (curriculum coverage, incomplete plans, lack of research, grade level appropriateness, assessment, technology, and time) is discussed in a separate section following Table 19.

Table 19

*Innovation Anticipated to Present Difficulties in Objective Areas of the Course*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Moira  Grade 4 | Diana  Student teacher | Sara  K at univ. | Gina  K, 1st year | Risa  Univ. | Laura  Univ. | Kurt  Univ. | Kristina  Univ. |
| Curriculum coverage |  |  | x |  | x |  |  |  |
| Incomplete plans |  |  | x |  |  |  | x |  |
| Lack of research |  |  |  |  |  | X |  | x |
| Grade level appropriateness |  |  | x |  | x |  | x |  |
| Assessment, technology, and time |  |  |  |  | x  (time only) |  | x  (all) |  |

*Curriculum coverage.*

At the outset of the innovation, Sara and Risa were concerned with curriculum coverage. The philosophy of Storyline requires that students create both character and setting; the teacher does need to plan time for this.

We have a lot less school [fewer days] than the other kindergartens in the district (Sara14June).

[I am concerned about] college students constructing their own knowledge (Risa14June).

*Incomplete plans.*

The five Phases 2-3 teachers who attended the early summer workshop (Gina, Sara, Moira, Risa, and Laura) had time to plan complete Storylines during the June 2008 workshop. In this workshop time, the teachers shared their ideas and questioned each other, and they had time to address their doubts and to get further ideas from each other. As noted earlier, student teacher Diana adapted the plan of her mentor Moira; Kurt planned later that summer, and Kristina adapted Kurt’s plan.

Although Sara had completely planned a Storyline, over the summer she revisited some of the materials provided in class, and she again watched the online videos of a primary 1 teacher in Scotland, Lynda Bancroft ([Learning and Teaching Scotland, 2008](#_ENREF_129)). As a result of revisiting her plans and the resources, Sara decided her Storyline was not captivating. She discarded this well-planned Storyline and instead adapted Bancroft’s Storyline “The Enchanted Forest” for the South Dakota environment. This change of plans presented her with difficulties, as she fully recognised.

I don’t have this Storyline quite as developed as I wish I did. Like the other one is so, I felt so comfortable with it. I had it so thought through (Sara29Aug).

Kurt too had not planned completely. This was not the result of having changed plans but the result of not having participated in the workshop, which had structured planning tools available and time for creating supporting documents. Because he wanted to incorporate technology into his Storyline rather than having students create characters with art materials, he spent several hours simply researching a program he could use for this purpose. Just before the semester began, he realised that students might not know what he expected through using the unusual (for college) Storyline teaching method; he would have to provide much student support.

I’m going to need to structure it in a way that really facilitates. . . . I’m going to have to give them very directed instructions, particularly initially (Kurt20Aug).

It was only after this initial work with his planning and after getting his students started on their project that he realised the need for the materials provided in the workshop. At that point he obtained the workshop materials from me and used them.

*Lack of research in method effectiveness.*

Of some concern to the teachers was the lack of research on the effectiveness of Storyline. Storyline has been used in two recently completed doctoral theses ([Hofmann, 2007](#_ENREF_101); [Mark, 2007](#_ENREF_146)) and two in progress ([Kocher, 2007; Serkan Guney, personal communication, 22 April 2010](#_ENREF_121)), but the effectiveness of Storyline itself has not been published. Storyline does contain elements of recommended “best practices” and can be adapted to incorporate a teacher’s favoured methods or techniques, but as a whole Storyline has not been well studied. Laura’s words are representative of the teachers’ concerns in this:

The challenge is that there’s no research that this really works (Laura14June).

*Grade-level appropriateness.*

Another concern of the teachers was of grade-level appropriateness. The element of imagination and of play and yet of organisation and the possibility for research applications leads to a feeling that Storyline might be most appropriate for older children and pre-teens. Teachers of both ends of student learner ages in this study expressed this concern during the workshop. Below are example remarks from Sara, teaching kindergarten, and from Risa, teaching at the university level. Sara’s perception was helped during the workshop through seeing online video clips of Lynda Bancroft, a primary 1 teacher in Scotland ([Learning and Teaching Scotland, 2008](#_ENREF_129)). Risa’s concern was addressed through testimonials from those who reported on Storyline being used in nurse and police trainings in Europe ([Bell, 2009](#_ENREF_14)). However, these reports were short news items and did not go into details.

My first thought was that it was more applicable to fourth and fifth grades; I wasn’t sure of the kindergarten applicability or implementation thereof (Sara14June).

I am concerned about those students who will think it’s childish or treating them like second graders (Risa14June).

*Assessment, technology, and time.*

Kurt alone mentioned concerns with assessment, technology, and the time he anticipated he would have to spend in marking assignments. He incorporated a computer-based drawing program for building characters. He wanted these drawings posted on the online university course management system Desire2Learn so that he could incorporate into the class work students reading each others’ postings. He anticipated that the assessment aspect, of marking postings and making sure they were appropriate for the character created, as well as the time required to do so, would be demanding.

I am concerned about the subjective nature of grading this, as opposed to something beautiful, like 2 plus 2 equals 5, and you can just mark it wrong (Kurt20Aug).

***Difficulties anticipated in affective course needs.***

The Phases 2-3 teachers revealed doubts which reflected areas which are less easy for a teacher to control – the affective, interpersonal nature of teaching which depends on the ability of the teacher to manage a group which will act cohesively. The teachers’ anticipated difficulties were in feeling nervous about the innovation, fearing negative feedback, wondering if the students would “buy in” to the fictional situation, and imagining difficult student contributions. These are shown on Table 20.

Table 20

*Innovation Anticipated to Present Difficulties in Affective Areas of the Course*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Moira  Grade 4 | Diana  Student teacher | Sara  K at univ. | Gina  K, 1st year | Risa  Univ. | Laura  Univ. | Kurt  Univ. | Kristina  Univ. |
| Feeling nervous |  |  | x | x | x |  |  |  |
| Negative feedback |  |  | x |  | x |  |  |  |
| Student buy-in |  |  |  | x | x |  | x |  |
| Honouring contributions |  |  |  |  |  |  | x |  |

*Feeling nervous.*

Two participants directly used the word “nervous” before beginning their Storyline innovations.

I’m excited to try this and also nervous (Risa14June).

I’m nervous (Sara14June).

Gina did not use this word directly but later communicated having felt nervous about trying Storyline. Gina was in her first year of teaching. Gina’s lack of confidence was not with teaching itself but with teaching in a way in which not all details can be anticipated and planned, which Storyline requires. Reflecting on her experience with at the workshop, Gina compared herself and her teaching style to her former mentor teacher Moira, another participant in Phases 2-3:

I’m not a big critical thinker, and I think that’s probably my drawback. . . . Moira . . . has just the most creative mind ever. . . . It’s one of those things that’s kind of out of my box (Gina22Jan).

*Negative feedback.*

Sara and Risa, teaching students at the two age group ends of those in the study, had the same concern: negative feedback. Sara did not communicate from whom she expected this negative feedback; she is in an independent position professionally, as her supervising principal is housed at another school and the university school is largely independent of university supervision. However, as a lab school, Sara has many other adults in and out of her classroom, and there is a large observation window which overlooks the classroom. Additionally, Sara is quite aware of possible judgements from other teachers in the school district, and she feels quite responsible for student learning. Risa, teaching university students, anticipated possible negative feedback from her students.

I am apprehensive of negative feedback – performativity. . . . I am compelled to make sure there’s rigor in my program (Sara14June).

What if my students’ attitudes are: “This is weird. She’s weird.” [Our] students generally are pretty traditional and difficult to get out of their expectations (Risa14June).

*Student buy-in.*

Teachers of both ends of the student learner ages, kindergarten and university, anticipated difficulties with student “buy-in” to the process of learning with a Storyline structure. Gina thought students might not get involved in creativity; this possibly reflected her own self-confessed orientation away from creative thinking. Kurt elaborated on the possibility of “saboteurs,” which might reflect his previous experiences teaching students attending alternative schools.

I was concerned that they would just want to be done with it. You know, get it and slop something on (Gina6Nov).

There are going to be some students who are, you know, natural group saboteurs, who . . . create some felonious-looking image with tattoos and scars and beards. . . . With eighty-some students total who are going to be involved in this project in my sections, there are bound to be a few who resist the assignment initially and try to figure out some way to subversively undermine the validity of the project (Kurt20Aug).

Although Kurt anticipated difficulties with the “group saboteurs,” he anticipated that the presence of the “felonious-looking” characters could result in effective learning. He looked forward to seeing educational psychology principles working out within the setting of his classroom. Kurt’s perspective is possibly due to his previous experience as a teacher in alternative schools.

What will be interesting, over the course of time, is how they [the saboteurs] carry that through. . . . Hopefully, those people will develop an appreciation for felonious-looking people because their creation will be one. I’m fascinated with how that all is going to play out (Kurt20Aug).

Most of the teachers anticipated both benefits and difficulties in both objective and affective course needs. The anticipated benefits generally were those which are not addressed by textbooks, such as providing concept application and raising rigor, in addition to giving encouragement and challenge to the teachers. The variety of anticipated difficulties outnumbered the anticipated benefits, but overall the teachers anticipated that the strength of the benefits would outweigh the difficulties they might experience.

**Teacher Identity During an Innovation: Process and Experience**

The Phases 2-3 teachers were implementing Storylines in which their students created characters who acted within settings; through those characters the students explored the curriculum. Because some of what occurs in a Storyline is unpredictable, there is always some uncertainty during a Storyline. This section explores the unplanned events, the difficulties, and the satisfactions the teachers experienced as they innovated with Storyline. Also included in this section is a recognition of events which the teachers anticipated and the realisation or lack of realisation of those anticipations.

**Spontaneous formation of a professional learning community.**

This research resulted in the unforeseen event of the participants suggesting meeting together. This became in essence an informal professional learning community. The participants were interested in hearing of each others’ progress and in sharing their thoughts regarding their Storylines. This resulted in participants meeting together three times during the school year: October, February, and March. The group also met together in the beginning of the second year of innovation.

These casual meetings were held at a pub or coffee bar in which the participants shared their Storyline experiences. The teachers were quite open about conundrums and difficulties, and they celebrated each others’ victories and accomplishments as well. One of the reasons teachers gave for attending the workshop was to socialise; the formation of this discussion community extended the opportunity for the teachers to socialise.

This spontaneous community was perhaps quite unusual in that the participants ranged in teaching experience from a student teacher through teachers with nearly 30 years’ experience; they taught grades K, 4, and post-secondary. This was not a group which looked at problems in a practitioner-with-expert format; this group functioned as friends sharing triumphs and difficulties. There was no agenda other than sharing with each other. This attitude of mutual enjoyment, sharing, helpfulness, and inquiry carried over into the meetings which occurred in the following term of the school year. Like Grimmett and Crehan ([1992](#_ENREF_85)) discussed, the participants were supportive in encouraging each other in their innovations.

In the first meeting of the group on 17 October 2008, both university and K-12 faculty shared their difficulties, asking for input from each other. Margolis ([2008](#_ENREF_145)) remarked that colleagues were more effective agents of change than were outsiders; in this group, the teachers asked for help from colleagues. The university teachers were no less willing to share their struggles than were the K-12 teachers. Below are representative excerpts, most of which show particular teachers repeatedly expressing difficulties within the 1.5 hour meeting.

One of the things that I’m trying to figure out how to do is…. one of the challenges, I think, is. . . other thing that I’m struggling with, or dealing with, trying to figure out, is. . . . And I’m not quite sure how to facilitate that. . . . I’m very open to ideas. (KurtPLC17Oct)

My struggle is related [to Kurt’s] . . . I’m not quite sure what to do with that . . . . I’d like to figure out a way to. . . . I can’t keep track (KristinaPLC17Oct).

So now I’m thinking, what will fit?. . . Can I? Can’t I? Will it just be contrived? Will it be, “Plug the name in”? So, I’m feeling stuck (RisaPLC17Oct).

I don’t know what to do (SaraPLC17Oct).

The professional learning community meeting also provided the teachers with the chance to share reflective thoughts about their own teaching and feedback from the students, and they laughed with each other over classroom developments. Kristina quoted an anonymous survey her students completed regarding their opinion of Storyline teaching, about a third of the way through the school term; Risa told of Storyline developments, her students’ reactions, and her own surprising response:

[Student quote]: “I never slept in class yet, and it’s the only class I’ve never slept in” [general laughter] (Kristina, PLC17Oct).

Risa: The next week I had all those disabilities on index cards and I just randomly, they were in a bag, they passed the bag around and they just pulled it out and I said, “Now that’s what your child has been diagnosed with.” And they all went, “Ahh. What?” You know. And it was interesting, because after class they all came up . . . and this girl said, “My child has foetal alcohol syndrome, and I don’t know about that.” And I said, “Well, -”

Moira: It wasn’t me! [giggles]

Risa: I know! It’s like, “Aaaah.” And so she, I sensed that she was really, like almost offensive [offended]. Like, if I’m the mother, then that means that I was bad. I said, “You know, she could be adopted” [general laughter]. I was like, quickly giving her an out or something, it was like, so odd, after I thought about [it]. And she goes, like, “Oh, okay” [general laughter] (Risa, PLC17Oct).

Sara later commented on the first professional learning community meeting. She revealed insight into the culture of schools, which does not usually facilitate teachers sharing triumphs and difficulties with each other, and which reinforces the Midwestern culture of modesty in excitement with achievements:

[If I share my excitement over something with other teachers], they’re just kind of tolerating your [my] enthusiasm. . . . [The others in our Storyline professional learning community] were very animated and enthusiastic about what they were doing. And sometimes, I think, as professionals we get a little hesitant about sharing our stuff, either because you feel like, “Oh, I don’t want to be bragging here,” you know, or even, “What I’m doing isn’t all that special,” but instead it just kind of gave everybody a [way] of sharing, so they could feel—it wasn’t so much about them, it was about what they were doing, in a comfortable way of sharing that enthusiasm. . . . The enthusiasm was very obvious (Sara20Nov).

**Difficulties encountered during innovations.**

Some of the teachers in Phases 2-3 expressed frustrations as they worked through their first implementation of their innovations. Again these difficulties fit into two categories of situated work: objective course needs, or the elements demanded by or suggested by the course itself, and affective course needs, or the elements which were impacted by the needs of the people involved, either the teacher or the students.

***Difficulties encountered in objective course needs.***

Table 21 depicts the teachers’ difficulties with course needs and the relationship of those which were anticipated and those which were not. Teachers anticipated difficulties in the areas of curriculum coverage, planning, lack of research, grade level appropriateness, assessment, technology applications, and time. Each of these is discussed in separate sections following Table 21. Not all of these anticipated difficulties became actualities. No objective areas were discovered to be difficulties that were not anticipated by at least one participant.

Table 21

*Difficulties Encountered in Objective Course Needs*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Moira  Grade 4 | Diana  Student teacher | Sara  K at univ. | Gina  K, 1st year | Risa  Univ. | Laura  Univ. | Kurt  Univ. | Kristina  Univ. |
| Curriculum coverage | Antici-pated |  |  | x |  | x |  |  |  |
| Found |  |  |  |  | x |  |  |  |
| Incomplete plans | Antici-pated |  |  | x |  |  |  | x |  |
| Found |  |  |  |  |  |  | x |  |
| Lack of research | Antici-pated |  |  |  |  |  | x |  | x |
| Found |  |  |  |  |  |  |  |  |
| Grade-level appropriate | Antici-pated |  |  | x |  | x |  | x |  |
| Found |  |  |  |  |  |  |  |  |
| Assessment  Technology  Time | Antici-pated |  |  |  |  | x  (time) |  | x  (all) |  |
| Found |  |  | x  (time) |  |  | x  (time) | x  (all) | x  (time, assess.) |

*Curriculum coverage.*

Risa again questioned whether or not her students would encounter the same course content they would if she followed her alternative or default mode of lecturing. At the same time she questioned the validity of her doubt, knowing that she wouldn’t necessarily get through content in an ordinary term anyway.

I guess one of my concerns is, are they going to see, are they making connections to the content, you know, to the course content and I won’t know that for awhile. But then again, when you’re teaching traditionally, you don’t know that until mid-term or until the end of the semester, so I don’t know why I’m more worried about them getting it now than I did in the past, teaching traditionally. So I don’t know (Risa29Sep).

I worry about the Praxis [teacher licensing exam] . . . and making sure that they have the content that they need to do well on the Praxis. So there’s some pressure to cover some content that you know they will be tested on (Risa24Nov).

Moira and Diana talked about addressing curriculum issues in a Storyline, but their point was that they integrated subject matter into the story. Moira acknowledged that a teacher could examine this issue; her remark reflects her initial reason to participate in the Storyline workshop, of needing personal encouragement to enjoy the teaching and to relax a bit on her concerns with the requirements of NCLB. However, she did relate recent high-scoring test results from the students in her class.

If you want to get hung up on that, like, “Oh, are we reading?” It’s science, social studies, . . . you can kind of beat yourself up: “Am I reading? Am I doing this? Or am I really just having so much fun that [I’m not teaching those things]?” (Moira&Diana).

Kristina mentioned that she needed to remind students of the objectives.

I did find that I needed to, partway through the semester, say, okay, there is a serious side here. . . . . I would have to give them lists of things they would have to utilise and incorporate into their plan of action or their project for the day or for their work for the day. If I didn’t say, “Address each one of these six things,” it would be too soft or too loose (KristinaPLC20Feb).

Moira added on to Kristina’s comment:

There were times when I felt a little bit like that—okay, this is serious, do related activity x, y, z—too. I suppose it’s the teacher in us: “Are they really getting this?” (MoiraPLC20Feb).

*Incomplete plans remaining a difficulty.*

Kurt found that his incomplete plans at the beginning of the term, though they generally worked out, were not complete enough for his ideal comfort level. After three weeks of teaching with Storyline, he returned to the issue of anticipated and realised difficulties.

The technology was sort of a superficial challenge. It was a challenge that can be overcome. Probably the on-going challenge will be to provide assignments each week that will prove to be stimulating to my students (Kurt25Sep).

*No research proving effectiveness; grade-level appropriateness.*

None of the teachers communicated difficulties with the areas of planning, prior research, or grade level appropriateness during the time that they were actually using their Storyline curriculum plans.

*Assessment, technology, and time.*

Assessing student work on this kind of assignment proved difficult, particularly for the university faculty members who felt they needed to mark based on demonstrated understanding of the concepts.

I do look at all the entries that they make each week, and grade [mark] them based on how they incorporate the different concepts into that. I probably spend close to six hours a week just in grading those (Kurt, PLC17Oct).

I have them read about each others’ [teens] on the discussion threads [on the web-based course management system D2L]. . . . It’s hard to grade [mark] that (Kristina, PLC20Feb).

Kurt’s anticipated difficulty of using technology did cause him to spend extra time simply working with this. Sara had not anticipated the time necessary for developing characters.

I mean it’s frustrating when you realise, “I’m going to have to dedicate a day to –.” Basically last Friday was an entire day just devoted to getting all those photos up and linked (Kurt25Sep).

This is going more slowly than I had thought (Sara23Sep).

I’ve learned through this that I have to slow down (Laura, PLC17Oct).

Like Laura said, it takes time (Kristina, PLC17Oct).

***Difficulties encountered in affective course needs.***

Some of the teachers mentioned before beginning their innovation that they felt nervous or that they thought difficulties would arise with negative feedback or with student buy-in to the concept of working with characters and settings in their learning. During the course of the actual implementation of their innovations, no teacher mentioned nervousness, negative feedback, or lack of student buy-in with working with characters. The difficulties which they did encounter were related to student buy-in; they were difficulties with honouring student contributions. These contributions were those arising from the nature of Storyline, which invites student contributions to the developing story. Only Kurt anticipated that there might be “natural saboteurs,” but he did not mention that he anticipated that he might have to manage the student contributions. The only other difficulty mentioned which had not been anticipated was one issue with department politics. Table 22 compares the comment categories in affective course needs—feeling nervous, getting negative feedback, concern over student buy-in, concern over honouring student contributions, and issues in departmental politics. Each is elaborated upon in separate sections following Table 22.

Table 22

*Difficulties Encountered in Affective Course Needs*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Moira  Grade 4 | Diana  Student teacher | Sara  K at univ. | Gina  K, 1st year | Risa  Univ. | Laura  Univ. | Kurt  Univ. | Kristina  Univ. |
| Feeling nervous | Antici-pated |  |  | x | x | x |  |  |  |
| Found |  |  |  |  |  |  |  |  |
| Negative feedback | Antici-pated |  |  | x |  | x |  |  |  |
| Found |  |  |  |  |  |  |  |  |
| Student  buy-in | Antici-pated |  |  |  | x | x |  | x |  |
| Found |  |  |  |  |  |  |  |  |
| Honouring student contributions | Antici-pated |  |  |  |  |  |  | x |  |
| Found | x |  | x | x | x | X | x | x |
| Department politics | Antici-pated |  |  |  |  |  |  |  |  |
| Found |  |  |  |  |  |  |  | x |

*Honouring student contributions.*

One of the tenets of teaching with Storyline is that the teachers construct the learning situation so that students participate in some decision-making, such as inventing characters and some of the situational episodes in which the characters participate. In this study, 7 of the 8 teachers mentioned some struggle they had related to honouring the direction the students went whilst thinking another direction would be a better idea. The teachers all decided to let the student contributions stand as they were and to have the students work with those situations which they created. These experiences show that the teachers in this study were operating in the communicative design paradigm as discussed by Greven and Kuiper ([2007](#_ENREF_84)); the teachers allowed for democratic decision-making and shared responsibility for learning with their students. But as Hofmann ([2007](#_ENREF_101)) pointed out, “It is not always easy to allow pupils ownership of their learning within the Storyline” (p. 68-69). It is quite relevant to note that the only teacher who did not express difficulty with honouring student contributions was the student teacher, who had no prior experience teaching. The participant teachers shared in the professional learning community meetings these episodes of working with slightly difficult student contributions. Below is an example of the struggle which Moira experienced when the direction the student wanted to go in was slightly uncomfortable for her.

There was one child [in the castle Storyline] who didn’t want the shoebox [for his diorama setting], he wanted a big double box, you know, and he’s going to have this torture room, and you go down into the basement—and you know you’re kind of like, eeh, well, (Moira, PLC17Oct).

Kurt alone anticipated that “sabotage” might happen. Due to the nature of the playful sabotage, he did decide to ask the students to not go too far with their play, which bordered on being offensive to other students. Kurt felt that allowing their direction to proceed would block responsible modelling of classroom management on his part. Like Moira, he experienced a feeling of awkwardness upon hearing the students’ ideas. However, Kurt did not insist on complete changes, and the other students in the class did not appear to take the playful character identities seriously.

One of my teens was Jesus, and in fact I had to tell them [the creating student pair] to back off on it, because it wasn’t “Hay-soos”, it was “Jesus”. Single mom, Jewish, the whole thing starts to develop here [general laughter]. . . . Finney McFinnegan [general chuckles], whose Scottish parents drink and fight, I had to calm those students down too, racial stereotyping, even if it was Scottish (KurtPLC17Oct).

Sara did not feel she had to intervene as Kurt felt he had to. In Sara’s case, she merely observed her kindergarten students work through each others’ contributions. As is typical of a Storyline, Sara designed her Enchanted Forest so that students could choose their own characters. She related in the first professional learning community meeting that allowing the choice brought controversy into her class, which she then managed through letting the students work out the resolution. In this excerpt, her aide, Melanie, also contributes her observation.

Sara: There’s definitely a real group of them who are very into fantasy. And there are some who think it’s wrong. Some of the animals don’t belong in a forest and it bothers them. . . .

Kurt: So how does that get resolved?

Sara: We just kind of let the kids discuss it. And their big thing that they keep coming back to—it’s an enchanted—and I gave them the name—it’s an enchanted forest. That means that it’s magic. So that’s safe. Even though that there’s no such thing as magic. They just kind of let it argue, and we just let it go—is there magic or is there not magic?

Melanie: It’s not a fully decided conversation. They’re still having that. I can definitely hear that conversation come up again (Sara, PLC17Oct).

In a later professional learning community meeting, Sara told of the significance of one character on the class as a whole. This character became the most central to the culminating event of the Storyline, an opera. The children wrote the opera, and Sara encouraged the opera plot to flow from the students.

[The students] have had that whole discussion about the bat [“Monster Bat”]. One of the children, one of the little boys picked a bat to be his character, and if bats are good or bad. That became a very emotional conversation. So that became our main story of our opera (Sara, PLC20Feb).

Kristina also encountered difficulty with student contributions. She told of how she started to solve a problem for her students but found instead that the students already had solved the difficulty.

I told my students . . . that we would all be going to the same high school, Wenona High School. But obviously not all of them listened, because I have a student in Chicago and a student in LA [and one in Georgia]. . . . Two teams got together to do a team project, their fictitious teens. And so I said, “And if you’re in LA, you’re going to have to pretend like you’re just spending a week in South Dakota.”. . . They said, “This is - we’re doing it Internet. Our community service project has got an Internet technology link, and we know people in Chicago, because our aunt lives there,” and so they had it all worked out (Kristina, PLC20Feb).

Kristina observed during two of the three semesters she taught with Storyline that one or two of the student pairs were not functioning as they needed to for the sake of the assignments and for the sake of student learning. She solved this by altering the assignments to re-arrange student pairs. Kurt also paired students, but he did not observe any pairs which were not functioning, as Kristina did.

I had two students that were partners who didn’t like each other and they weren’t getting along, and they weren’t working well. . . . So then I split them up, so then each one of them got the opportunity to work with other people, and that worked well (Kristina, PLC20Feb).

I put them together thoughtfully, but there, there’s going to be a personality conflict with one of my groups already. I mean, I’m pretty sure. One will care a lot to try, but will get disgusted [with her partner] and the other could give a toot (KristinaPhase3).

Risa and Laura relied on their students to do certain assignments on a certain schedule; when the students did not follow through as their teachers expected, that affected their planning.

That [student procrastination] really shortens up the length of time that we have for class, and so that really interfered with getting into it, a lengthy Storyline kind of activity (Risa24Nov).

I told them to bring their Storyline back on Tuesday after spring break. That was a mistake. . . . They forgot all about what they were supposed to be doing: “What is Storyline again?” . . . I had individual conferences with each of them to try to help them along with their Storyline a little bit, since they were so confused after spring break (Laura, PLC27Mar).

*Department politics.*

Kristina’s department head asked her to teach a section of Educational Psychology without giving her much preparation time; when she did take the class on, she adapted Kurt’s plans for the class. Within the first four weeks of teaching the class, she discovered that she enjoyed the result so much that she wanted to teach it the next semester as well. Although she refers to department politics here, she does not express in this quotation her ongoing frustration with the ineffective department leadership, which possibly influenced her comment.

I hope it’s as much fun if I get to do it a second time and I do want to. It’s interesting that I’m as engaged as I am in it, as I am knowing it’s not my course [since Kurt was the lead teacher in this]. It’s all department politics. That would make me angry, to not be able to teach this again. I feel I should be rewarded for doing really well. It’s arrogant of me to say that, but I think I am doing it really well. I was asked to do it last minute. That’s politics (Kristina23Sep).

**Anticipated and subsequently realised benefits in objective areas of professional identity.**

Teachers anticipated and subsequently realised benefits from initiating innovations in their classrooms. Some of these fit into the objective realm, such as having an alternative to lecturing for three hours or aligning teaching with philosophy. Anticipated benefits which occurred also included those in affective areas, such as encouragement in teaching and having a challenge to meet. Table 23 depicts the benefits the teachers anticipated and subsequently realised in the area of objective course needs: the teachers’ desires for students to apply concepts, for the course rigor to be raised, for a better alignment with teaching philosophy (both personal and departmental), and for providing an alternative to lectures. These objective course needs are each examined separately in sections following Table 23.

Table 23

*Anticipated Benefits Found in Objective Course Needs*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Moira  Grade 4 | Diana  Student teacher | Sara  K at univ. | Gina  K, 1st year | Risa  Univ. | Laura  Univ. | Kurt  Univ. | Kristina  Univ. |
| Application of concepts | Antici-pated |  |  |  |  |  | X | x | x |
| Found |  |  |  |  |  | X | x | x |
| Raise the rigor | Antici-pated |  |  |  |  |  | X | x |  |
| Found |  |  |  |  |  | X | x |  |
| Alignment with philosophy | Antici-pated |  |  | x |  | x | X |  |  |
| Found |  |  | x |  | x | x |  |  |
| Alternative to lecture | Antici-pated |  |  |  |  | x | x | x |  |
| Found |  |  |  |  | x | x | x |  |

*Application of concepts:**Realised anticipated benefits.*

Three of the university teachers anticipated right at the beginning of their planning that through the Storyline approach to the curriculum that their students would be able to apply the theoretical course concepts to situations which, whilst not real, were at least somewhat realistic. All three of these teachers noted in their Phase 3 reflections that this application did happen.

I had a sense that it would work, and it definitely did. And it was probably even better than I expected that it would be over the long haul (KristinaPhase3).

What I had hoped for was that students would . . . find that the hands-on experience helped them to problem-solve or deal with issues that affect teachers in the real world, and it did accomplish that (LauraPhase3).

It encouraged the students to talk about the concepts that we were learning and apply them to a fictitious situation (Kurt30Oct).

One of the hoped-for benefits, that students would make connections with the concepts . . . . I think is happening (KurtPhase3).

*Raise the rigor, align teaching with philosophy, and provide an alternative to lecture: Realised anticipated benefits.*

The teachers did not directly address these issues in their reflections on what was happening in their classrooms, though the products are obvious in two of these categories, simply from the innovations themselves. The teachers who had mentioned they wished to align their actual teaching more with their constructivist philosophy did so; the teachers who wished to veer away from lectures did so. Regarding raising the rigor of the class, teachers noted that student work was better than they expected. This idea is also addressed in the sections below on confidence in and quality of student work. Kurt related two conversations with former students who told him they enjoyed the Storyline. Although he was pleased that his students remembered and enjoyed the classroom experience, he remained unsure as to the degree to which they retained the learning, since he had no empirical evidence of knowledge retention.

So of course the next question is, “Yeah, but are they, is their learning from that project enhanced?” And I can’t tell you that. I believe it is, the fact that they’re remembering it, but what about it are they remembering? You know. Is it just that fun thing of, um, living in this fictitious world of creating images, or are they actually remembering some of the concepts as they relate to their teen? I’m not sure. Hopefully the latter (KurtPhase3).

**Anticipated and unanticipated realised benefits in affective areas of professional identity.**

The teachers who anticipated benefits in the affective areas of their professional identity did realise these benefits. These were in areas of personal learning, the opportunity to socialise professionally, finding encouragement, and having a chance for professional challenge and refinement of plans. Because teachers who did not anticipate these benefits also realised benefits in these areas, the tabulated results are combined. The items in Table 24 reflect only those affective areas which were originally included in teachers’ anticipated affective benefits, as were shown in Table 17. Each of these professional identity benefits is examined separately in sections following Table 24.

Table 24

*Anticipated Benefits Found in Affective Course Needs*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Moira  Grade 4 | Diana  Student teacher | Sara  K at univ. | Gina  K, 1st year | Risa  Univ. | Laura  Univ. | Kurt  Univ. | Kristina  Univ. |
| Personal learning | Antici-pated |  |  | x | x | x | x |  |  |
| Found |  | x | x | x | x | x | x | x |
| Socialise | Antici-pated |  |  | x |  | x |  |  |  |
| Found | x | x | x | x | x | x | x | x |
| Encouragement | Antici-pated | x |  |  |  |  |  |  | x |
| Found | x | x | x | x |  |  |  | x |
| Provide challenge and opportunity for refinement | Antici-pated |  | x | x |  | x | x | x |  |
| Found | x | x | x | x | x | x | x | x |

*Personal learning/professional development.*

Laura anticipated that the workshop would allow her to develop her knowledge of Storyline as a teaching tool (as recorded on Table 17), but she did not anticipate that Storyline would also teach her other things about her own teaching. Like Laura, Kurt mentioned that his Storyline application was influential on his own learning and that he expected this to continue. The other teachers did not specifically mention this aspect of developing their professional abilities related to their innovation.

[Storyline] really helped to just be a little more intentional about what I teach and to bring connections between the different lectures or the different class sections that we’ve had (Laura20Nov).

I think the Create-a-Teen opens the door of doing something differently that I can learn from. And I think that my learning curve is going to be fairly long on this (Kurt30Oct).

*Socialise.*

This unanticipated benefit was examined in the section above on the spontaneous formation of the professional learning community.

*Encouragement.*

At the beginning of this study, only Moira related that she needed encouragement. She had become discouraged by NCLB issues and had been further occupied in planning for the new school, and she wanted encouragement to return to creativity in teaching. She did get this anticipated benefit; it was partly helped by the fact that she taught summer school in which she had the option to work with the students outside of NCLB requirements. The following term Diana, as Moira’s student teacher, reproduced Moira’s original Storyline. In the middle of this iteration, Moira observed,

We’re having so much fun that it’s not work (MoiraandDiana).

Kristina also expressed a “fun” factor which influenced her to such a degree that she found herself telling of class developments with those outside of teaching:

My mother, my husband, my two good friends are all asking me, how’s the new course going? They know I’m enjoying it and want to share (Kristina23Sep).

Sara noted the encouragement provided by the creative Storyline teaching. Like Moira, Sara needed a creativity factor in her teaching to truly enjoy her work. Sara talked of this in interviews which took place a year apart from each other.

Creative and energising; uncomfortable and I’m feeling some tension but still it’s energising (Sara23Sep).

I do feel that I’m much more energetic when I’m being creative. Storyline kind of gives me that (SaraPhase3).

Gina did not have this same need for creativity. Quite to the contrary, she noted that the creativity factor made her uncomfortable. Below is an excerpt from an interview with Gina which expressed her discomfort:

This is not my thing. Like just to be creative, I hated it in school. I hated when, “Okay, you have no guidelines, you just do this.” That was not me. I was, “Okay, what do I need to do? How do I need to get it done?” And so it’s nice for me to get out of my box. . . . That’s something that I want to change a little for my kids (Gina6Nov).

In noting Gina’s remarks, it is perhaps also significant to note that at the time of the study she was in her first year of K-12 teaching. Gina identified that her lack of comfort was related to her lack of desire for creativity, but this lack of comfort could also be related to her lack of preparation for design knowledge and expertise, which has been identified as an issue for some teachers ([Greven & Kuiper, 2007](#_ENREF_84); [Letschert & Grabbe-Letschert, 2007](#_ENREF_138)). However, at the same time of noting Gina’s lack of experience, Diana had even less experience than Gina but was quite comfortable with Storyline. Perhaps her comfort was related to having been able to work closely with an experienced teacher during her Storyline implementation.

*Need for challenge and an opportunity for refinement.*

Along with a need for creativity, or perhaps another dimension of creativity, is the issue of challenge. Before they began their innovations, Kurt and Sara anticipated that their Storyline innovations would provide them with an opportunity of change and challenge, which they enjoy. They said at that time,

[Doing new things in the classroom] is appealing to me (Sara29Aug).

I really like new challenges. I really like changes (Kurt20Aug).

Later, after the innovations, these teachers reflected to say that they were continuing to refine their Storylines. The teachers’ words and level of enthusiasm implied that with a major change to their teaching, such as using the narrative Storyline, they were quite interested in the process and product, and they were likely to continue the innovation and refine the plans for the next iteration. Risa developed the shortest initial Storyline innovations. Risa changed the structure slightly for her second iteration; in retrospect she preferred her original approach.

For some of the teachers involved, one innovation led to another. The Phase 2 teachers who continued into Phase 3 with their innovations all tinkered with their plans in some way. Kurt’s words express the philosophical attitude the teachers needed in order to continue to work with their creations:

I’ve got the basic structure, the foundation, down; now I look forward to tailoring it and, and improving it with the coming semester (Kurt30Oct).

Moira passed the Storyline plan on to her student teacher Diana, and together they added more to Moira’s original plan and invited guest speakers. Laura experimented with process and order of presentation; Sara altered plans to fit the personalities of her new group of students; both Sara and Kristina decided to put more emphasis on setting; Kristina refined plans; Kurt added Facebook as a forum for the created teens to contribute to in character. Some comments provided evidence that at the same time that the teachers were working with a current innovation, they were also thinking of the coming term. A conversation between Moira and Kurt at one of the professional learning community meetings demonstrates that as early as February Kurt was thinking of alterations he would make for the following September:

Moira: So you’re dreaming it up [incorporating the social networking site Facebook into your Storyline] right now; you haven’t started?

Kurt: Well, I’m doing this Create-a-Teen thing, but I was thinking that one piece of that, that I could be doing [is having my students create Facebook pages for the teens] (Kurt, PLC20Feb).

Kurt attempted to add the virtual world Second Life to his Storyline plans. After exploring this option with the university technology personnel, they together concluded that the university did not have the technology capability to handle his needs. He also explored collaborating through Second Life or another technology application with an Educational Psychology faculty member at another university. Kurt settled on using Facebook to support his third iteration of his innovation. His students maintained Facebook pages and posted to them in the role of the created teens; Kurt maintained a Facebook page in the role of a school counsellor. All of the created teens were Facebook friends with the created counsellor and interacted with each other in this environment.

**Unanticipated benefits realised in affective areas.**

Teachers in this study experienced benefits which they did not anticipate in affective areas. These are the benefits which came as a surprise to these teachers, many of which were found due to the Storyline method which does rely on some degree of spontaneity in implementation. Table 25 names nine unanticipated, affective benefits of the innovations and shows which teacher commented on those benefits. Each of the benefits is examined separately in the sections following the table.

Table 25

*Unanticipated Benefits Encountered in Affective Course Areas*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Moira  Grade 4 | Diana  Student teacher | Sara  K at univ. | Gina  K, 1st year | Risa  Univ. | Laura  Univ. | Kurt  Univ. | Kristina  Univ. |
| Classroom interactions | x | x | x |  |  | x |  | x |
| Classroom management |  | x | x |  | x | x |  | x |
| Confidence in student work |  | x |  |  |  |  |  | x |
| Quality of student work | x |  | x | x |  |  |  |  |
| Parent involvement | x | x | x | x |  |  |  |  |
| Recognition and elitism |  |  |  |  |  |  |  | x |
| Desire to share |  |  | x |  | x | x | x | x |
| Continued teaching change |  |  | x |  |  | x | x | x |
| Feedback from students | x | x | x | x | x | x | x | x |

*Classroom community interactions.*

The teachers commented on the unexpected benefits which occurred in their classrooms regarding student interactions. These were not planned by any of the teachers involved. Sara was particularly struck by this aspect; one of the boys in her classroom had Asperger’s syndrome and although an unusual child, he quickly became one of the group due to Storyline developments which Sara neither anticipated nor controlled.

It was really a wonderful way to create a classroom community. They got to know each other and respect each other and, and have different insights for each other really quickly. Already they know each other much better as a group than other classes that I’ve had. . . . I don’t really have invisible children this year, and I think I would attribute that to the Storyline (Sara20Nov).

This boy who was pretty much a social outcast inadvertently . . . developed this central character, this other one that the other kids became fascinated with. I think that bringing this classroom community, the class community about this whole play then, that they made, the plot parallel, how the animals became friends and then how the friendship in the kindergarten class became so important. I don’t think I had anticipated, I’m sure not, I am sure I had not thought about what it would do for the social interactions of the children (SaraPhase3).

Moira and Diana also experienced unexpected community-building in their classroom. In their case, it was a quiet boy whose character also inadvertently drew him into the classroom limelight. Both teachers spoke of this unexpected classroom interaction.

I have in my classroom, oh, he’s just the sweetest little guy, he’s a little Native American boy. And at conference time, his mother was sharing with me that he’s always been quite the introvert. But with doing the whole Camelot thing, she said, it’s just bringing out this whole other side of him . . . . The [other] kids were all just so amazed (Moira, PLC20Feb).

[This boy] chose to be the torturer of the castle. It just kind of shocked all of us. “Robert? The torturer?” [laughter]. But he had so much fun with it. And he got so much attention with it (DianaPLC20Feb).

The observation of Storyline teaching affecting classroom interactions positively also occurred at the university level. Kristina mentioned that a student wrote in a course evaluation that she taught the students how to work in groups. Regarding this, Kristina said that the only related interactions she could think of were the Storyline assignments. The work itself required student cooperation; Kristina said she did not teach them how to work in groups.

*Classroom management: Teacher leadership not required.*

Related to the issue of classroom community interactions is the issue of classroom management. Teachers remarked on the unanticipated benefits that their innovation had on this area of teaching, noting that they did not have redirect students to on-task behaviours. Students at both primary and university levels appeared more concerned with doing the task than with earning points toward a grade. Laura had prepared a classroom interaction management technique often used at the primary teaching level, but she found that it was nearly useless because of the desire on the students’ parts to participate.

They’re interacting and they’re participating and I don’t really have a choice [as to how to manage classroom interactions] (Laura24Sep).

[The students were] on task, doing what they were supposed to be doing (Diana, PLC27Mar).

I’m still waiting for a student to say, “Why should we do this? Am I getting a grade for this?” (RisaPhase3).

Teachers at all levels found that appropriate conversation and work seemed to flow from the students. The excerpts from university teachers Kurt and Kristina demonstrate that the students were interested in developing the work beyond the teachers’ requirements.

I almost didn’t have to throw in the incidents, because they were just coming naturally (MoiraPLC17Oct).

It was pretty fun just to listen to them just talk about the different parts. . . . They got into it . . . with the clothing and stuff, about the skins, buffalo skins and . . . with the huts and stuff, you know, how do they cover it? And they came up with the skins again, and twigs and straw and stuff (Gina6Nov).

I had one student ask yesterday, “Will there be plot? Is there going to be a plot developing?” And I said, “Yes.” And it ended up his question was, he was looking to work plot into his student’s story. And he wanted to be careful that he didn’t work plot in if I was going to be working plot in and the two would conflict. So I did say that it was fine to work some plot in, and yes, I would be introducing variables but I didn’t think that the two would necessarily conflict (Kurt25Sep).

One of them [the random events written on slips of paper] said they would get in trouble because they took an inappropriate movie on an athletic bus. And last year [term] one of my students who got that said, “That would never happen. My teen would never do that” [general hearty laughter]. And then they had to figure out what the, how the [movie got into the pack] (KristinaPLC27Mar).

*Confidence in student work.*

Kristina particularly was surprised at what she could incorporate into the class due to the Storyline structure; she realised that many of the principles she taught during Educational Psychology were incorporated naturally into her class. She had not participated in the workshop, so she had not previously reviewed these principles with the other teachers.

They’re doing things that are so curricularly sound, . . . their authentic conversation, experimentation, practice with ideas, that they’ll have basis for understanding (Kristina, PLC17Oct).

*Quality of student work.*

One of the teachers’ discoveries and satisfactions from innovating with Storyline was the discovery that their students often went beyond their expectations in doing assignments. This could well be attributed to the aspect of attaching a measure of authenticity to the work.

They actually expressed that, instead of just listening to what it [a special needs classification] was, they demonstrated understanding (Risa29Sep).

They’re working with the ideas. I’ve had them define terms like zone of proximal development or why is Vygotskian theory considered socio-cultural. I had never—there were only three I would ask to clarify. They articulated it perfectly. I have never had that happen before (Kristina23Sep).

What’s coming out of their mouths is so much more (Gina6Nov).

Holy cow, . . . I was amazed at the amount of information that they gave (Risa, PLC17Oct).

Diana: You can see her drawing and her box [both of setting]. . . . She’s holding her box [in the photograph]; you can see like her little garden with the carrot, you can see a little bit of the orange and her tree, and she’s got a little sack full of apples that are tipped over. But look at like the [detail and reproduction].

Laura: Just exactly like how she envisioned it.

Diana: Like her drawing (Diana, PLC27Mar).

*Parent involvement.*

Teachers said that their innovation increased parent involvement. Moira and Diana both mentioned a conversation with the mother of an introverted student; this parent-child pair researched, made, and brought to class a prop for the student’s setting.

Him [sic] and his mom had been looking at medieval stuff on the Internet, and they made this, they found this little pattern, it’s a catapult. And so he was all proud of his catapult (Diana, PLC27Mar).

Both Sara and Gina said that students wanted to share with their parents the Storyline events; Sara’s comment is representative.

Something that has changed for me is the involvement of parents. This is a great vehicle to—the kids communicate better with their parents, they’re more excited about it, newsletters and different things as things have happened, bringing parents in. I think it’s the emotional attachment to their characters and to the story. So that’s been a really, really positive thing (Sara, PLC20Feb).

*Desire to share.*

Several of the teachers in Phases 2-3, during and upon completing their initial innovation with Storyline, felt so strongly about their successes that they could envision applications in many other areas of teaching. Laura’s words perhaps demonstrate their feelings:

I want to share it with the world (Laura20Nov).

The desire to share was not true of all the teachers; Gina wanted to have a Storyline workshop at her school for her fellow teachers but did not want to put this forward as a first year teacher. Moira also wanted her school to take Storyline on but did also did not want to “push” it onto her fellow teachers. Diana, in Phase 3 a first-year teacher in a demanding environment, likewise was not inclined to push Storyline.

However, the other five Phase 2-3 teachers did get involved in sharing Storyline. Among the ways the other teachers approached “outreach” before their second year began were:

* Kristina presented at the triennial Storyline International conference;
* Kristina shared the online support she arranged for her Storyline in an in-university poster session on online teaching;
* Laura, Risa, and Kurt started a journal article;
* Laura and Sara began preparing conference presentations;
* Kurt explored collaborating with an education faculty member in another school; and
* Kurt and two of his students presented their Storyline experience at a conference specifically aimed at improving college teaching.

Aside from these intentional, tangible efforts at sharing their successes, the teachers noted interactions with those around them which inspired their fellow teachers. Sara told of an after-school program teacher influenced by both Sara and Laura:

She’s been so enthralled with the whole Storyline thing that she’s developing a Storyline with bees (Sara20Nov).

Kristina and Kurt post their students’ work in a classroom they share with other education faculty members. Their colleague Ann also teaches in this room and has observed the Storyline adaptations for educational psychology. She has told them that she wished she taught the class also so that she too could use Storyline.

*Recognition and elitism.*

As noted in Chapter Four, one socially-related motive to innovate could be that the innovation provides an opportunity for the teacher to join a group, thereby establishing a sense of group belongingness or a sense of elitism. As noted in both Chapter One and Chapter Four, the South Dakota culture of these teachers values work well done but does not condone sharing with others self-identified exceptional work. However, the teachers involved in this study created their own professional group, and as Sara noted, it was comfortable there to share triumphs with each other. In this way the unanticipated benefit became being part of a group which encouraged “safe” sharing.

It wasn’t so much about them, it was about what they were doing, in a comfortable way of sharing that enthusiasm. . . . The enthusiasm was very obvious. I just watched, as the different people were sharing, their interest. I enjoyed that part of it, just that it was the same idea, just applicable to all different levels (Sara20Nov).

With this innovation also was a sense of being on the forefront of something unusual. The study participants were the first in perhaps a radius of 500 miles to use Storyline in their classrooms, and yet it has been used in at least 22 countries. Due to an Internet sharing site, the South Dakota teachers had access to the Storyline experiences of their international colleagues.

I got a kick out of when you said, “We’re getting on the map, South Dakota, with Storyline.” And I was thinking, “There’s just five of us!” (Moira, MoiraandDiana).

The university teachers were among a handful worldwide who had used it at the post-secondary level, and in the summer between Phases 2 and 3 there was an international conference in the United States focussed on Storyline. The sessions which presented the South Dakota experiences with post-secondary Storylines were attended by approximately 20 conference participants, including many attendees from other countries.

Feeling that they were participating in something elite varied from teacher to teacher. Kristina attended the international conference and therefore was probably more influenced than others that she had now joined a larger group. None of the participants, however, have contributed to the Storyline news page available on the Internet.

*Changes in teaching as a result of innovating.*

Four of the 8 teachers in the study noted that their way of teaching was changed in major ways due to their innovations. Sara incorporated more student contributions during her teaching, and she mentioned improved parent involvement. Kurt elaborated on the effect that his innovation had on both teaching and assessment. Laura thought that her teaching was now more responsive to student need; Kristina felt that she guided student talk about content more, even in her other classes. Gina did not feel that she taught differently because of Storyline; Diana, Risa, and Moira did not address this issue. This issue, unforeseen change in teaching resulting from a self-initiated innovation, is significant enough to include remarks from the four the teachers who recognised this. Kurt referred to this in three separate interviews.

[The Storyline] has given me an additional tool to use. . . . It allows me to . . . process that with them in a way that I wouldn’t as effectively be as able to process that with them [without Storyline] (Kurt30Oct).

One of the things that it helps me to continue to analyse is the value of what we do in class (Kurt20Feb).

It does give me the ability to assess my students in unique ways . . . in more authentic ways than I would normally (KurtPhase3).

That’s part of this change in my teaching, with taking conversational notes and listening to the children a little bit more and using their words as introductions (Sara29Aug).

A year ago I felt compelled to have a textbook, even though I didn’t have one, to kind of help guide me in what I was teaching. But now I’m very thankful that I don’t have a textbook, because I feel like my curriculum is more flexible and more responsive to what the students are asking for. If there’s something that they need, then I can go out and find a resource, or they can go out and find their own resources to support what they need to learn more about. And the students are doing more work outside of class, like you were saying. They don’t need to be lectured (Laura, PLC20Feb).

I realise that . . . they can do things if I guide the talk and they’re doing things that they wouldn’t do outside of class. And it may be the best use of the class time, to guide the talk about the content. And I think I’ve done that before, but . . . even in my other class I may do it a little bit more because I see, I think I see, the value of it (Kristina, PLC20Feb).

*Feedback from students.*

Contributing to the teachers’ experience during the innovation was the ongoing feedback they collected from their students regarding learning in this alternative method. The teachers obtained this through formal assessment methods based on curriculum and also on observations of student behaviour. Moira noticed that remedial summer school students wanted to skip mathematics so they could get to reading, the portion of her class which used Storyline. Sara noted that a younger sibling of her former kindergarten student expected to participate in Storyline.

I didn’t realise that we had expanded beyond our own little boundaries as much as perhaps we did (SaraPhase3).

Kristina and Kurt both brought up the idea of student feedback more than once, demonstrating that importance to them. Kristina noted both one particular conversation regarding the Storyline use as well as the results of an anonymous survey she took of her students. Kurt twice mentioned specific conversations with students, both current and former, which were significant enough to encourage him to continue the Storyline application.

I have Friday be the activity when we play the game of applying what we know to our teenagers. The students love the Fridays. . . . I asked [a non-traditional student], “Are you having fun?” He replied, “Oh yeah, this is fun. It’s a good way to spend Friday afternoon” (Kristina23Sep).

The feedback was one hundred percent they liked the Create-a-Teen project. One hundred percent. One said it was weird [laughter], but they [sic] liked it. And they [sic] also said, “It makes us work with concepts in ways that I never thought I would work with concepts in a class” (KristinaPLC17Oct).

I think that that attitude of just general, positive anticipation is prevalent. . . . I had one student yesterday who as she was leaving said, “This must be a lot of work for you.” I said, “Yeah, it’s a decent amount of work.” And she said, “Well, it’s really nice to have—.” Her comment was, it’s good to have, it’s, that “education classes were fun because her teachers know how to teach and we do good things in there, and so many of our other classes, they just drone on and they really don’t know how to teach.” That was re-affirming (Kurt25Sep).

I saw [a previous student] in the hall and talked with him for little bit, and he brought up, and we weren’t talking about Ed Psych, he said, “I really enjoyed that project that we did in Ed Psych, where we did the teens and we did the weekly postings.” He brought that up independently. . . . [This week another former student] said to me, “Oh, I *loved* that project, that was so much fun” [speaker’s emphasis] (KurtPhase3).

The unanticipated benefits in affective areas and in student work were numerous and the participant teachers generally sounded surprised when relating particular instances. These results bring to mind the comments made by Storyline teachers Lindberg and Adamson. Lindberg ([2007](#_ENREF_140)) said that he had never found “a more powerful teaching and learning structure than Storyline” (p. 164); Adamson ([2007](#_ENREF_2)) wrote that each Storyline had an “effectiveness in engaging my pupils in a way that brought the best out in them” (p. 194). Similar observations of high levels of affective student engagement as well as student descriptions of themselves as more confident were documented in a study which, like Storyline, utilised dramatic story as a container for subject matter content ([McNaughton, 2004](#_ENREF_152)).

**Identity stability and instability.**

When any one of the dimensions of a teacher’s identity (professional, situated, or personal) becomes unstable, extra effort is required to mediate the imbalance ([Day, et al., 2007](#_ENREF_55)). Events causing imbalance might be personal crises, changes in policy, or changes within the school; these events might be positive or negative and they will vary in degree. In the case of changing classroom textbooks or introducing an innovation such as Storyline, which requires the teacher to change his or her leadership role, the instability will be greater than when a teacher merely changes how he or she records attendance.

By choosing to introduce innovation, the Phases 2-3 teachers in this study chose to experience instability in their professional dimension. This instability was positive in that they had made the choice and anticipated benefits which outweighed the anticipated difficulties. All of the 8 teachers in the study experienced changes in their lives during this study; for 3, the resultant instability prevented further use of their innovation; the remaining 5 managed the instability so that it had no impact on classroom teaching.

***Instability prevents further use of innovation.***

Diana, Moira, and Gina experienced nearly overwhelming changes during Phase 3 of the study. For Diana and Moira, these changes were related to their situated lives; for Gina, the changes were in her personal life. All three anticipated the events months before they occurred. The demands of the events were such that when contacted during Phase 3 regarding a last conversation about innovation, none of them wanted to schedule a meeting.

*Diana.*

Diana student taught with participant Moira during Phase 2 and incorporated Storyline into her teaching at that time. She finished her program mid-year and spent the next school term working in a non-school setting. The following autumn during Phase 3, she began teaching on an American Indian reservation approximately three hours’ drive away from her former home, family, and friends. Diana’s change of teaching environment, the situated factor, also required a change in personal life; although she stayed in contact with family and friends through Facebook and telephone, she had to change her immediate support system. The instability was both positive, in that she became a classroom teacher, and negative, in that her required changes were difficult.

Also affecting her is the change in culture, since she moved from a university town to an American Indian reservation. The county which houses her school is historically among the top 5 most impoverished counties in the United States. In 2007 56% of the children in this county ages 0 to 17 lived in poverty ([USDA, 2008](#_ENREF_211)). Although there are positive efforts by both Native Americans and whites to mitigate the effects of poverty, these efforts do not solve all the problems. Diana wrote in an e-mail:

I know first year teaching is hard anywhere, but this is the hardest thing I have ever done. This place is, there’s no words. My kids are good kids. They are just growing up in some tough circumstances. . . . I sure to do miss [former town] (DianaPhase3).

Diana planned to use Storyline later in the year, after she stabilised her identity.

*Moira.*

Moira also experienced great change between Phase 2 and Phase 3. She began using the Storyline method of teaching in remedial summer school immediately following the Storyline workshop. She then mentored Diana through a second iteration of the Storyline, which developed beyond the summer school plan. In Moira’s case the instability was situated and for the most part positive.

During the years of Phases 1 and 2, Moira’s school district was building a new school exclusively for the children in the grade Moira taught (grade 4, primary 5) and in their following year (grade 5, primary 6). In the summer between Phases 2 and 3, Moira and the other grades 4 and 5 teachers moved to the new building, away from much of the staff she had taught with for many years. Thus the change in situated environment also caused change within Moira’s support system, requiring her to work with a new principal and staff.

When asked if she was working with Storyline again in the new school, her e-mailed reply revealed her tension. Although she had anticipated this change to the new school, the demands prevented a third implementation of her innovation at the beginning of the school year. Like Diana, Moira was waiting for her identity to stabilise before teaching with Storyline.

Sorry I just don’t feel I’d be ready to answer your questions yet. I’m keeping my head above water with the new school and new committees and new procedures (MoiraPhase3).

*Gina.*

Like Moira and Diana, Gina also experienced change which affected her classroom life. Gina’s life change was in her personal life; she had a second child in summer before Phase 3. The instability was positive and personal. Her personal support systems remained the same and her situated life was similar, though she had twenty students rather than the previous year’s ten students. When contacted about continuing her Storyline, like Diana and Moira, she also replied by e-mail to indicate that she was not using Storyline in the autumn term and did not want to discuss innovation at the time of the communication. Even her wording and lack of punctuation expresseed a feeling of being rushed.

With two kids now, I don’t get a lot accomplished. . . . We will see if I will do Storyline again. If I do it will be a farm one. . . . After school is crazy and during school I don’t have time because I am nursing so that takes my prep (GinaPhase3).

Moira, Diana, and Gina all showed that the instability in other parts of their lives was influential enough to prevent the innovation from Phase 2 to carry over into the following year, at least during the first school term. However, all three anticipated stability developing as they grew used to their new situated environments (Moira and Diana) or personal life changes (Gina), and all three anticipated using Storyline again.

***Instability is without impact on the innovation.***

In this study, there were five teachers who experienced fairly large change within their lives during Phases 2 and 3 but unlike Diana, Moira, and Gina, these teachers did not experience resulting impact on their classroom teaching. None of them were in the early years of teaching. They were housed at a university and all were involved in the college merger which occurred during the study. They were also the five teachers who became involved in sharing their experiences with Storyline on a professional level. These teachers can be divided into two groups: those who anticipated the changes in their lives, and those who did not anticipate changes in their lives, other than the college merger.

*Anticipated change: Laura, Kurt and Sara.*

Laura, Kurt and Sara anticipated and experienced change in their lives during Phases 2-3 of the study. The anticipated changes did not impact their identities to the point of affecting their classroom lives.

For Laura, the change was limited to her professional life in the college merger. Laura suggested that rather than three dimensions of identity, there were two. She acknowledged the interaction of these dimensions, and she noted that the college merger did not affect her teaching or personal life.

I’ve always thought of it as two, like my personal life and my professional life. And if things are going well in one of those, my life can be fine. But if both of them are in turmoil, or if I’m struggling in both of those avenues, then that makes it much more difficult for me to feel good about myself. But I think that last year was a pretty stable year all around. Probably the hardest part was just the changing of the college, but that didn’t affect me personally; it just involved more meetings. Like I’m not emotionally a different person because we have a different college this year (LauraPhase3).

For both Kurt and Sara, the changes were in both their personal and professional lives. In both cases, they had a child move out of the house and go away to school; in Kurt’s case to a post-secondary school and in Sara’s case to a secondary boarding school. However, Sara had previously had children go to secondary boarding school, and she planned for this child to come home on weekends. Both Sara and Kurt communicated that the event of the child leaving home was anticipated and therefore although the event had an impact on their personal lives, the effect was not traumatic. Kurt also had the major personal change of starting a rock band during the summer just before Phase 2; it was centred out of his home and during both Phases 2 and 3 the band was fairly busy practicing, performing, and recording.

Kurt and Sara experienced change in their professional lives as well as in their personal lives. Sara began teaching a course at the university which she had previously only proctored. Kurt chaired a committee with national demands and began participating actively on two other committees in addition to serving on the college merger committee. Both Kurt and Sara mentioned that although their lives were busy, the extra duties and personal life changes did not affect their classroom teaching. They communicated strategic management of these fluctuations in their lives (Day et al., 2007).

In both my personal life and my professional life, things were ratcheted up a little bit, but I didn’t feel—I’ll say that they were natural steps as opposed to something totally jarring, as opposed to having cancer or a traumatic thing. They were expected, anticipated changes, but they certainly did increase stress level and workload and that sort of thing (SaraPhase3).

I’m pretty careful to guard my personal life. . . . I’ve done, so far, a pretty effective job of keeping the two [professional life and personal life] from interfering with each other (KurtPhase3).

*Unanticipated change: Kristina and Risa.*

Like Sara and Kurt, the change in Kristina’s life during Phase 2 of the study was related to her children. During Phase 2 her unmarried daughter had a baby and her son became unemployed, and neither of these adult children had a permanent home. Additionally, her husband was unwell. Although these were unanticipated and negative changes, Kristina did not feel that they impacted her professional life.

Even though there are conflicts with my children and it causes me stress, my personal life is, has its challenges, and its roots are very, very stable. . . . There was definitely in my personal life with my kids, my husband’s medical issues, there were some rough edges there, but the core is deep and solid (KristinaPhase3).

Change in Risa’s life did not occur until after her initial innovation. She decided to apply for a position at another university several hours away, mostly due to low pay at the current university but also due to what she felt was an insecure position at the university due to the college merger.

It’s kind of looming over, because it’s like we don’t really know yet. We don’t really know how it’s going to affect us. But the change that might be coming with the merger of the colleges is really scary, I think (RisaPhase3).

After several months of instability regarding her application for a new job, including being offered a very attractive package at the other university, she decided to stay in her current position because of her daughter’s school situation. Her application to the other university did not affect her innovation, but she did note that the consideration of the other job affected all parts of her life.

**Conclusion: The Relationship of Initiating Innovation and Sustaining Motivation and Commitment - Confidence, Appeal, and the Power of Story**

**Confidence in teaching.**

Les Paul, a guitarist known for inventing a solid-body guitar and multi-track recording, gave the advice to performers to go out with confidence, because then the audience will have confidence in the performance (["All you need is one note: The wisdom of Les Paul," 2009](#_ENREF_5)). This principle perhaps has a parallel with using an unusual innovation such as Storyline: teachers have to teach with confidence so that students are confident that they will learn through the experience. In response to this idea Kurt said,

The parallel is there, and I, I agree completely. So, so maybe the parallel can be more specifically derived in, if you have confidence in a particular strategy, a particular exercise, a particular project that you’re asking students to do, then they’re more likely to believe in and carry that same confidence in the worth of that project (KurtPhase3).

The Phases 2-3 teachers began with doubts in some areas, but they had confidence that their innovations would result in enough benefits that the difficulties would not overwhelm the innovation. Through the benefits gained, particularly those unanticipated, the teachers gained confidence in the Storyline innovation and decided to continue, adapting their original plans to incorporate new ideas and to avoid previous areas of difficulty. This of course occurred only for those who repeated their innovations; continued teaching with Storyline was not attempted by some whose identities were experiencing temporary instability.

**Why did Storyline appeal to these teachers?**

Teachers sometimes talk of how much they enjoy their jobs. The experience of innovating with Storyline drew these kinds of remarks from the Phases 2-3 teachers at all levels, primary through university. Teaching with Storyline appealed to these teachers; below are remarks from some of the more experienced teachers in this study.

The beauty is that you are the designer (Moira14June).

I gotta [sic] tell you, I am so excited (Sara29Aug).

This is so much fun (Kristina, PLC20Feb).

Sometimes when you say, “projects”, some teachers get fearful of that, you know. But what I like about this is that there’s so much structure to it, where you’re going (Moira, PLC20Feb).

**The power of a well-told story.**

The Phases 2-3 teachers told of their anticipated and experienced benefits and difficulties, and they told of their delights and irritations. They formed their own professional learning community to share their experiences with each other, and they pursued refinements to their plans. Sara summed up why the teachers spent the effort on teaching with Storyline when they could have lectured and passed out worksheets instead:

It’s drama. It’s story and drama. You know, the power of a well-told story and the drama and the emotions and the connections to characters. I mean, that’s just the human-ness, and I think that’s why it works for schools (Sara20Nov).

**Chapter Six**

**Sustaining Change**

**Introduction**

This chapter and the previous two chapters reveal teachers’ answers to the research questions. The focus of Chapter Four is why teachers innovate; Chapter Five discussed the relationship of innovation to teacher identity as Phases 2-3 teachers were followed through their innovations. This chapter, Chapter Six, examines the issues teachers face when sustaining self-initiated innovation. Evidence from participant teachers in all phases is included in this chapter.

Questions examined in this chapter include:

* How do teachers sustain self-initiated curricular innovations?
* What factors discourage sustaining an innovation?
* When teachers change schools or teaching assignments, do they keep these innovations going?
* What feedback do teachers use when they decide to repeat an innovation?
* What supports does he or she need when sustaining change?

Discouragements most frequently mentioned were related to factors beyond the teachers’ control, such as changes in curriculum standards. Teachers cited administrator support and trust as supports; teachers were aware of student feedback and progress during with the innovations. Teachers also remarked on factors of personal “fun” and challenge within the classroom environment.

**Factors Discouraging Sustained Innovation**

Twenty-four of the 30 (80%) teachers in this study talked of difficulties or frustrations which extinguished, threatened, or limited sustaining self-initiated innovations in their classrooms. Although there were commonalities among these factors, there was also individual variation. Figure 14 shows the 30 comments made by these 24 teachers, sorted into influential dimensions of identity: professional (regulations and the teacher’s own definition of the ideal teacher), situated (school context, such as students and support), and personal (life outside of school) ([Day, et al., 2007](#_ENREF_55)). These factors were not of equal influence on the teachers.

*Figure 14.* Threats to sustaining innovation

It should be noted particularly that none of the teachers in the study remarked that an administrator or school policy (other than curriculum standards) blocked or threatened an innovation. There was only one discernable pattern of difficulty or frustration which could be correlated with other factors such as years of experience, subject area, or grade level: 15 of the 16 comments made relating threats to sustaining innovation due to NCLB[[10]](#footnote-10) or NCATE[[11]](#footnote-11) standards (coverage, change, and testing) were all made by teachers with more than 16 years of experience. The exception was one teacher in the 0 to 3 years category who was teaming with a 16 to 23 years of experience teacher. This expressed irritation with the affecting reforms is slightly reminiscent of Huberman’s ([1993](#_ENREF_104)) older teachers who expressed more caution with reforms than did younger teachers.

As noted earlier, the comments noted in Figure 11 were not of equal influence on the teachers in deciding to limit their innovations. Professional dimension factors generally were mentioned with more emphasis than were those in the other areas. Factors which fit into the professional dimension (16 comments, 53%) were more numerous than those factors in situated (13 comments, 43%) or personal (1 comment, 3%) dimensions of identity. These three dimensions of identity are addressed below with reference issues which threaten to allow the teachers to sustain their self-initiated innovations.

**Professional.**

Sixteen of the 30 comments regarding difficulties in sustaining innovations were related to standards or standardised testing as influential in limiting innovation. Comments in this professional dimension of identity, shown in Figure 11, fit into three areas: standards coverage (10 comments), student test performance (4 comments), and changing standards (2 comments). Teachers at the university were among those who commented in this area; their curriculum does have standards to address, and similar to K-12 teachers, their students have a proficiency examination before licensure. The remarks below are typical of the 16 made in the professional dimension of identity.

When coverage is being emphasised so much, deductive [teaching] is faster [than inductive teaching]. You just can’t get away from it. It’s just faster to tell them. It takes me a whole day to have kids discover, and sometimes even a day and a half, to have them discover polarity. I could tell them in five minutes, and they would probably mostly understand it (Clark).

The standards changed, the curriculum changes, and all of a sudden you’re not doing all those same things anymore (Tia).

Everything comes back to the tests (Jane).

In the old days we could do more creative things. We were not tied to the textbook. But now, with the testing, testing, testing, it’s out of the teacher’s control. I used to be able to incorporate everything and have a focus on learning and not the scores (Lynette).

I’m feeling a lot of frustration with NCLB. There are grants for math and science [teachers to do creative things], but that’s about it (Moira14June).

Moira’s comment above, made in June, communicated frustration with NCLB legislation which she saw as limiting her creativity. Six months later in October, Moira had used her Storyline innovation twice; her comment regarding the standards at this time communicates that she had reconciled the issue.

You just have to be able to back it up with those standards and what you want the students to be able to learn (Moira23Oct).

Other teachers also made remarks which communicated the teachers’ own watchfulness over what they were teaching. The teachers approached the standards as references rather than restrictions.

I really don’t mind the standards. I do mind the results of the testing and the ways that they [unclear reference] want to use that (Jenna).

I’m kind of compliant with standards, trying to find balance there (Clark).

Whilst Clark communicated that he was compliant with the standards, he also noted that the standards required him to teach at less than his ideal.

The national standards and the state standards are all, “Teach this mindless content. Teach all this knowledge-based stuff.” And you know, we’re doing it. And that’s what we’re doing in biology and we all know it’s wrong. And it’s, it feels wrong. Sometimes it’s knowledge based, sometimes it’s not even knowledge-based, it’s just word-recognition based: “It’ll look great on the test. When we take that test, we’ll do great.” But we all know good and well we’re not doing what we’re supposed to be doing (Clark).

Student teacher Diana realised that sometimes her students spontaneously worked in a standard area above those listed for their grade level. She noted the importance of a teacher being able to use personal judgment when applying standards to everyday classroom life.

When you see students get excited about something, and they’re really going off on a tangent . . . you’ve got creativity going on and you’ve got the love of learning, and it’s like, let them go with that for a little bit. And so maybe we do actually go beyond what’s actually written down on a standard, but again, you just have to use good judgment (Diana23Oct).

The lack of a state test in a teacher’s subject area was mentioned by three teachers. These teachers noted that they taught the expected curriculum standards, regardless of testing or the topic’s existence in the textbook.

I’m not held accountable on standardised tests. . . . We hit all the standards, and we hit some more than others (Sam).

I’ve always been one who, even before we had the state standards, we always had a local curriculum, and I knew I was going to teach the curriculum. It wasn’t all about going through the book; it was about teaching the curriculum, whether it was in the book or not (Tia).

Mathematics teacher Steve noted that one reason he introduced his particular innovation was because of the way the state test, the Dakota STEP, was written.

Dakota STEP is a multiple-choice test. It’s a reading test, paragraph form, a lot of story problems (Steve).

**Situated.**

Of the 30 comments on difficulties which limited continued innovations, 13 of these were in areas related to the teachers’ situated identities, or factors which were local to them such as their school and their students. As with comments made in the professional dimension of identity, university teachers also made comments in situated areas as shown in Figure 14:

* changing of grade level or subject area (3 teachers),
* comments from parents (2 teachers),
* the lack of professional development opportunities (2 teachers),
* the change of a teacher partner (2 teachers),
* changing schools (2 teachers),
* the norm with the teacher’s colleagues (1 teacher), and
* lack of space (1 teacher).

[My partner teacher] left, there was turnover there, and I eventually came here to 5th grade (Tia).

Pretty much no professional development here in comparison [to where I taught before] (Lianna).

Comments in the situated dimension did not appear as influential in limiting teacher innovation as did the comments in professional areas. Teachers expected situational fluctuations to stabilise. As noted in Chapter Five, Moira and Diana changed schools, which caused them to drop their innovation. However, both planned to continue their innovation after their situations stabilised. Other teachers also experienced situational change and adapted to it. Changes in their situation affected their carrying over of innovations, but they also said in their interviews that they adapted what they had previously done for their current situations.

Kurt and Risa shared the same situational difficulty at the university. Due to a lack of dedicated classroom space, they felt that they could not have student projects on display. They worked with this issue during their planning stages rather than treating it as an issue which affected sustaining the innovation. Risa did not mention lack of dedicated space as a problem; she carried student projects from her office to her classroom and back again. Kurt mentioned this issue after having participated in a discussion with the professional learning community; at this time he was already thinking about changes he would incorporate into the coming term. He did not yet know which classrooms he would be using.

The lack of having a consistent dedicated space at the university is a little bit problematic. . . . I would have been very hesitant to leave student projects that were at all meaningful in a classroom (Kurt30Oct).

**Personal.**

Gina was the only participant who mentioned that personal issues limited her innovations. However, like Moira and Diana anticipated that their situations would stabilise and as mentioned in Chapter Five, Gina foresaw that her personal situation of having a second child would stabilise and that she would return to her innovation at that time.

**Supports Helpful to Sustaining Innovation**

All but two teachers mentioned support as helpful to them in sustaining their innovations, with 58 sources of support noted in all. Supports were most commonly part of the teachers’ situated identities. Four teachers mentioned personal support sources. None of the comments regarding these supports were in the professional dimension of identity. See Figure 15.

*Figure 15.* Supports for innovations

**Situated support.**

Comments regarding situated sources of support were usually in the areas of their supervisors (24) and teaching colleagues (25, spread amongst teaching partners, team members, friends on staff, and colleagues outside of their own school).With 53 comments in the situated support area, it was common for teachers to mention more than one source of support, and some teachers were pleased with all aspects of situated support.

I feel that I get great support at school. I think my boss is great. My boss is great, the team concept is wonderful, I think, um, the staff is supportive of each other (Marcie).

Support-wise, I can’t ask for anything more. Really (Sam).

***Supervisors.***

Supervisor support was noted by 24 (80%) of the teachers in this study. Another 4 (13%) teachers implied this support; they were participating in a mathematics innovation program which was suggested by their principals (though not with mandate or coercion). Many education articles reference the importance of supervisor support; among them are findings that more successful changes occur when teachers are allowed by their supervisors to align materials with their own interests and judgment ([Butt & Townsend, 1990](#_ENREF_30); [Ritchie & Rigano, 2002](#_ENREF_177)). The remaining two teachers who did not comment on having supervisor support neither said nor implied that their supervisor was not supportive.

Teachers generally felt trusted by their administrators to act as professionals, and they also generally felt that their administrators would purchase materials they wished to use. Three teachers in different schools used the word “lucky” when referring to their administrators. The comments below are representative of those made regarding all of the supervisors of teachers in the study.

I’ve been lucky to have good administrators who are easy to work with, who really support innovation (Clark).

I have always had supportive administrators. Thankfully. Every one of them have, have just said, “As long as you’re covering the standards . . . I don’t have a problem with that.” And so we’ve been very lucky here at (this town) to have that trust (Tia).

I thought that we were always encouraged; I felt like [the principal] was always, like, “Hey, if you’re doing something fun in your class, let me know” (Jenna).

My principal is very good about trying anything new, finding a better or more fun way to teach (Lianna).

[The principal] is really good about providing materials so we can teach kids in a different way or materials that give us a lot of hands on learning (Patty).

The principal is really supportive. Number one, he cares about kids. Number two, he cares about teachers (Missy).

I’ve always felt as a teacher that I have a lot of freedom to be creative. The limitations have always been systemic limitations: financial resources, time, and facility. Those have been the only things that have provided a fence around my creative ideas (Kurt20Aug).

The only negative comment regarding supervisors was made by a teacher who suspected that although she felt that her principal trusted his faculty to teach the standards, he was possibly told by another person in the education hierarchy to have the teachers formally post each day’s curriculum standards.

He [the principal] said [in a staff meeting], “I want you all to start displaying in the classroom what standard you are teaching.” . . . I think that when he said it, he thought, “I have to say this because” well, I don’t know this, it’s just my gut feeling, that “the administration is saying this, that we have to know what are these teachers doing” (Moira23Oct).

***Teaching partner support.***

Nine teachers (30%) mentioned support from one particular teaching partner. This person was usually someone in the same grade level and subject area. The supporting partner was likely to be an experienced mentor for a new teacher, but teachers also mentioned partners who were their professional equal. This is similar to the finding regarding technology use that “just-in-time” learning from colleagues is most influential for teachers, as opposed to inservice work ([Granger, et al., 2002](#_ENREF_83)).

The best help for me being a rookie was [the other maths teacher], having taught for 30 years or more, just to bounce ideas off of him. Tremendous resource. Not just to talk about math, but to collaborate and how to work with kids and what else to do with them (Steve).

We’ve been a great support for each other (Sam).

My teaching partner has taught for 30 plus years, so she’s a great resource especially for reading (Lianna).

***Support from colleagues other than partners or team members.***

Eight teachers (27%) said that colleagues with similar innovations who were not in close physical proximity were a source of inspiration and support. This category of supporters does not include those who were considered teaching partners (two teachers sharing students or two teachers teaching same subject and grade level) or team members (a group of four or five teachers sharing the same students). Some of these collegial supporters were housed at the participant’s school or building; others were not. The supporters and participants had contact with each other through e-mails, formal meetings, and casual interactions.

There is a pretty good support group. I mean, if I send an e-mail out to a group and ask for, “Does anyone have problems related to interpreting remainders?” and I’d probably get four or five e-mails back with activities (John).

We have reinforced this, that we’re all doing this for the same goals, that good teaching at one level looks like good teaching at another level (Kurt30Oct).

***Team.***

Working in larger teams was mentioned as particularly supportive for 7 (23%) teachers. Both the grades 4-5 teachers and the middle school teachers in this study worked in teams. The middle school teachers met together daily.

The middle school concept, the fact that we meet with our other, the other teachers ever day, it allows us to be more creative in our approach, because we know what’s going on in other classrooms (Larry).

Teaming is really a big support (Missy).

The best thing has happened to my teaching [was when Wednesday afternoons were] meant for team planning (Danielle).

***Students.***

Many teachers at some point in the interviews mentioned the importance of good relationships with students, but first-year teacher Sam was the only one who couched these relationships in terms of personal support.

The kids support me just as much [as do other teachers and the principal]. . . . It’s nice to have them supportive, too. It makes my job easier (Sam).

***Desired support.***

Three teachers (10%) who made positive remarks about support did say that they desired certain supports not currently available to them. Sara, who taught at the university lab school, thought another kindergarten teacher nearby would be good. Gina, also isolated from other kindergarten teachers, speculated about an Internet forum available as a support. Time for reflection was also mentioned as a desired support.

I wish that I had a teaching partner with whom to share, “What did you do today?” “How did it go?” (Sara).

That [Internet forum] would be nice, because then you’d have that many more people that would, and even if they’re doing the same idea or something, too, then, “Hey, I did this, and this worked.” That would help, as long as you had time [to read it] (Gina22Jan).

I need a summer again. That’s when I do my best thinking and work on things like that. And that’s what I need, is a summer, now, to think, to think about that (Tia).

**Personal supports.**

It was far less common for teachers to mention support in the personal dimension of their identities than in their situated identity dimension. As noted in Figure 12, only 4 (13%) noted personal support; two regarding family, one with friends and family in a sharing rather than crucially supportive capacity, and one in regards to spirituality.

***Family.***

Two teachers mentioned the importance of their spouse’s support to their work. These two teachers did not have children at home. Other teachers who mentioned family, those with children at home, did so in terms of balancing their family life with their work life.

I don’t know if I could be married to somebody who is not a teacher, to tell you the truth, because I don’t think they understand it. If I’m up at the school until 9 pm, he [husband and participant Larry] still thinks I obsess about it way too much, but that’s just the way I am (Missy).

My wife does a lot of stuff for me (Sam).

***Family and friends.***

University teacher Kristina mentioned the support of both family and friends. Although she did not say that their support was crucial to her innovation, she did note that she enjoyed sharing with them the developments in her classroom.

My mother, my husband, my two good friends are all asking me, how’s the new course going? They know I’m enjoying it and want to share (Kristina23Sep).

***Spirituality.***

Clark’s family was not the most crucial personal source for support for him. In his interview, he addressed his own spirituality at some length, attributing his ability to interact with others to this source.

You can’t need your wife and your kids to love you so much that it can spill over onto your students. They, they just can’t fill up your cup. And when you’re waiting for people to do it for you, that’s never going to work. And I need God to fill up that cup so that it can spill over in love for my wife, my kids, and my students and everybody else (Clark).

**Innovations Produced Satisfactions with Students and Teachers Themselves**

Participant teachers experienced satisfaction with their innovations and were likely to sustain and repeat these innovations. Satisfactions fit into two categories: those with students and those with themselves as teachers.

**Students.**

In their interviews, participants included vignettes from their students as evidence of the success of their innovations and their own satisfaction with how the innovation worked. These vignettes were in the form of direct feedback and observations of students in their classrooms. Teachers were not asked to provide this anecdotal or vignette evidence, but it is evident from the number who did so that teachers enjoy talking about their innovations in terms of how the students reacted to them. Once again teachers demonstrate how important and meaningful student relationships are to them, an aspect of teaching which has been shown in several studies completed in different times and locations ([Day, et al., 2007](#_ENREF_55); [Jerslid, 1955](#_ENREF_107); [Kzltepe, 2009](#_ENREF_124); [Lortie, 1975](#_ENREF_142); [Nieto, 2005](#_ENREF_165); [L. M. Smith, et al., 1994](#_ENREF_199)).

***Direct feedback from students.***

Vignettes were used as evidence by 24 of the 30 (80%) teachers of all levels in this study. Those who did not recount these stories of their students (6 of the 30, 20%, teachers) did make summary remarks about the effectiveness of particular innovations. The vignettes recounted feedback from both current and former students. The teachers used the feedback as partial evidence of the success of their innovations.

A high school tutor that’s a senior [age 18] this year, she brought in her portfolio of her fourth grade year [primary 5] and she said this was her favourite year (Danielle).

[A student wrote], “I never slept in class yet, and it’s the only class I’ve never slept in” (KristinaPLC17Oct).

In several cases, teachers cited more than one vignette communicating the important of student feedback to them, as shown by Kurt during two different interviews. These vignettes also were used in Chapter Five, in the discussion of teachers’ unanticipated benefits in affective areas.

One student yesterday who as she was leaving said, “This must be a lot of work for you.” I said, “Yeah, it’s a decent amount of work.” And she said, “Well, it’s really nice to have—.” Her comment was it’s good to have, it’s, that “education classes were fun because her teachers know how to teach and we do good things in there, and so many of our other classes, they just drone on and they really don’t know how to teach.” That was re-affirming, and that came at the end of this Create-a-Teen project session (Kurt30Sep).

[Last week a former student] said, “I really enjoyed that project that we did in Ed Psych, where we did the teens and we did the weekly postings.” He brought that up independently. . . . Another [former] student yesterday . . . said to me, “Oh, I *loved* that project. That was so much fun” [speaker’s emphasis] (KurtPhase3).

***Observations of students.***

Teachers also cited observations of students as evidence of the success of their innovations. As with the student feedback, teachers were not asked to provide this evidence. Due to this design intention in the study, it is inappropriate to numerate these remarks. The fact that the teachers did include observations of their students makes it obvious that student reactions are important to teachers and that they are watching for student reactions. The teachers quoted in this section revealed their surprise with the quality of the student understanding, behaviour, and initiative.

*Observations of student understanding.*

Teachers cited both formal and informal evidence of increased student understanding which resulted from their innovations. Again, these observations were made by teachers at all levels. The comments from Kristina and Risa below were also included in Chapter Five, in the discussion of unanticipated benefits of the innovation.

It’s amazing. I am overwhelmed on how far the children have come (Tammy).

They articulated it perfectly. I have never had that happen before (Kristina23Sep).

Holy cow, . . . I was amazed at the amount of information that they gave (RisaPLC17Oct).

*Behavioural observations.*

Teachers who noted that their innovations had an effect on student behaviour did not mention that they anticipated that this would be the case. The resultant positive behaviour was a motivator for the teacher to continue with the innovation.

I hated my math program before. I had more behaviour problems (Greta).

I knew the appeal of the drama and of the human reaction, but watching their reaction with each other as the Storyline comes alive is wonderful (Sara20Nov).

We had to cancel math because of a program in the morning, and I had four or five kids run up to my desk with this expression on their face like, “How could you do that to us?” (John).

*Student initiative observations.*

Teachers did not say that they made their innovations in order to inspire students to spend more out-of-class time with the subject. However, teachers cited observations of the unexpected ways that students demonstrated such initiative. This initiative was cited by teachers of both primary and university students.

[Students] suggested that we use “groups” [in the Facebook application for the fictional teens]. So I started some groups just yesterday . . . and [two [students spontaneously] created a Young Republicans group. . . . [Another student manipulated a computer drawing to make it look realistic.] That was certainly something that wasn’t expected, and it’s certainly something that others have noticed, too. Others go, “Wow. What did they do to their picture? Wow” (KurtPhase3).

One of the students does OST, the Out-of-School-Time, program for the kindergarten class. She’s the head teacher for that, and she’s started doing Storyline (Laura20Nov).

He was looking to work plot into his student’s story (Kurt30Sep).

We just laughed today because they were coming in with their own incidents today! . . . We played along. Actually, Lauren [student] took each of us to the hall and told us what to do and how to do it. And she wasn’t the only one (Moira23Oct).

It’s even going outside of reading class, they’re talking about it. They’re having a blast with it (Diana23Oct).

I can’t get them to stop [doing maths] (Tammy).

**Self as teacher.**

All participant teachers made remarks regarding the relationship of innovating to themselves as teachers. The choice to initiate innovation had positive effects themselves as teachers, and the changes were sustained. Self-initiated innovations affected the teachers in the areas of:

* “owning” curriculum (30 teachers, 100%),
* having fun in the classroom (22 teachers, 73%),
* causing changes in other areas of their teaching (4 teachers, 13%), and
* filling a need for challenge and refinement (6 teachers, 20%).

***Teacher ownership.***

Teachers’ comments on their innovations communicated ownership of the curriculum, but this was a factor which was revealed not so much through direct teacher comments but through analysis of what the teachers said. The self-initiated innovations demonstrated teaching choices that the teachers made based on their observations and judgment. These choices were in a variety of areas, as discussed in Chapter Four. For instance, teachers might initiate technology use, integrate language arts with geography and world events, or completely alter teaching approaches. Jenna, a secondary maths teacher, shared that creating fun activities helped her overcome her initial reluctance to being a teacher:

I hadn’t originally wanted to be a teacher. I was talked into being a teacher. It kind of took me awhile to take it and make it my own and make it into something I liked. And I did that by creating activities wherever I didn’t like what I was doing; make it something fun (Jenna).

***The “fun factor.”***

Phase 1 teachers were asked directly, “Is there anything else you’d like to say about teaching?” and Phases 2-3 teachers were always given the opportunity during the interviews to share what they wished to regarding teaching and their innovation. In these open-ended opportunities to talk about their own teaching, teachers used words such as “exciting,” “fun,” and “creative;” 22 of the 30 (73%) participants used the word “fun” when describing their jobs with respect to the innovations which they initiated. Of the remaining 8 teachers who did not use the word “fun,” 5 talked about loving or very much enjoying their job. Putting these together, 27 of the 30 (90%) teachers, all of whom self-initiated innovations, spontaneously made a remark which communicated a high degree of personal enjoyment in their jobs. The remaining 3 teachers were primary school teachers with at least 16 years’ experience; two of these three spoke at some length about the positive results of their innovations in maths. The remaining one teacher did not make negative remarks about teaching beyond those associated with testing. These 3 teachers who did not spontaneously remark about job enjoyment were not asked a direct question regarding job fun or job enjoyment, just as none of the other teachers were asked a direct question in this area. Below are comments typical of those which communicated a “fun factor” regarding self-initiated innovations.

I like to be home at night thinking . . . about the fun things that we’re doing (Jenna).

This has been the most fun thing that I have ever done (Danielle).

We could be really creative. . . . We’d visit a pig operation, or we’d do population studies, we’d trap animals . . . . That was fun (Larry).

I have to find things . . . like making catapults and shooting marshmallow across the room. They love it. They do! And when they love it, I love it. And so that’s what motivates me. . . . That’s when it’s exciting. . . . That’s the fun part (Missy).

It was just a hoot. It was just so much fun (MoiraPLC20Feb).

I am really enthused about it, and for me, the three hours—or two hours and fifty minutes—fly by. . . . It’s making me more excited to teach this class (Risa29Sep).

When I was eight years old I absolutely hated math. I didn’t start enjoying math until I started teaching it. Now it’s my absolute favourite to teach (Tammy).

The fun part of teaching is when you can personalise it. And when you’re fired up about it, then your students are (Tia).

***Change in teaching overall.***

For Phases 2-3 teachers, this aspect of the effect of the innovation was detailed in Chapter Five. Half of this group noted that their ways of teaching were changed in major ways as a result of the innovation. The examples they gave included taking notes on conversations with children and using their words more, assessing students in more authentic ways, and having confidence that they don’t have to lecture in order for their students to learn.

For Phase 1 teachers, change in teaching overall as a result of the innovation was particularly noted with those participating in the Cognitively Guided Instruction ([Fennema, 1992](#_ENREF_69)) training. Three teachers noticed that their training in maths instruction led to changes in their teaching other subjects. John mentioned having higher standards for other teachers as well as himself. Danielle, the teacher who travelled around the state with a team collecting information for their students, also noticed the innovation affecting the team’s teaching in other areas.

I do not teach the same in here anymore (Greta).

I have changed my way of thinking (Tammy).

I’ve kind of taken a step back and [have] been very open-minded about teaching approaches, maybe even more critical of my own teaching as well as others (John).

It totally changed the way we all taught and it totally changed our attitude about teaching because we were seeing so many connections (Danielle).

***The innovation addresses a personality need.***

Six of the teachers noted that their innovations were due to a personal need for an additional factor in their jobs, such as challenge, creativity, or an opportunity for making refinements to innovations. This relates to the challenge and control aspects in “agency” theories of Malone and Lepper ([1987](#_ENREF_144)) and Gerjets and Scheiter ([2003](#_ENREF_76)), as well as to “flow” theory ([Csikszentmihalyi, 1990](#_ENREF_41)). The participants’ comments, like those regarding a fun factor, were made by teachers at all levels. Below are comments which represent teachers’ interest in continuing to improve on their innovations.

I have never ever been a person that is a page turner in a teacher’s manual. I don’t do that and I don’t believe in that. I think about what the kids need. This is actually working beautifully for me (Tammy).

I look at myself, and granted, this is only my sixth year, but I have so much to learn. I still consider myself a rookie. I need to prove myself. I’ve always said to myself, “The moment that I’m satisfied I need to quit” (Steve).

Creativity is what keeps me in education (Janine).

I’m grateful that I’m, I’m into something that is so challenging to me intellectually, creatively, emotionally, spiritually, the whole thing (Clark).

I always thought it [Storyline teaching] was pretty easy, and it was fun, and I loved it, and it was meaningful, but at the [Storyline] conference I guess I got this feeling that it could be even more meaningful, but that it was, if I was to make it that more meaningful, it would be lot more work! (KristinaPhase3).

**Conclusion**

Nearly all of the participant teachers continued with self-initiated innovations into subsequent terms or years. Teachers who had major changes in either personal or situated dimensions of identity did not sustain their innovations, although they stated that they intended to return to them when their lives stabilised. Teachers did note that they had administrative support in initiating innovation; that support was in two forms: materials provided and trust that the teachers would teach the curriculum standards. Teachers communicated that their innovations were connected to both an enthusiasm for their jobs and a desire to improve on status quo textbook approaches to teaching. Moira and Clark demonstrate these remarks, with Clark relating this to his upbringing.

You get to be creative and the kids get to be creative. . . . We’re having so much fun with it that it’s not work (Moira23Oct).

I grew up on a cattle ranch, squinting at the sun and walking into the wind, and it feels like my whole life has been uphill, but I just don’t know anything else. And to me, it just feels right, because it makes me tougher, stronger, a better person, not necessarily to do things the hard way, but to take “the high road” (Clark).

**Chapter Seven**

**Discussion**

**Introduction**

The main aim of this study was to explore the views of South Dakota teachers concerning their involvement in initiating curriculum change. For the Phases 2-3 teachers, Storyline’s characteristics of newness and of adaptability were essential to discovering teachers’ views about initiating innovations. Both aspects, of newness and of adaptability, meant that I could incorporate teachers of many ages and teachers with a variety of experience. However, it should be pointed out that the study was not to evaluate the effectiveness of Storyline as a teaching method, and the purpose of the study was also not to evaluate what the teachers did but what they said they felt and thought about as they planned and worked through classroom innovations. Teachers did add observational remarks of both themselves and of their students whilst relating their stories to me. The point of this chapter is to review what the teachers said and to synthesise this into the simplest model possible, with relevant reference to the existing literature.

The main research question was, “What explains teacher-initiated curriculum innovation?” In plain language, “Why do teachers work outside of textbooks?” After all, textbooks have been written by area and teaching experts. Textbooks include latest pedagogical theory as well as suggestions for how to approach lessons latest theories, and they have been tested for bias. Publishers usually claim both effectiveness and that the books address curriculum standards. Texts include many helps for teachers, including not only tests and possible discussion questions but also suggested time to devote to sections and student handouts, including those which are adapted for second-language learners, the accomplished learner, and those who need additional support before they attain topic mastery. Some textbooks come with CDs and Internet sites which support the teaching; some offer poster-sized visual aids. Given these characteristics of textbooks, it is easy to see why textbooks can be useful to teachers. However, some of the teachers in this study did not use textbooks at all. Other teachers in this study appreciated having the textbooks as a resource but rarely had the students use them. A few had students regularly use the textbooks for homework exercises but did not use the text as a basis for in-class teaching.

Like many questions in educational research, sorting out what explains this avoidance of conventionality, or teacher-initiated curriculum innovation, does not have easy answers, such as correlations with family background, professional preparation, or subject area. Answers to the question also do not correlate with characteristics such as level taught, or with age or years of experience, though there were two tendencies: teachers with more than 7 years of experience were more likely to participate in this study, and teachers at the middle school level were more likely to participate than were high school teachers. Answers do not correlate with particular professional learning experiences.

The answer to what explains teacher-initiated innovation is also simplistic. Teachers enjoy initiating their own innovations so that their students learn better, which is an obvious and professional answer and which reflects the comment that textbooks and lectures are less effective than other learning methods ([Rushkoff, 2010](#_ENREF_182)). Teachers’ second-most offered answer to the question of why they innovate was so that they could avoid personal boredom. This high value on initiating complexity has been a repeated but un-emphasised finding in the major studies on teachers’ lives and identities ([Day, et al., 2007](#_ENREF_55); [Huberman, 1993](#_ENREF_104); [Lortie, 1975](#_ENREF_142)) but has been popularised through “flow” theory ([Csikszentmihalyi, 1990](#_ENREF_41)). People enjoy complex tasks which they themselves choose to do. In making innovations, teachers are involved in a process which enables them to create complexity and interest for themselves.

It is appropriate to mention that the innovating teachers in this study all mentioned that they had their administrator’s support. The teachers felt trusted and in many cases encouraged to try new approaches to effective learning. Without the approval of the administration for the teachers to conduct informal teaching “experiments” in the classroom, in most cases the teachers would not have been able to act as they did. This experience supports works which emphasise the importance of supportive administrators ([Borman & Dowling, 2008](#_ENREF_22); [Butler & Sellborn, 2002](#_ENREF_29); [Ingersoll, 2001](#_ENREF_105)).

Beyond appreciating their administrator’s support, teachers appreciated other supports such as their closer colleagues, friends, and family. The teachers went beyond this as well, and they created supportive, sharing professional communities whilst initiating innovations. However, these supports of friends, family, and colleagues were not deemed essential to the teacher’s innovation. Sleegers ([1999](#_ENREF_197)) noted that working conditions affect teacher identity, which in turn affects working conditions, but in this study the teachers did not consider their identities as innovators to be dependent upon the working condition of colleagues innovating alongside them or upon extended support systems. This is perhaps because the teachers in the study felt they had the trust of their administrators.

**Catalysts and Motivators for Initiating Innovations**

Teachers often experience a catalysing event which causes them to develop motivation to initiate an innovation. Of course, this is not always true. What is quite interesting are the following points regarding what was not influential for the study participants in their choice to initiate an innovation. None of the participants mentioned any of the following as influential:

* Laws, policies, and curriculum standards,
* School administrators’ suggestions on classroom improvements,
* Desire to enact social change,
* Professional literature and/or video, including both text and Internet sources,
* Required formal professional development experiences, or
* Parents.

As mentioned above, the teachers in this study often did experience catalysing events which resulted in the motivation to initiate an innovation. Some teachers did not experience one catalysing event but did develop a motivation to attempt an innovation. Catalysts and motivations typically sprang from:

* Formal professional development experiences of the teacher’s own choosing;
* Affective issues such as the teacher’s personal boredom;
* Objective issues like the teacher’s desire to help students learn better (more influential than the teacher’s realisation of personal boredom) and textbooks which failed to meet needs (through not addressing state standards, not going in-depth enough, and being “boring”); and
* Conversations with colleagues and with their own children.

Some of these influential factors have already been documented: the desire to help students learn better (one case each in [Ritchie & Rigano, 2002](#_ENREF_177); [Schulz, 1994](#_ENREF_187)); the desire to diversify ([as arguably related to personal boredom in Huberman, 1993](#_ENREF_104)); and a conversation with a colleague ([one case, in Connelly & Clandinin, 1988](#_ENREF_36)). The factors of textbook failure and the teachers’ conversations with their own children do not appear to be well documented.

**A Schematic of Teachers’ Experience Whilst Initiating Innovation**

At this point it is appropriate to introduce a schematic of the processes the participant teachers experienced. In explaining the model, a hypothetical group of teachers will serve for the purpose of discussion, which will put the discussion into the present tense rather than the descriptive past tense of the rest of the study.

The schematic begins with innovation catalysts and motivations, as mentioned earlier. The teacher considers the hurdles he or she will encounter whilst innovating. The teacher decides to plan an innovation in spite of possible hurdles, anticipating that the innovation will have more positive than negative results. A visual, Figure 16, may help.

|  |  |
| --- | --- |
| **Motivations and Catalysts for Initiating Innovations** | |
| **Affective**  **For the teacher’s benefit**  Personal boredom  Social-professional outlet  Teacher-chosen professional development | **Objective**  **For the students’ benefit**  Textbook failure  Help students learn better  Teacher-chosen professional development |

|  |  |  |
| --- | --- | --- |
| **No**  **professional development**  Previous experience  Conversations with own children | **Informal**  **professional development**  Internet  Colleagues  Travel | **Formal**  **professional development**  Classes  Workshops  Conferences  Pre-service training |

|  |
| --- |
| **Hurdles:** Changing standards  Need for test preparation |

|  |
| --- |
| **Action taken:**  Innovation planned |

*Figure 16.* First stages of initiating innovations.

Once in the planning process, the teacher begins to think through the ramifications of his or her innovation. He or she now anticipates specific benefits and difficulties in the innovation; the benefits and difficulties which are in the objective categories tend to be spoken of with more strength than do the benefits and difficulties anticipated in the affective areas. Teachers in this study appeared unafraid to acknowledge both their doubts about the innovations and their desires to have students enjoy the innovative work. Although the teacher anticipates some difficulties, he or she weighs the anticipated benefits and difficulties and in this model decides to proceed with the innovation. The next part of the visual fits here, as shown in Figure 17.

|  |  |  |  |
| --- | --- | --- | --- |
| **Anticipated affective issues**  **for both students and teachers** | | **Anticipated objective issues**  **for both students and teachers** | |
| **Benefits**  Personal learning  Socialize  Encouragement  Challenge | **Difficulties**  Nervousness  Student buy-in  Negative feedback  Honouring student contributions | **Benefits**  Concept application  Increased rigor  Alignment with philosophy  Alternative to lecture | **Difficulties**  Curriculum coverage  Incomplete plans  Lack of effectiveness research  Appropriate for level  Assessment  Technology  Time |

|  |
| --- |
| **Action taken:**  **Innovation implemented** |

*Figure 17.* Anticipations when planning innovations.

The teacher lets the innovation take place as planned but does find that he or she may need to adjust for difficulties, both anticipated and unanticipated. These tend to be minor fluctuations within the innovation. During the innovation the teacher observes both students and self; after even a short amount of time of operating with the innovation, the teacher may notice the realised benefits and difficulties of the innovation, which adds another section to the visual, now Figure 18.

|  |  |  |  |
| --- | --- | --- | --- |
| **Realised affective issues**  **for both students and teachers** | | **Realised objective issues**  **for both students and teachers** | |
| **Benefits**  Personal learning  Socialise  Encouragement  Challenge  Ownership  Fun  Enjoyment  Opportunity for refinement  Student interactions  Need for student interaction management decreases  Desire to share  Student buy-in  Student initiative  Confidence in quality of student-led work  Parent involvement  Student feedback | **Difficulties**  Honouring student contributions | **Benefits**  Concept application  Increased rigor  Align teaching with  philosophy  Alternative to lecture  Better student understanding  High quality student work | **Difficulties**  Incomplete plans  Assessment  Technology  Time |

*Figure 18.* Realised benefits and difficulties resulting from innovations.

This visual makes the result quite obvious. Though the teacher’s anticipated benefits and difficulties in objective areas generally did occur during the innovation, the teachers’ anticipated affective difficulties did not develop. Only one of the difficulties was anticipated in this area; that was the difficulty of honouring student contributions. This was anticipated by only one teacher. However, all but one of the teachers mentioned this difficulty.

Also worth spending thought on is the finding that teachers mentioned many more benefits, in both affective and objective areas, than they had anticipated. It was as if the teachers were surprised at how well their innovations worked. It is possible to tie the whole issue up with a ribbon proclaiming that teachers plan innovations in order to increase better student learning and to avoid personal boredom, but whilst teachers do anticipate both benefits and difficulties, they anticipate far fewer benefits than those which actually result from their innovations. At the same time, the difficulties which they anticipate either don’t materialise or “solve themselves,” such as the need to learn a particular technological application. Whilst the teachers may have a vision for what is possible in terms of “success,” the possibilities for success are greater and affect more aspects of the class than teachers envision when planning.

In this study, the teachers did not experience what Christensen et al. ([2008](#_ENREF_32)) implied would occur in education, an echo of technology innovations: an innovation when first introduced does not perform as well as the established approach in its own market. The teachers in this study found that student interactions, initiative, and understanding were all increased with use of the innovation over the established approaches. The one flaw here is that this evidence does not rely on pre- and post-test data but on teachers’ anecdotal and vignette evidence.

If the teachers get so many benefits from their innovations without experiencing overwhelming difficulties, then what happens when teachers decide to work through another iteration of their innovations? In this study, whether or not the succeeding iteration was even attempted depended upon events in the teachers’ identities. Teachers repeated their innovations if their personal, situated, and professional identities were relatively stable, or without major change (in the teacher’s viewpoint), from one semester or year to the next. These teachers did not just repeat the innovation as it existed the first time. They used input from both students and their own observations to make alterations, some of which were rather major. On the other hand, teachers whose personal and situated identities experienced major events did not work through a second iteration during what they considered a short-term phase of adjustment to the instability. In this study, the examples of these major events were childbirth in the personal realm and changing schools in the situated realm. These teachers all did plan to return to the innovation upon reaching stability. The innovation-repeat or lack thereof recalls the evidence from Day, et al. ([2007](#_ENREF_55)), which found that situated, professional, and personal identities significantly influence teacher effectiveness. In this case, not effectiveness but the sustaining of innovation was affected.

In contrast to the teachers who dropped innovations because of situated and personal instability are those who dropped innovations because of professional instability. The teachers in this study expected that situated and personal events which discouraged second iterations would stabilise and that they would return to their previously used innovation. Teachers who experienced major changes in professional identities, such as heavy testing emphasis, thought of their affecting events differently. One participant called the professional changes which negatively influenced her innovations “out of control;” she did not expect the professional realm to return to a state in which the previously used innovation could be incorporated. Like this teacher, others in this study who experienced change in the professional realm also either made substantial alterations to their innovations or dropped them altogether. This reaction is not surprising, given the feelings of frustration, confusion, and micro-management reported in several studies ([Day, et al., 2007](#_ENREF_55); [Fullan, 2001](#_ENREF_71); [Rentner, et al., 2006](#_ENREF_176)).

The end of the visual thus appears as Figure 19 presents.

|  |
| --- |
| **Hurdles:**  Professional, situated and personal changes |

|  |  |  |
| --- | --- | --- |
| **Decision** | | |
| Comply with professional changes  Flex with situated and  personal changes  Make refinements  Second iteration of innovation  planned and implemented | Wait for influential situated and personal changes to stabilise before second iteration  Expectation that situated and personal changes will stabilise | Adjust to professional changes by abandonment of or major alteration to the innovation  Frustration  “out of the teacher’s control” |

*Figure 19.* Second iterations of innovations.

The visual as a complete entity then becomes as Figure 20 shows.

|  |  |
| --- | --- |
| **Motivations and Catalysts for Initiating Innovations** | |
| **Affective**  **For the teacher’s benefit**  Personal boredom  Social-professional outlet  Teacher-chosen professional development | **Objective**  **For the students’ benefit**  Textbook failure  Help students learn better  Teacher-chosen professional development |

|  |  |  |
| --- | --- | --- |
| **No**  **professional development**  Previous experience  Conversations with own children | **Informal**  **professional development**  Internet  Colleagues  Travel | **Formal**  **professional development**  Classes  Workshops  Conferences  Pre-service training |

|  |
| --- |
| **Hurdles:** Changing standards  Need for test preparation |

|  |
| --- |
| **Action taken:**  Innovation planned |

|  |  |  |  |
| --- | --- | --- | --- |
| **Anticipated affective issues**  **for both students and teachers** | | **Anticipated objective issues**  **for both students and teachers** | |
| **Benefits**  Personal learning  Socialize  Encouragement  Challenge | **Difficulties**  Nervousness  Student buy-in  Negative feedback  Honouring student contributions | **Benefits**  Concept application  Increased rigor  Alignment with philosophy  Alternative to lecture | **Difficulties**  Curriculum coverage  Incomplete plans  Lack of effectiveness research  Appropriate for level  Assessment  Technology  Time |

|  |
| --- |
| **Action taken:**  **Innovation implemented** |

*Figure 20, page 1.* What explains teacher-initiated innovation? Study evidence.

|  |  |  |  |
| --- | --- | --- | --- |
| **Realised affective issues**  **for both students and teachers** | | **Realised objective issues**  **for both students and teachers** | |
| **Benefits**  Personal learning  Socialise  Encouragement  Challenge  Ownership  Fun  Enjoyment  Opportunity for refinement  Student interactions  Class management  Desire to share  Student buy-in  Student initiative  Confidence in quality of student-led work  Parent involvement  Student feedback | **Difficulties**  Honouring student contributions | **Benefits**  Concept application  Increased rigor  Align teaching with  philosophy  Alternative to lecture  Better student understanding  High quality student work | **Difficulties**  Incomplete plans  Assessment  Technology  Time |

|  |
| --- |
| **Hurdles:**  Professional, situated and personal changes |

|  |  |  |
| --- | --- | --- |
| **Decision** | | |
| Comply with professional changes  Flex with situated and  personal changes  Make refinements  Second iteration of innovation  planned and implemented | Wait for influential situated and personal changes to stabilise before second iteration  Expectation that situated and personal changes will stabilise | Adjust to professional changes by abandonment of or major alteration to the innovation  Frustration  “out of the teacher’s control” |

*Figure 20, page 2.* What explains teacher-initiated innovation? Study evidence.

Reduced to essentials, the visual becomes less specific and perhaps useful as a model, as in Figure 21.

|  |  |
| --- | --- |
| **Motivations and Catalysts for Initiating Innovations** | |
| **Affective issues**  **For the teacher’s benefit** | **Objective issues**  **For the students’ benefit** |

Teacher may make a decision to not actively pursue a solution at this time

|  |  |  |
| --- | --- | --- |
| **No**  **professional development** | **Informal**  **professional development** | **Formal**  **professional development** |

Teacher decides to take action based on motivators, catalysts, and experiences

|  |
| --- |
| **Hurdles:**  **Professional and situated environments** |

|  |
| --- |
| **Action taken:**  **Innovation planned** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Anticipated affective issues**  **for both students and teachers** | | **Anticipated objective issues**  **for both students and teachers** | |
| **Benefits** | **Difficulties** | **Benefits** | **Difficulties** |

Teacher anticipates and weighs benefits and difficulties

|  |
| --- |
| **Action taken:**  **Innovation implemented** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Realised affective issues**  **for both students and teachers** | | **Realised objective issues**  **for both students and teachers** | |
| **Benefits** | **Difficulties** | **Benefits** | **Difficulties** |

|  |
| --- |
| **Hurdles:**  **Professional, situated, and personal changes** |

Teacher weighs realised benefits, difficulties, and hurdles

|  |  |  |
| --- | --- | --- |
| **Decision** | | |
| **Flex with changes**  **Make refinements**  **Second iteration of innovation**  **planned and implemented** | **Wait for influential changes to stabilise before second iteration** | **Abandon or make major alterations to the innovation** |

*Figure 21.* What explains teacher-initiated innovation? A model.

**Possible Uses of the Innovation Model**

The model as presented could provide some useful predictions for teachers, change agents, and those otherwise involved in school systems who have an interest in improving education. Three aspects of this study in particular may make this model helpful across education populations: (1) the participants’ students represented the economic diversity of the state as a whole, (2) the participants were teachers of kindergarten through university students, and (3) the evidence was in the form of the teachers’ opinions and observations as stated to a researcher who had no role in their employment.

The model is possibly useful and helpful in at least five ways. Sections which follow the list below will expand on each point separately:

* Suggesting effective approaches to improving education,
* Predicting the possible effectiveness of types of professional development experiences,
* Suggesting approaches to organising faculty professional development experiences,
* Providing educators with an expected model of process, and
* Encouraging teachers to look for and track changes which are not initially anticipated.

**Suggesting effective approaches to improving education.**

This model may be used to suggest effective approaches to improving education, particularly time and opportunity for teachers. Departments of education have published encouragements to innovative ideas within education, but teachers have been reluctant to pursue unusual ideas because of the emphasis on standardisation and performance ([Halpin, et al., 2004](#_ENREF_88)). Some department of education grants require that proposed innovative ideas have proven effectiveness, a requirement which in itself appears contradictory.

Whilst teachers are not motivated to initiate innovations because of laws, standards and policies, teachers are not necessarily hostile to these governing elements. Teachers do at times feel defeated by the ways in which standards change and test results are used or proposed to be used. Teachers in this study mentioned four particular perceived defeating elements of standards.

* One participant mentioned that the state standards in his subject and grade level had changed several times within the past eight years; these included additions and deletions of whole topic areas.
* An example of test results being poorly used is the suggested tying of teacher salary to student standardised test performance without controlling for variability factors, an issue which a participant teacher said returns to school boards for consideration every few years.
* Teachers also mentioned that standardised test performance is reported in newspapers, but influencing factors such as new textbooks, different tests, or major affecting events are not discussed in the reports.
* Finally, teachers feel defeated when they know students could easily develop deeper understanding of topics if the object of their class was to develop understanding rather than to pass standardised tests. In this case, available time was a limiting factor.

Still, the teachers do not think poorly of state and national standards. The teachers in this study appreciate the general direction and framework which standards give them, and they teach according to the standards in their discipline whether or not the students are given a state exam on the topics. Not only do teachers teach according to the standards in their discipline when there is no oversight, but the teachers also create teaching materials when their textbooks and schools do not provide teaching material for the standards expected. Teachers at the university level likewise prepare their classes with national standards and pre-service teacher testing in mind.

What standards, standardised testing, and textbooks did not inspire in the participant teachers was innovative teaching. A few participants noted one particularly helpful mathematics text; another participant noted that the texts in his teaching area had been improving over the years. But the texts themselves did not inspire innovations. Teachers in this study were most strongly motivated to initiate innovations because of concerns with their students: they wanted their students to learn better. Almost as influential as the desire to help students learn better was the teacher’s own desire to alleviate personal boredom which was inspired by the testing and the textbooks; they wanted to teach in more inspired ways. If the innovation also provided a social-professional outlet for them as teachers, that served as an added benefit.

Teachers are highly motivated to help students learn, but teachers know that they can feel under-challenged and bored by aspects of their jobs. Teachers who participated in this study did not find vitality inspired by textbooks and standardised testing; although these teachers saw textbooks as valuable resources, they enjoyed developing their own resources and lessons. In order to do this, these teachers needed the opportunity to pursue professional development and planning time to incorporate new knowledge into existing courses.

**Predicting the possible effectiveness of types of professional development experiences.**

No teacher in this study cited a school- or district-required formal professional development experience as influential in a decision to innovate. Most teachers did cite as influential a formal professional development experience, but this was one of their choosing. Conferences and workshops, which were usually paid for through school district professional development funds, were particularly influential. When the teachers combined the professional development experience with their own identified motivations for initiating innovations, changes within their classrooms occurred. Teachers do find that changing educational standards and the need to prepare students for standardised tests impede their efforts at innovating, but teachers also usually find ways to negotiate these hurdles if the teachers view them as hurdles rather than as roadblocks. This adaptation and mediation of demands has also been found among Hong Kong teachers ([Day, 2000](#_ENREF_51)) and British teachers ([Helsby & McCulloch, 1996](#_ENREF_96)).

Not all teachers mentioned professional development opportunities as having influenced their innovation. These teachers researched alternatives on their own or with others; these teachers particularly mentioned the amount of time they spent planning for the innovation. Some noted that they spent several hours a week and “most of the summer” planning.

**Suggesting approaches to organising faculty professional development experiences.**

Teachers’ innovations begin through either realising a need or through attending a professional development event of their own choosing. Because the innovation process begins here, school leaders could improve faculty innovations through directly supporting both faculty reflection and faculty-chosen professional development experiences. Since required professional development is not seen as influential in teachers’ innovations, perhaps school administrators could minimise whole-group experiences and instead provide either funds for personally-chosen professional development or specific release time to pursue Internet resources such as those provided formally by TeachersTV ([2008, online and broadcast in the United Kingdom](#_ENREF_59)) and Scotland’s department of education ([Learning and Teaching Scotland, 2010](#_ENREF_130)) [[12]](#footnote-12). Less formal sites, such as blogs, forums, and TeacherTube ([2008](#_ENREF_198)), may also help teachers find and share ideas to use in their classrooms. Allowing teachers time to research and develop innovations would help change the education focus from isolated events in practice to the teachers’ lives in the classrooms: what do the teachers themselves determine as needful, and what solutions can they research and then attempt? This attitude reflects those recommended through motivation theories ([Csikszentmihalyi, 1990](#_ENREF_41); [Gerjets & Scheiter, 2003](#_ENREF_76); [Rudow, 1999](#_ENREF_180)), education commentary ([Goodson & Hargreaves, 1996](#_ENREF_81)), and through professional organisations (["National Board for Professional Teaching Standards," 2010](#_ENREF_160)).

Teachers appreciated the social-professional aspects of some of their opportunities. Teachers in this study enjoyed combining social-professional events with their innovation or learning; when these events didn’t exist, the teachers created them. School leaders could build on teachers’ desire for social-professional outlets combined with innovations; it is possible that innovations have a greater chance of sustainability when there is a group supporting the innovation, particularly if the innovation feels like a major change for the teachers involved. Learning with peers has been argued to be more effective than other kinds of professional learning ([Hodkinson & Hodkinson, 2005](#_ENREF_100)), and networking and collaborating at the school levels reduces attrition ([Borman & Dowling, 2008](#_ENREF_22)), so this kind of faculty development could be particularly beneficial. The group could exist either within the school, with several people attempting the same sort of innovation, or external to the school, facilitated through Internet-based forums or in-person meetings. In the case of forums, it is possible that technology fellows could create forums or at least group e-mail lists for interested parties.

Faculty leaders, such as school administrators, could also lead faculty through developmental self-analysis. In this study, one-sixth of teachers volunteered that conversations with their own children regarding learning were influential in their choice to initiate an innovation. Faculty could be asked to reflect on and process conversations with their own children, or they could be asked to interview one of their own students about learning experiences. Sharing these conversations and interpreted experiences with each other could be a powerful addition to the concept of professional learning communities. Although pre-service teachers are often asked to do this during their university training, it is likely that few teachers are specifically provided with time to do so during their teaching. Likewise, faculty meetings could include sharing experiences gathered from casual experiences, such as travel or Internet perusal.

**Providing educators with an expected model of process.**

Initiating innovation can be challenging and even overwhelming. The teachers involved in this study did have doubts about their innovations. They anticipated difficulties, both in objective areas such as assessment and working with technology, and in affective areas, such as whether or not students would “buy in” to an alternative teaching method. Faculty members pursuing innovations can be supported through providing them with a measure of realism, which this model can provide. For instance, teachers might be coached to anticipate benefits and difficulties in both these areas, figure out “work-arounds,” and then periodically return to the plans to evaluate their stage and note that their progress is “normal.” This may alleviate vague feelings that the innovation is not going fast enough or well enough and may encourage realistic evaluations and timeframes. The immediate needs of students and of planning can impede teachers’ efforts at innovation, so the faculty leader could facilitate time blocks in which to revisit teachers’ plans and desires for change, as well as allowing the teachers to revisit the effectiveness of those plans and the changes made.

One area of innovation which is controlled for in most textbooks is the area of student diversity. Teachers who belong to dominant cultures may have particular difficulty in sensitivity to sub-dominant student cultures. The same is true of teachers who learn easily in a particular mode; it can be difficult to incorporate other ways of learning. With respect to these factors, teachers’ innovations may be less than ideal. Faculty leaders can arrange for specific time to be spent on attention to these details, asking the teachers to examine how the innovation may affect the learning of sub-populations.

**Encouraging teachers to look for and track changes which are not initially anticipated.**

In this study there were a high number of discoveries which teachers made in the area of unanticipated affective benefits of their innovations. Another highly interesting result was that the teachers anticipated difficulties which did not mature, and they experienced difficulties which they did not anticipate. Teachers who innovate would be aided by tracking these experiences: the first (benefits), for the purpose of validating innovations beyond standardised test results and other objective measures; the second (difficulties), for a measure of realism if the teacher is inclined to think that he or she will be able to anticipate most problems.

**Evidence of Storyline Effectiveness as a Teaching and Learning Method**

The point of this study was not to investigate the effectiveness of the Storyline pedagogy and curriculum organisation. Current emphasis in education is on “what works,” or proven educational methods. The lack of empirical research on Storyline effectiveness was mentioned as a concern of some of the participants; again, the point of this study was not to alleviate those concerns by investigating Storyline effectiveness. However, the study did reveal several points about Storyline which until this point have not been formally investigated and discussed in the literature. This study of 8 Storyline teachers (Phases 2-3 participants), who ranged from kindergarten through university teachers, reveals several points about teachers and Storyline, each of which will be discussed separately:

* Storyline provided more benefits in the objective realm than teachers anticipated;
* Storyline provided many more benefits in the affective realm than teachers anticipated;
* Storyline teachers experienced quite a bit of doubt before beginning the Storyline, particularly in the affective areas, but only one of those was realised; and
* Storyline teachers did not usually anticipate the difficulty of honouring student contributions, but nearly all experienced this phenomenon.

**Storyline provided more benefits in the objective realm than teachers anticipated.**

The teachers who innovated with Storyline foresaw four benefits in the objective realm of their situations. They spoke of benefits such as Storyline providing opportunities to apply concepts, increase course rigor, align teaching method with philosophy, and simply providing an alternative to lecture format. These benefits were all realised. The teachers did not anticipate that the students would demonstrate more complete conceptual understanding, and the teachers did not anticipate that the student work would be of higher quality than demonstrated in previous classes taught more traditionally. The teachers spoke with surprise of these events, using phrases such as “that hasn’t happened before” and “holy cow” when relating vignettes which demonstrated to them the student understanding. This recalls the experience of a Swedish teacher, who said he had “never come across a more powerful teaching and learning structure” ([Lindberg, 2007, p. 164](#_ENREF_140)).

**Storyline provided far more benefits in the affective realm than teachers anticipated.**

The teachers who innovated with Storyline foresaw four benefits in the affective realm of their situations, but they spoke of these with less conviction than those they anticipated in the objective realm. In other words, for most of the teachers, the stronger anticipated benefits were those related to conveying course content. One participant’s primary anticipated benefit was of personal encouragement; she was the lone teacher who had felt particular discouragement due to emphasis on standardisation and NCLB. Two other participants noted that they were change- and challenge-oriented teachers anyway, and Storyline provided a way to address these personal needs. Other anticipated benefits were of an opportunity to increase their own personal learning and to socialise, both with their close colleagues and with colleagues in nearby schools.

Just as teachers spoke with surprise of the unanticipated benefits in the objective realms of their classes, the teachers were surprised by unanticipated benefits in the affective realms. They cited their former students who told them in casual conversation that the Storyline class work was “so much fun;” the teachers themselves said of Storyline that “We’re having so much fun that it’s not work,” and that “The three hours of class fly by.” Not only were teachers surprised that they and their students enjoyed class, but they also were surprised by the degree of student initiative in pursuing content-related knowledge and application. These remarks are similar to those made by Adamson ([2007](#_ENREF_2)), who said that Storyline “brought out the best” in her students.

**Few of the difficulties Storyline teachers anticipate are realised.**

The ability to anticipate difficulties is a necessary characteristic for effective teachers, and doubts are possibly quite common to teachers who begin innovations. Participants in this study certainly had doubts prior to beginning their innovations; many were related to objective issues such as assessment, incorporating technology, and being able to complete the required curriculum whilst using a narrative format. Most of these anticipated difficulties were realised, though the teachers worked through them. Teachers decreased the difficulties in subsequent iterations of the innovation. The curriculum coverage issue was realised only by one teacher, whose coverage depended on students to arrange for guest speakers – which was not really a fault of the narrative Storyline work.

**Honouring student contributions was a common unanticipated difficulty.**

The one significant issue with teachers’ anticipated difficulties had to do with honouring student contributions. Because honouring student contributions is a significant part of teaching with Storyline, it bears particular relevance in the study. In Storyline, as the students take on characters and have them act within the plot which drives discoveries within the curriculum, the students work from the point of view of their character. When asked to provide the character’s name, family, and a few personality characteristics, Storyline students often spontaneously also add details and back story as well. One university student asked if it would be okay with the participant instructor if he as the student began introducing plot in this manner, but in Storylines typically this occurs spontaneously and is usually quite fitting. For instance, in one study participant’s classroom where the teacher’s character left notes for the students’ characters, students spontaneously began to do the same. It is more awkward for the teacher, however, when the contributions do not fit what the teacher foresaw. In this study, awkward characters included a castle torturer, a stereotyped Scot, and Jesus.

Only one participant anticipated that students might make contributions to the story which could be awkward to handle. He imagined a scenario in which students might create a “thug” character with the playful intention of being silly, and he planned that the students would then be required to stick with that character throughout the Storyline. This participant anticipated that the difficulty of the contribution could be turned to good use, that then the creators might develop an appreciation for their own future students who might resemble the Storyline thug.

Although only one teacher foresaw the difficulty of honouring student contributions, all but one of the teachers remarked that this was a bit of an issue in their classrooms. McNaughton ([2007](#_ENREF_154)) points out that as in drama, there is no right answer in creating a character or how the character responds to situation; because of this, there can be both a high level of cognition and learning. An example of this occurred in this study through “Monster Bat.” A kindergarten student created the character “Monster Bat” who inhabited the Enchanted Forest. Monster Bat caused some fear and consternation on the part of the other students and their characters who were initially afraid of Monster Bat. The teacher let the students work through the character identities and helped them a bit through reading non-fiction books about bats, but mostly the teacher allowed the student conversation to solve the issue. Over the course of several weeks, the class came to consensus regarding Monster Bat’s role, and in the end the students assigned the culminating event’s central character role to Monster Bat. This experience was quite significant in the classroom dynamics as a whole, as Monster Bat’s creator had Asperger’s Syndrome. The teacher could have solved the issue for the children, but because she did not, this student was not only included in the others’ social lives but ended up central to the class work. This recalls the “strong sense of collaboration and inclusivity” which McNaughton ([2004, p. 151](#_ENREF_152)) found that children exhibited whilst in a drama adaptation of the Storyline structure.

The difficulties inherent in using Storyline have been acknowledged in the Storyline literature. Hofmann ([2007](#_ENREF_101)) wrote that the freedom of choice and self-expression which Storyline advocates “is not always easy” for the teachers, because they are “simultaneously making sure the learning goals are being met and curriculum coverage achieved” (p. 68-69). The narrative approach of Storyline is usually quite different from teachers’ prior experience, and because of both this and the need to honour student contributions, the implementation can be particularly difficult ([S. Bell, 2007](#_ENREF_13)). Teachers may decide to use others’ Storyline plans rather than their own, in an attempt to decrease the complexity ([Greven & Kuiper, 2007](#_ENREF_84)).

**Conclusion**

It is not necessary to use a narrative structure such as Storyline in order for teachers to improve student learning or to relieve personal boredom and thus retain vitality in their teaching. Teachers in this study did reveal that their Storyline innovations did result in these benefits. However, administrators should be quite aware that their support is necessary for teachers to feel that they can use their professional judgements in creating classroom situations which allow for more overall vitality. Teachers may appreciate their administrators creating situations in which they are encouraged to reflect on conversations and classroom events which either lead to of result from innovations. Administrators can also help teachers in identifying areas which may not be addressed through personal innovation, such as making sure that innovations also fairly address the needs of particular students (gifted, special services, and/or minority cultures).

**Chapter Eight**

**Conclusions**

**Introduction**

How can work be made

more humane, more creative, and more meaningful?

([Csikszentmihalyi, 2009](#_ENREF_42))

This question, written for a general interest publication, could have been one that the teachers in this study could have written. How can I make my students’ work of learning more meaningful? How can I inspire my students to enjoy learning? How can I make my own work more interesting and more compelling to enjoy for the long term? The teachers interviewed for this study inadvertently asked and answered these questions through creating their own classroom innovations.

The main aim of the study was to explore the views of South Dakota teachers concerning their involvement in initiating curriculum change. The study began with the theoretical perspective that teacher-initiated innovations might be explained through motivation theory which explains high-engagement computer games ([Malone & Lepper, 1987](#_ENREF_144)), particularly the ideas that appropriate degrees of challenge and control contribute to higher user engagement. Other theories of motivation, such as self-determination ([Martin & Dowson, 2009](#_ENREF_148)), action-control ([Gerjets & Scheiter, 2003](#_ENREF_76)), and flow ([Csikszentmihalyi, 1990](#_ENREF_41)) also contributed understanding of teachers’ self-initiated innovations. These theories shared motivating elements such as challenge and control. The explanation was enhanced through understanding teachers’ career cycles and values as explained in the holistic research in teachers’ lives ([Day, et al., 2007](#_ENREF_55); [Huberman, 1993](#_ENREF_104); [Jerslid, 1955](#_ENREF_107); [Lortie, 1975](#_ENREF_142)).

Two studies in teachers’ lives ([Day, et al., 2007](#_ENREF_55); [Huberman, 1993](#_ENREF_104)) discussed teachers’ career stages and elements of identity, both of which were found to have some bearing in this study, as is shown in the summaries of the findings chapters below. The existing literature and the results of this study together provide a body of information on teachers and innovations which has implications for schools at the local level. The results also provide suggestions for school administrators in how to address local issues of teacher quality and teacher retention.

**The Context of the Study**

The study participants were K-12 (ages 5-18) and university teachers in and near a large market town in eastern South Dakota, in the northern Great Plains of the United States. The larger area is socially stable and rural; residents are mostly whites who tend to live in the same community in which they work.

Teachers in the study self-initiated a variety of innovations. These innovations included projects, dramas, laboratories, and student-written mathematical investigations; 22 teachers were already in the process of innovating when the study began. Another 8 teachers were followed during the course of the study, through a series of interviews as they innovated with the Storyline curriculum planning and teaching method. Storyline was chosen as the common context for the innovations because this method relies on a narrative mutually created by the teacher and his or her students and therefore is quite different from the usual textbook-suggested teaching alternatives.

**The Gap in the Existing Literature**

Teacher-initiated innovation appears to be a rarely investigated field. Whether the analysis is of educational systems over the course of a century or the analysis is of investigations into one teacher’s experience, studies on education and change generally have been centred on change initiated by those other than teachers. There is a lack of study in the area of teacher-initiated innovation, particularly where teachers also satisfy policy mandates. This lack is intensified when questions involve the effect of innovations on teachers’ identities.

Although there are many volumes written on curriculum theory, curriculum planning, and effective teaching, at the early part of the current decade few studies were available on K-12 teachers who write their own curriculum ([Keys & Bryan, 2001](#_ENREF_119)). That situation did not change much during the course of the past decade, and the lack of literature includes a lack of research on university teacher innovation. As a result, it is difficult to determine from the literature how widespread teacher-initiated curriculum change is.

**Rationale**

There are three elements of the study which were not only foundational to the study design but which also formed the rationale for the design and methodology. First, there is a lack of research in the area of teacher-initiated curriculum change, as mentioned above. Second, there is a lack of research in the Storyline approach to curriculum design. The third rationale for the study as conducted is that the literature search uncovered no studies in which teachers from primary, secondary, and tertiary school systems were present in the same study and acted in the role of learner using the same innovation.

**The Study Methodology**

The term “what works” in education is currently popular in political rhetoric and appears to demand positivistic-style research evidence. However, answers to questions in educational research may depend not only on the people involved and their contexts but also on understanding which processes work and how people adjust their processes in the presence of changing conditions ([Johnson, 2009](#_ENREF_109)). In terms of this study, the processes under investigation were teachers’ innovations and how they adjust them to situational and professional demands.

The main research question was, “What explains teacher-initiated curriculum innovation?” In order to investigate this question, I chose to include two perspectives: one from teachers who had already innovated (Phase 1 of the study), and the second from teachers as they worked through an innovation totally new to them (Phases 2 and 3 of the study). The participants were teachers whose experience ranged from a student teacher to a teacher with more than 40 years’ experience; the participants’ students ranged in age from 5 through adult.

Storyline served as the format for the Phases 2 and 3 innovations because of three main factors which Storyline provided:

* the participants were all unfamiliar with Storyline’s narrative format which teachers use in organising, thinking about, and presenting curriculum;
* the Storyline structure can be adapted by teachers in most teaching situations; and
* Storyline requires the teacher to use creativity and flexibility during both planning and teaching, factors which increased the demand on the teacher for innovation in the course of teaching.

In order for the study to be as informative as possible, the innovation elements of newness and of adaptability were essential. Storyline’s narrative structure provided this. The requisite creativity on the teacher’s part emphasised each participant’s ownership of the curriculum change.

The study relied on recorded, transcribed, and coded interviews with the participants. Each of the 22 Phase 1 participants was interviewed once in semi-structured situations in early 2008. During these interviews my role was one of interpretation. I became an agent of change when I introduced Storyline to the 8 Phases 2-3 participants in June 2008. This role changed into the role of interpreter (not the evaluator of implementation) as I interviewed these participants multiple times in both individual and group settings between June 2008 and October 2009. The multiple-case interview approach allowed for contextualised, in-depth probing and let teachers’ thoughts lead our conversations. Interviews allowed teachers to have a “voice” in the research, which was quite appropriate to the purpose of discovering teachers’ motivations and experiences. Based on these interviews, the findings chapters were divided into three sections: why teachers innovate, how they do so, and issues in sustaining innovations.

**Findings: Why Teachers Innovate**

Participant teachers were asked the open-ended question, “Why did you begin this innovation?” Catalytic events usually precipitated innovating for all teachers in the study. For two-thirds of the teachers, catalysts were formal learning experiences of the teacher’s own choosing; the realisation of personal boredom was an influential catalyst for nearly half the teachers. Two small groups of teachers mentioned conversations either with another teacher or their own children as catalysts for innovations. Other catalysts existed but were not common to the participants.

Motivations to innovate were more general reasons to innovate, outside of particular events identified as the catalysts. Teachers were not motivated to innovate for factors of career advancement or meeting standards, but slightly more than half did mention the positive influence of a social-professional outlet opportunity in connection with the motivation to initiate their innovation. The teachers were not motivated to innovate by monetary reward, public recognition, promotion opportunities, “group think,” or a sense of elitism. Most teachers innovated because they expected the innovation would help their students learn better, but almost as influential was the idea that an innovation would help the teachers add to their own enjoyment of their work and avoid personal boredom.

Some teachers said they were simply oriented toward enjoying and creating change, but more than half the teachers mentioned a boredom factor as influencing their decision to innovate. Two-thirds of the boredom-recognition group recognised the boredom issue within their first three years of teaching. Three-quarters of the teachers communicated that they wanted personal “fun” within the classroom environment.

For nearly half the teachers, these two factors of student learning and personal enjoyment were related to the failure of the available textbook in areas either of quality or of failing to address educational standards. Teachers simply felt they could do a better job than could the published material.

**Findings: How Teachers Innovate**

The most relevant question to this set of findings was, “What is the impact of self-initiated innovation on a teacher’s identity?” This could also be worded, “How does making curricular innovations affect a teacher?” The findings in this chapter were drawn from interviews with the Phases 2-3 teachers, who were in the process of initiating innovations with the narrative curriculum planning and teaching method Storyline, which was new to them.

Whilst planning their innovations, teachers anticipated both benefits and difficulties in objective areas of teaching, such as providing for course needs, and in affective areas, such as providing personal encouragement for themselves. The teachers found that the benefits they anticipated did occur. They began with doubts in some areas, but they had confidence that their innovations would result in enough benefits that the difficulties would not overwhelm their innovations. University and kindergarten teachers alike held doubts as to whether the imaginative, narrative Storyline method would adapt well to their learners’ ages, since Storyline appears at first glance to be best suited for the ages 9-11 group. They discovered that Storyline worked well for their own classes.

As with the doubts about the age group appropriateness, teachers found that most difficulties they anticipated did not become actualities. Only one of the eight teachers had foreseen that honouring student contributions to the co-constructed “stories” might be difficult, but all the teachers discovered some difficulty with this issue. The teachers tended to see the difficulties as comical rather than as problematic.

The teachers discovered many unanticipated benefits to their innovations, in both objective and affective areas. These included increased depth of student understanding and student initiative, as well as positive developments in student interactions. The participants did not anticipate that they would use words like “excited” and “fun” when describing their teaching. They also found that they developed questions. The participants spontaneously formed their own professional learning community to share their delights and frustrations with each other. All the Storyline teachers were surprised with the results of their innovations, particularly in the affective areas of their classes – the areas of student interactions, motivation, and feeling tone, as well as the teacher’s own attitude toward class.

**Findings: Sustaining Innovations**

How do teachers sustain self-initiated innovations? This was the question examined in this chapter. Teachers in all phases of the study were included in this section.

Teachers who sustained innovations first of all needed to be convinced of the worth of their innovations; they most often used their own observations of students and student feedback as evidence to encourage second iterations of the innovations. Teachers also needed to have stability in their identities; teachers who changed schools or who had major personal changes expected that the complexities of these situations would stabilise; they decided to wait for stabilisation before pursuing the innovation further. Teachers who did not experience identity instability pursued innovations into subsequent iterations and adapted their original plans for new groups of students, sometimes adapting or improving to quite a substantial degree.

Teachers cited administrator support and trust as supports for their innovation. Teachers of all age groups needed to be trusted to teach the standards as identified for their topic area. All said they had the trust of their administrator, and some also had school district money to attend professional development experiences of their own choosing or money to purchase materials they needed in order to implement their planned innovations. Many of the teachers mentioned that funds for professional development had decreased, and they also noted the need for planning time, particularly when working with innovations. Other situated supports, such as close colleagues, were helpful but not necessary. Personal supports, such as friends and family members, were not generally influential.

Support groups and professional learning communities were not necessary for the teachers in this study to innovate. However, teachers who were involved in more major changes, such as the primary school mathematics teachers and the Storyline teachers, sought out professional learning community experiences. These teachers did not see geographic or learner ages as barriers to sharing practice.

The Storyline participants (Phases 2-3) spontaneously created their own professional learning community. This was an unusual situation in which primary through tertiary teachers shared practice in wholly collaborative meetings with equal interest displayed in hearing of each others’ work. They were learning from each other as they had conversations about “real” education as enacted in their classrooms. The university teachers were no less willing than were the other teachers to admit where they had questions and where they were unsure of their next steps to take as they led their classes.

Nearly all the teachers in this study talked of difficulties or frustrations which extinguished, threatened, or limited sustaining self-initiated innovations in their classrooms. Most of these were related to professional factors outside of their control, such as changing standards or preparing students for standardised tests. Irritations with reforms which threatened previously used innovations were almost entirely limited to teachers with more than 16 years of experience in the classroom. However, teachers were not asking for a reduction in the complexity of their jobs.

**Discussion: Implications for Practice**

Teachers of students in all the age groups in this study (age 5 through adult) highly valued several aspects of their jobs:

* Relationships with students,
* The professional trust given to them by their supervisors,
* Professional development opportunities of their own choosing, and
* The opportunity to use their own ideas both to increase student learning and to keep themselves interested in their jobs, thus increasing both complexity and meaningfulness.

These points lead to suggestions for schools and school administrators. In order to find vitality in their jobs, the teachers needed the opportunity to pursue professional development and planning time to incorporate new knowledge into existing courses. Allowing teachers time to research, develop, and reflect upon innovations would help change the education focus from isolated events in practice to the teachers’ lives in the classrooms: what do the teachers themselves determine as needful, and what solutions can they research and then attempt?

This study can also help teachers know what to expect when they plan innovations. Teachers could be coached to identify predicted areas of benefit and difficulty, which would help them plan for the anticipated events. Teachers could also develop realistic timeframes for their innovations and evaluations which might identify for themselves their progress. During and after the course of the innovation, teachers could be encouraged to recognise the realised benefits and difficulties, which may be quite different from those which were anticipated.

One result of this study was evidence it provided on the narrative Storyline method of curriculum planning and teaching. This is an area of little research, and none of the existing studies or commentaries focus on teachers using Storyline. The participants of this study who used Storyline found

* more benefits in the objective realm than teachers anticipated;
* many more benefits in the affective realm than teachers anticipated, including personal fun and increased positive student interactions;
* they had concerns before beginning the Storyline, particularly in the affective areas, but only one of those concerns was realised; and
* most did not anticipate the difficulty of honouring student contributions, but most experienced this phenomenon.

**Critique of the Study and Methods**

As mentioned earlier, the participants were teachers whose experience ranged from a student teacher to a teacher with more than 40 years’ experience; the participants’ students ranged in age from 5 through adult. Through this variety and the participant-created professional learning community, this study addressed the call for studies which help develop the sense of community between teachers ([Barone, 1992](#_ENREF_9)) and emphasised the commonalities between teachers of learners at all levels. The professional learning community demonstrated the participants’ desire to learn from and share with each other, regardless of age group taught.

What this study provided was evidence of teachers’ processes, motivations, and feelings as they proceeded through initiating innovations in classrooms. The vehicle chosen, the narrative Storyline format, was challenging to the teachers in that it changed the teaching reference point from factual transmission of knowledge, as is usual for textbook presentations, to narrative interpreted by teachers and students together.

**Reliance on interviews.**

Gaining knowledge of teachers’ thought processes, motivations, and feelings can happen only through open-ended verbal exchanges, such as those in one-on-one interviews and group meetings, as were conducted in this study. It is possible that teachers’ viewpoints could also be examined through asking teachers to keep journals, but this was deemed onerous for the participants. The repeated interviews with Phases 2-3 teachers were spread over 16 months and did not reveal comments which were inconsistent within individuals over this time period.

**Researcher’s familiarity with participants’ professional lives.**

As a researcher with teaching experience at all participant levels and general subject areas, I was in a unique position to understand the participants’ work from their point of view. This facilitated conversation about their work. A researcher attempting to evaluate student understanding would have little reference point without changing the study from a focus on teachers to a focus on students, so allowing the teachers to define this was in keeping with the study design of a focus on teachers’ processes, motivations, and feelings.

**Monocultural study area.**

All interviews were conducted in a small geographic area which is fairly monocultural. This provided a measure of control for some variation. The monocultural nature allowed for as much similarity of experience as possible whilst also comparing teachers of learners in four age groups (primary school, middle and high school (secondary), and university).

The teachers’ wider culture is relevant to mention here as well. The personality of Midwestern residents is generally agreeable and conscientious. South Dakota in particular ranks low in personality characteristics of creativity and unconventionality ([Rentfrow, et al., 2008](#_ENREF_175)). This culture could have resulted in an unwillingness on the teachers’ part to admit boredom with adopted textbooks, talk about creative approaches, and begin innovations in the first place. These cultural characteristics may point to teacher-initiated innovation being wider spread and more common than this study suggests.

**Timing within the school year.**

Interviewing teachers during the school year as was done in this study meant that their work was fresh on their minds. Interviewing teachers during the school year also meant that interviews had to be scheduled around the teachers’ calendars. The standardised testing season and other seasonal school events may have influenced some teachers to not participate. These factors were probably more influential for the high school (student ages 14-18) teachers, who had more events than teachers of other ages.

**Possibilities for Further Research**

This chapter began with a quote from Csikszentmihalyi. In considering the direction of further research as suggested by this study, re-wording the quotation will be particularly useful: How can teaching be made more humane, more creative, and more meaningful? This question provides the direction for further research. How can teachers be supported in their careers? The sparse but consistent international literature suggests that teachers value meaningfulness, creativity, and complexity; they are motivated to provide effective learning experiences for their students and are willing to go beyond job descriptions to achieve these.

Further research, then, would consist of qualitative investigations specifically aimed at what provides teachers with meaning, creativity, and complexity and how administrators can support these dimensions. It would be possible to limit such a study specifically to teachers who use Storyline but also including teachers in many countries. Though the vehicle of Storyline may not be key to such a study nor evaluated for effectiveness, the networked community of Storyline teachers could provide understanding on an international level in the areas of teacher identity characteristics, teacher satisfaction, and teacher retention. Because an online network of Storyline teachers already exists, international-level research could be attempted through surveys and through interviews facilitated through Internet communication media.

Additional research in areas which are related to teachers’ needs for meaning, creativity, and complexity could be aimed at comparing assessments for alternative learning and teaching methods. One idea for this would be to use both narrative Storyline, which is intended to provide a measure of authentic learning, and project-based learning as comparative backdrops, thus providing data on measuresof student learning. The analysis and comparison of assessments could provide deeper understanding of what students learn in non-lecture situations and how teachers might most effectively assess the learning. Both quantitative and qualitative analyses would be used in a study such as this.

Finally, another obvious extension of the current study would be to investigate levels of teacher and/or student ownership and engagement as correlated with various teaching approaches. This would be most obvious in comparing lecture-based teaching with a narrative-based method such as Storyline, but it could also include lab-based classes and those based on project methods.

**Conclusion**

The sparse but consistent research literature has repeatedly noted that teachers value creativity and that when they teach for understanding, they find more meaning in their work. Taken together, flow theory ideas about creativity and meaningfulness appear that they could have grown from studies of teachers.

Along with their desire to help their students learn, the teachers expressed as motivators both boredom and the desire to have fun in their teaching. Some expressed discouragement from NCLB and the related increased demands and directives. Although formal professional development of their own choosing proved influential for many of them, some innovations were inspired simply through conversations with their own children or with colleagues.

Teachers approached their innovations intentionally and thoughtfully. They weighed perceived benefits and difficulties; they spent extra hours working with their innovations in order to make them as useful as possible. Once used, the teachers continued to adjust their plans for maximum student benefit.

What teachers did not tend to predict is how many benefits would result from their innovations. Primarily the teachers appeared oriented toward objective benefits, particularly better student understanding. Whilst planning innovations, teachers did not appear to be oriented toward affective benefits which did result, such as their own personal fun, higher levels of student initiative, or higher parent involvement.

In the end, what did the teachers in this study communicate?

* Teachers are interested in increasing student understanding of the content and are willing to exert much effort to make content more easily learned.
* Teachers have a need to enjoy their work and are willing to exert a great amount of effort in making their work even more complex through initiating innovations.
* University teachers could adapt a narrative and imaginative teaching method from K-12 education and find it effective, engaging, and fun for both teachers and students.

It is possible that if the message from these teachers is taken seriously by administrators, that teachers will experience satisfying careers which have as a result thoughtful students who have developed deeper understandings academic subjects.

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1. Backwards Design recommends planning from desired outcomes, stated objectives, and planned assessments through units to lessons, rather than planning from lesson to assessment. [↑](#footnote-ref-1)
2. The term “college” as commonly used in the United States is nearly synonymous with “university,” since both types of institutions grant bachelor’s degrees. Typically colleges do not grant post-bachelor’s degrees and usually there is a smaller emphasis on research, as opposed to universities. [↑](#footnote-ref-2)
3. 11 September 2001, the date of the attack on the Twin Towers in New York City, which was influential in current Middle East conflicts. [↑](#footnote-ref-3)
4. The exception of course is with the post-secondary teachers quoted from the online forum. There is no available evidence of their years of teaching experience. [↑](#footnote-ref-4)
5. For instance, Waldorf schools, those appealing to the gifted students, and those which teachers have started, some of which are described in Wolk and Rodman ([1994](#_ENREF_230)). [↑](#footnote-ref-5)
6. Students in my pre-service teachers’ class Computer-Based Technology for Teaching have also suggested this idea. [↑](#footnote-ref-6)
7. This university is organised by “colleges,” or groups of related subject areas. [↑](#footnote-ref-7)
8. Percentages are rounded. [↑](#footnote-ref-8)
9. Sara’s primary appointment is as a kindergarten teacher working within the local school district. However, she is also a part-time instructor at the university because her kindergarten classroom is on the university campus and she works with pre-service teachers. With the exception of this note of her formal status at the university, evidence from Sara has been used as a kindergarten teacher rather than as a university instructor, since she regards herself primarily as a kindergarten teacher. [↑](#footnote-ref-9)
10. No Child Left Behind Act, affecting K-12 education [↑](#footnote-ref-10)
11. National Council for Accreditation of Teacher Education, affecting teacher education programs [↑](#footnote-ref-11)
12. There does not appear to be a coordinated effort such as these in the United States. The United States Department of Education website is not recommended for the purposes of inspiration and help due to not being “user-friendly.” The website section “What Works Clearinghouse” ([United States Department of Education Institute of Education Sciences, 2010](#_ENREF_216)), whose title appears to lead to useful information for teachers, is not particularly helpful. For instance, under the heading Elementary Mathematics, 73 mathematics teaching interventions are listed but only 6 of these contain reports. Only 3 of these reports have been produced since 2007. State department of education websites likewise do not appear helpful in the area of professional development. [↑](#footnote-ref-12)