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Fostering Higher Order Thinking in a Technology-rich Classroom Environment: Learning from an Exemplary Middle School Social Studies Teacher

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Fostering Higher Order Thinking in a Technology-rich Classroom Environment: Learning from an Exemplary Middle School Social Studies Teacher

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Dedication

To my Mother

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Fostering Higher Order Thinking in a Technology-rich Classroom Environment: Learning from an Exemplary Middle School Social Studies Teacher

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Many educational reformers have advocated that emerging technology has a great potential for establishing a classroom environment that fosters children's higher order thinking. What then are the potentials and challenges in using emerging technology in social studies teaching and learning for higher order thinking? In particular, how do secondary school social studies teachers adopt modern technology to engage their students in active classroom learning?

This qualitative case study explored the ways in which social studies teaching practice was transformed into student-centered constructivist approaches during which students were engaged in higher order thinking activities when technology was richly utilized in a middle school teacher's classroom.

In this research study, I looked very closely at an 8th grade social studies teacher's classroom teaching and, more specifically, at an innovative unit of study which

was exemplary in the utilization of technology. I collected data from interviews, observations, and document analysis, all of which are typical forms of collecting data in case studies. The research site was a public school, located in an outer suburb of a large central city in Texas.

I present, to a certain extent, an intensive and thick account of the social studies teacher's classroom teaching and her students' learning in her natural classroom context. Understanding in great depth the teacher's considerable efforts at integration of various contemporary technologies in her classroom teaching, this study offers the real prospects and potential pitfalls of modern technology for the promoting of students' higher order thinking in secondary social studies classrooms.

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CHAPTER 1: INTRODUCTION

The Background and Problem

THE IMPERATIVE OF TEACHING THINKING IN SCHOOLS

The most important business of the schools should be the fostering of the child's thinking, there is no question about it among contemporary educators. Almost a century ago, John Dewey (1910/1997) asserted, "The main office of education is to supply conditions that make for [habits of thought]" (p. 28). Since he criticized conventional classroom practices which delivered fragmented piece of information and required coverage usually through rote memorization of vast amounts of materials, a number of contemporary educators have emphasized the imperative of teaching thinking in schools. As a consequence, there have been numerous researches on why thinking are worth teaching, what to teach about thinking, and how to teach thinking effectively. Recently, a leading educational theorist in the field, Matthew Lipman (2003) observed:

> Since the mid-1970s, the proponents of thinking in the school (and colleges) have become distinctly more numerous and more vocal. The banner they have unfurled is emblazoned with the phrase "critical thinking," and although neither they nor those who oppose them are very clear about just what critical thinking entails, the hue and cry continues to mount. This awareness among educators that something has to be done to improve the quality of thinking in the classroom has prevailed until now. (p. 2)

Why then is it important for schools to teach children thinking anyway? Reviewing a considerable body of past research on teaching thinking skills, Beyer (2001, p.275) provided four convincing reasons why schools should teach them thinking. First

and foremost, learning requires thinking. Second, most young students and novices at higher order thinking do not customarily attend to the kinds of factors required to solve problems effectively. Third, significant proportions of secondary school and college students cannot effectively carry out higher order thinking skills required for success in postsecondary education or in the world of work. And most importantly improved thinking does not normally occur as an incidental outcome of subject-matter learning.

In the past several decades, in social studies education a large number of theoretical and empirical studies (Oliver & Shaver, 1966/1974; Hunt & Metcalf ,1968; Newmann & Oliver, 1970; Beyer,1985, 1988; Engle & Ochoa, 1988; Parker, Mueller, & Wedling, 1989; Newmann, 1990a, 1990b; Stevenson, 1990; Onosko, 1990, 1991; King, 1991; Sears & Parson, 1991; VanSickle & Hoge, 1991; Ladwig, 1991; Johnston, Anderman, Klenk, & Harris, 1994; Byrnes & Torney-Purta, 1995; Hughes, 1997) have been conducted to investigate the effects of particular curricular and instructional approaches on students' higher order thinking. In particular, in the domain of history a great deal of renewed attention recently has been devoted to the studies on children's historical thinking (e.g., Seixas, 1998, 1999; Levstik & Barton, 1997; Stearns, Seixas, & Wineburg, 2000; Davis, Yeager, & Foster,2001; Wineburg, 2001; VanSledright, 2002, Barton & Levstik, 2004). The research endeavor of understanding children's historical thinking reflected fundamental epistemological shift in the nature of historical knowledge and new advance in learning theory (Dulberg, 2005; Fallace & Neem, 2005). It was a concerted effort to reform history education in grade school. While the curriculum focus vary, those educators shares a common belief that in social studies and history curriculum, cultivating children's thinking is much more important than merely transmitting decontextualized and fragmented piece of knowledge.

A prominent approach for the development of higher order thinking in social studies education might be issues-centered instruction, or in-depth study. It is "a teaching approach that uses social issues to emphasize reflective and often controversial questions in contemporary and historic contexts as the heart of social studies" (Hahn, 1996, p.25). Advocates of the issues-centered education (Oliver & Shaver, 1966; Hunt & Metcalf, 1968; Newmann & Oliver, 1970; Engle & Ochoa, 1988) contend that one of the priority goals of social studies education is for students to do critical thinking or ethical decision making on public and private matters of social concerns. They believe that the teaching of issues fosters goals critical to producing 'informed and thoughtful citizens'. Over the years many social studies educators (Quillen & Hanna, 1948; Massialas, 1963; Levin, Newmann, & Oliver, 1969; Oliver & Shaver, 1966/1974; Johnston, Anderman, Klenk, & Harris, 1994; Rossi, 1995, 1998) explored the relationship between students' higher order thinking and the issues-centered approach to social studies instruction.

Undertaken more than a decade ago, Newmann's Classroom Thoughtfulness project provided a portion of the important conceptual framework for my present study. The project was significantly different from earlier studies in two aspects (Parker, 1991). First, these three studies emphasized content-specific thinking rather than direct instruction on thinking and in-depth study in limited content over superficial coverage. Second, instead of separating thinking into particular conceptual types like problem solving, the study defined the conception of higher order thinking very broadly. These were important advances in the teaching and research of thinking in social studies. In Newmann (1990a, 1990b) and his colleagues' (Stevenson, 1990; Onosko, 1990, 1991; King, 1991; Ladwig, 1991) five-year studies, the central research goal was to investigate the barriers to promoting higher order thinking in the teaching of high school social studies and the ways to overcome the barriers at the social studies department level. The

studies were comprehensive in that they established a theoretical framework including the tangible conception of higher order thinking and general indicators of classroom thoughtfulness.

I believe that social studies classrooms are rich with opportunities to promote higher order thinking. As one of the core school subjects, an important mission of social studies curriculum is to promote students' higher order thinking (Ross, 1997; Nelson, 2001).1 Among social studies educators, there is no argument that fostering students' thinking should be a central goal of secondary social studies curriculum. Parker (1991), however, lamented the paucity of research and practice in this area. He stated that the promotion of higher order thinking as a major objective of social studies curriculum and instruction has been so consistently underachieved. It has been more easily preached than deliberately practiced. Indeed, many social studies educators nowadays still note that developing thinking has been persistently pursued and yet has consistently failed to be achieved in classrooms (see reviews of research by Cornbleth, 2001; Barton & Levstik, 2004).

REFORMING CLASSROOM TEACHING THROUGH TECHNOLOGY

Over the past decade we have observed that computer technology and information systems have dramatically changed every aspect of our life. Today schools are looking for ways to take advantage of those new technologies. Many technology enthusiasts tout the introduction of information and communication technology (ICT) as an integral part of the learning environment. It has been viewed as one of the cornerstone tools that could transform and reform schools. What then are the possibilities of new information

1. Social studies educators agree that social studies curriculum has three primary purposes: socialization into social norms, transmission of knowledge, and promoting thinking (Ross, 1997, p.6).

technology for school teaching and learning? Why are educational reformers so excited about encouraging teachers to employ technology in their classrooms? From the modern theoretical perspective of learning, currently there exist some convincing rationales for the integration of technology into school classrooms.

Technology advocates (Scardamalia, Bereiter, & Lamon, 1994; Brown & Campione, 1994; Lebow, 1995; Hannafin & Land, 1997; Cognition & Technology Group at Vanderbilt, 1997; Salomon & Almog, 1998; Krajcik, Soloway, Blumenfeld, & Marx, 1998; Jonassen, 2000) envision that new forms of information and communication technologies can change traditional forms of teaching and learning paradigms into one that emphasizes higher intellectual learning levels. They believe that because of the tremendous capabilities of new technology, particularly to store and retrieve quickly great amounts of information, a classroom focused on repetitive tasks of drill and practice routines and recitation of materials has the possibility to change into one in which intellectual and academic engagement centers on discovery and inquiry. It is a widely held belief that one of the current pedagogical shortcomings in the school curriculum is mostly due to a teacher-centered classroom. Critics insists that the teacher-centered classroom needs to move from the indoctrination towards the more interdisciplinary and constructivist framework of the learner-centered classroom. Technology proponents contend that new technology makes it possible to move away from ‘teacher-centered teaching’ towards ‘student-centered learning’.

Noting the promising possibilities of emerging computer technology, many scholars (e.g., Vockell & van Deusen, 1989; Salomon, Perkins, & Globerson, 1991; Lebow, 1995; Jonassen, 2000) envisioned that new forms of information technologies would facilitate classroom environment in which higher order thinking is fostered. Several research studies (Scardamalia, Bereiter, & Lamon, 1994; Brown & Campione,

1994; The Cognition & Technology Group at Vanderbilt, 1997; Secules, Cottom, Bray, & Miller, 1997; Krajcik, Soloway, Blumenfeld, & Mark, 1998, Dede, 2000; Oliver & Hannafin, 2001; Orrill, 2001), mostly in sciences and mathematics, have been conducted to improve student's critical thinking, problem solving and reasoning skills. The focus of previous studies was to create learning environments (contexts) which encourage learners to think hard by bringing "learners into contact with richly supported experiences, wherein they can deploy diverse, personal knowledge and tools with which to think" (Land, & Hannafin, 1998, p.187). Based on learner-centered constructivist approaches to teaching and learning, researchers advocated such capabilities of new technology as cognitive scaffolding, feedback and reflection, real-world experiences, and inquiry tools.

Recently a tangible number of research studies on the effective use of technology in social studies teaching and learning have been appeared in the major social studies journals, such as Theory and Research in Social Education (TRSE), Social Education, The Social Studies, International Journal of Social Education, and Contemporary Issues in Technology and Teacher Education. Some of them dedicated all the space of an issue for the kinds of articles. Virtually all of the professional organizations, including the National Council for the Social Studies (NCSS, 2004) and the International Society for Technology in Education (ISTE, 2000, 2002) developed curriculum standard for technology integration into social studies classrooms. Today social studies educators are showing considerable interests in revolutionizing classroom practices through the newly emerging technologies.

For the past decade, there have been two dominant research trends in technology and social studies education: Improvement of teacher education through technology (Keiper, Harwood, & Larson, 2000; Saye, 1998; VanFossen, 1999; White, 1997; Mason, 2000; Sherman & Hicks, 2000; Ehman, 2001; Rice, Wilson, & Bagley, 2001; Zong,

2002, Lipscomb & Doppen, 2004) and the effectiveness of technology on a child's higher order thinking (Ehman, Glenn, Johnson, & White, 1992; Fontana, Dede, White, & Cates, 1993; Fontana, 1997; Shiveley & VanFossen, 1999; Saye & Brush, 1999; Watson, 2000; Milson, 2002; Doppen, 2004). On the one hand, teacher training in appropriate use of technology and its applications to curriculum has been the focus of recent reports. On the other hand, the emerging use of new technology in the social studies has been explored as a means for teachers to integrate higher order thinking activities into classrooms. However, in spite of the fact that there is a body of literature that studied the effect of computer-based technology on children's thinking, the possibilities of emerging technology in social studies classrooms have not be fully revealed yet.

Research Purpose and Questions

As I mentioned above, in the age of information technology, many educational reformers have advocated that emerging technology has a great potential for establishing a classroom environment that fosters children's higher order thinking. What then are the potentials and challenges in using emerging technology in social studies teaching and learning for higher order thinking? In particular, how do secondary school social studies teachers adopt modern technology to engage their students in active classroom learning? The overarching question[2] being addressed in the study was "Do new technologies enhance teachers' efforts to foster their students' higher order thinking in social studies classrooms?"

The purpose of this qualitative case study was to explore the ways in which social studies teaching practice was transformed into student-centered constructivist approaches

[2] This is, in Stake's (1995) word, an issue statement.

during which students were engaged in higher order thinking activities when technology was richly utilized in a middle school teacher's classroom. In this research study, I looked very closely at a particular middle school social studies teacher's classroom teaching, which was exemplary in the utilization of technology. Focusing on the promotion of higher order thinking, I described and explained holistically the impact of emerging technology on the teacher's instructional strategy and her students' learning.

Specifically, in this study I attempted to address the following three separate yet interlocked research questions:

1) Why and how does a particular middle school social studies teacher integrate a variety of modern technologies into her classroom teaching?
2) How do students engage in social studies learning as a consequence of the teacher's rich incorporation of technology?
3) Finally, does the teacher's employment of technologies contribute to the promotion of students' higher order thinking? If so, how and to what degree does it?

In fact, this is an in-depth study on the teacher's past and present teaching experiences integrating various modern technologies into her social studies classroom. Understanding in great depth the teacher's considerable efforts at integration of technology in her classroom teaching, this study offers the real prospects and potential pitfalls of modern technology for the promoting of students' higher order thinking in secondary social studies classrooms. In this study, I used the term "technology" to refer to hardware and software tools that may be used to help students learn subject matter in classrooms. Technology in this sense includes more conventional tools, such as a television set and presentation software as well as fairly high-tech tools, such as a digital camcorder and video-editing software.

CHAPTER 2: CONSTRUCTIVIST PERSPECTIVE ON CLASSROOM TEACHING AND LEARNING (THEORETICAL FRAMEWORK)

The Meaning of Teaching Higher Order Thinking3

A lack of consensus on how to define higher order thinking exists among educators. Many definitions of higher order thinking are vague and misleading. This definitional problem has been regarded as one of the obstacles that stand in the way of the effective teaching of higher order thinking in schools (Bailin, Case, Coombs, & Daniels, 1999a; Beyer, 2001a). Hence, before I build my theoretical framework I address this issue in the following section. Research literature shows that higher order thinking was frequently conceptualized as one or more skills, as mental processes, and as sets of procedures. Criticizing this widely-held misconception of higher order thinking, Bailin et al. (1999a, 1999b) developed a defensible conception of higher order thinking.

Bailin et al. (1999a) contend that conceptualizing higher order thinking largely in terms of *a sets of skills* ignores the central roles of background knowledge and attitudes in thinking critical. They also hold that "the purely *[mental] processes* conception of higher order thinking is logically misleading and pedagogically mischievous" (Italics added) (p. 273). According to Bailin et al., the *general procedures* view of higher order thinking that regarded as basically a matter of following a general procedure, described usually in terms of a set of steps, stages, or phases, is also untenable. Because higher order thinking "is a polymorphous or multi-form enterprise; there are numerous activities that may be helpful in solving a problem or reaching a decision. What steps are appropriate is determined both by the nature of the problem and its context" (p. 279).

3. Some scholars use a particular type of thinking like 'critical thinking' to embrace all types of higher mental operations (e.g., Bailin et al., 1999a; Ennis, 2001). In this sense, the terms 'critical thinking' is almost synonymous with higher order thinking used in this study.

Consequently, the researchers insisted that higher order thinking should be conceptualized "in terms of the *standards* a performance must fulfil to count as successful" (Italics added) (p.279) rather than in terms of skills, process, or procedures. Higher order thinking, according to Bailin et al., "is done for the purpose of making up one's mind about what to believe or do; the person engaging in the thinking is trying to fulfil standards of adequacy and accuracy appropriate to the thinking, and the thinking fulfils the relevant standards to some threshold level" (p.287). In essence, the concept of higher order thinking is a normative notion in that it involves judgments about what people have done based on appropriate criteria and standards.

To be a thoughtful learner requires both 'dispositions (commitments) of thoughtfulness' and 'skills (strategies) in processing information' as well as 'in-depth knowledge in a specific area' (Newmann, 1990a; Bailin et al., 1999b; Ennis, 2001; Costa, 2001; Lipman 2003). Costa asserted, "The critical attribute of intelligent human beings is not only having information, but also knowing how to act on it" (p. 80). According to Ennis, ideal critical thinkers have certain universal dispositions and abilities. He gave an outline of the characteristics that the ideal critical (higher order) thinkers have:

> In brief, the ideal critical thinker is disposed to care "get it right", to care to present a position honestly and clearly, and to care about worth and dignity of every person. Additionally, the ideal critical thinker has the ability to clarify, to seek and judge well the basis of view, to infer wisely from the basis, to suppose and integrate imaginatively, and to do these things with dispatch, sensitivity, and rhetorical skill. (p.46)

Besides knowledge, dispositions, and skills, Vygotsky (1978)'s socio-historical theory of cognitive-development also indicates that 'social interaction' with the teacher

and peers or among peers in the classroom is a critical aspect to foster students' higher order thinking.

Several conceptions exist delineating higher mental functioning such as critical thinking, decision making, creative thinking, problem solving, metacognition, and reasoning (Newmann, 1990a; Ennis, 2001). One type of thinking is sometimes contrasted with other types. As Bailin et al. (1999b) pointed out, "terms such as 'decision making' and 'problem solving' designates rather general kinds of thinking tasks" (p.288). However, in real problematic situations about what to believe or what to do, they are not mutually exclusive kinds of thinking. In other words, all or some of the types of thinking are required to successfully resolve a challenging problem. Therefore, in this study, as Newmann and Bailin et al. proposed, higher order thinking is conceptualized broadly in terms of (intellectual) 'tasks' that present non-routine challenges, rather than concentrating on a specific conception of thinking. Specifically, it is:

> defined as challenge and expanded use of mind, … [which] occurs when students must interpret, analyze, or manipulate information, because a question to be answered or a problem to be solved can not be resolved through routine application of previously leaned knowledge. (Newmann, 1990a, p.44)

According to this conceptualization, as Bailin et al. (1999b) stated, the teaching of higher order thinking is best viewed not as a matter of teaching isolated skills and processes, "but rather as furthering the initiation of students into complex critical practices that embody value-commitments and require the sensitive use of a variety of intellectual resources in the exercise of good judgment" (p. 298). In this sense, the teaching of higher order thinking in a social studies classroom is focused "to engage students in … challenging problems, guide their manipulation of information to solve them, and support their efforts" (p.45). Newmann asserted that this broad definition is

adaptable to a variety of content and skill objectives in social studies as well as consistent with the underlying findings of many previous studies on teaching thinking.

Cultural Characteristics of a Thoughtful Classroom

How then, might higher order thinking be assessed and promoted in social studies classrooms? To assess the promotion of higher order thinking, Newmann (1990a, 1990b) focused on social studies classroom rather than on individual students because it was logistically impossible to assess the actual thinking of individual students during their classes due to their differences of opinion on the kinds of problem they find challenging. Based on classroom observations and interviews with teachers, Newmann identified general qualities of classroom interaction ('classroom thoughtfulness') that can be interpreted as those that promote higher order thinking. Here I describe the initial 17 criteria for classroom thoughtfulness which can be served as classroom observational dimensions.

In terms of instruction, in the thoughtful classrooms (1) there was sustained examination of a few topics rather than a superficial coverage of many, (2) the lesson displayed substantive coherence and continuity (in inquiring into topics systematically), (3) students were given an appropriate amount of time to think, that is, to prepare responses to questions, (4) students' personal experience (where relevant) was integrated into lesson, (5) the teacher carefully considered explanations and reasons for conclusions, (6) the teacher asked challenging questions and/or structured challenging tasks (given the ability level and preparation of the students), (7) the teacher pressed individual students to justify or to clarify their assertions in a Socratic manner, (8) the teacher tried to get students to generate original and unconventional ideas, explanations, or solutions to

problems, (9) the teacher showed an awareness that not all assertions emanating from authoritative sources are absolute or certain, and (10) the teacher was a model of thoughtfulness.[4]

In addition to the instructional dimensions, Newmann found that in thoughtful classrooms (1) students assumed the roles of questioner and critic, (2) students offered explanations and reasons for their conclusion, (3) students generated original and unconventional ideas, explanations, hypotheses or solutions to problems, (4) student contributions were articulate, germane to the topic and connected to prior discussion,(5) a large proportion of students were actively participated, (6) students spent a significant proportion of time engaging in thoughtful discourse with each other, and (7) a large proportion of students showed genuine involvement in the topics discussed.[5]

Among the 17 criteria, 6 were selected as minimal indicators for classroom thoughtfulness: the sustained examination of a few topics, lessons' substantive coherence and continuity, an appropriate amount of time to think, asking challenging questions and/or structured challenging tasks, teachers' model of thoughtfulness, and students' offering explanations and reasons for their conclusion. These were considered as having the "essential that one could not imagine judging a lesson 'thoughtful' unless the criteria were met" (Newmann, 1990b, p.256). Hughes (1997) confirmed this claim with his study that showed "a valid measure of thoughtfulness can be obtained using only the six fundamental or minimum criteria" (p.440).

According to Newmann (1990b), there were significant differences between more and less thoughtful lessons in terms of classroom practices and background features of

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4. The principal indications of the teacher's model of thoughtfulness are: the teacher showed appreciation for students' idea and appreciation for alternative approaches or answers if based on sound reasoning; the teacher explained how he or she thought through a problem; the teacher acknowledged the difficulty of gaining a definitive understanding of the topic.

5. The indications of genuine involvement include raising hands, attentiveness manifested by facial expression and body-language, interruptions motivated by involvement, length of students responses.

the classroom. In the most thoughtful lessons, the dominant teaching strategy was ‘teacher-centered discussion’, whereas the least thoughtful was dominated by ‘lecture and recitation’. The most thoughtful lessons also used primary sources and other forms of reading, and the least thoughtful lessons relied largely on textbooks. The level of classroom thoughtfulness had no relationship to grade levels, students’ GPA, or the number of minority students. Newmann said that the findings are encouraging because they imply, “most of the variance in classroom thoughtfulness was due to unmeasured factors, and the most powerful of these probably related to teachers’ individual commitments, orientations, and skills” (p.273).

Onosko (1989) experimented with Newmann’s hypothetical assumption by analyzing beliefs and practices between two groups of teachers. First, he explored the teachers’ thoughts about instructional goals, content coverage, and conception of thinking between those who consistently promote students’ thinking and those who do so less consistently. This study revealed that there were important differences between the two groups regarding the teachers’ beliefs. Those teachers who consistently promoted students’ thinking were more likely to identify developing thinking as their highest priority instructional goal. In addition, the more-consistent teachers in promoting thinking viewed curriculum content as a vehicle to promoting thinking. However, the less-consistent teachers in promoting thinking tended to emphasize content acquisition as their primary instructional goal. The study also found a close connection between teachers’ conception of thinking and their instructional goals. The teachers who placed greater instructional emphasis on thinking offered more elaborate and detailed conceptions of thinking than their counterparts. Their conceptions “included points of clarification and subtle but important distinctions between their own views and possible alternative conception” (p.190).

Second, the relationship of teachers' beliefs about instructional goals to their classroom practice was examined (Onosko, 1990). According to his findings, those teachers who gave a priority to higher order thinking in their instructional goals were significantly different from those who emphasized instructional goals other than higher order thinking on most dimensions of classroom thoughtfulness devised by Newmann (1990a). In the lessons in which teachers placed the greatest emphasis on thinking, few topics were examined, substantive coherence was displayed, challenging tasks were required, explanations and reasons for conclusion were carefully considered, teachers served as models of thoughtfulness, and students were exposed to competing views of authoritative sources.

In addition to teachers' beliefs, Stevenson (1990) analyzed the students' perceptions of social studies classes that emphasized higher order thinking. Stevenson's study focused on the kind of curricular experience students found engaging and challenging and the reasons why particular academic tasks were so. According to the study, the vast majority of students were not engaged by trivial tasks but by cognitively-challenging academic work that requires them to interpret, analyze, or evaluate information to solve problems. Students' engagement was a result of subject matter that was intrinsically interesting due to the topics relevant to real world issues or their lives outside school, active participation in academic works, and teacher's pedagogy that made the class interesting. For most students, engaging academic work was also challenging work that encourages them to think "hard". The findings suggested that to enhance student engagement, the social studies academic tasks must be cognitively challenging to make students think deeply.

Barriers to the Promotion of Higher Order Thinking

Reviewing a variety of sources, Onosko (1991) identified six dominant barriers to the promotion of student's higher order thinking: 1) Teaching as knowledge transmission: Facts, concepts, and generalizations from history and social sciences were merely delivered to students in ways that fail to encourage them to think. "The drive to enculturate youth, to expose them to knowledge deemed important by society, is so pervasive that it tends to displace thinking from the school agenda" (p.344); 2) Broad and superficial content coverage: The vast number of fragmented facts and ideas from diverse academic disciplines were covered superficially and mindlessly. The extensive content coverage left little chance for both students and teachers to explore and reflect information; 3) Teachers' low expectations of students: Teachers perceived that students were incapable of dealing with, or resistant to higher order challenges requiring them to interpret, manipulate, and analyze information. The reasons for teachers' low expectations included students' lack of inherent mental capacity, students' undeveloped cognitive skills, and low motivation; 4) Large number of students; 5) Lack of teacher planning time; 6) A culture of teacher isolation from fellow teachers.

The first three barriers, according to Onosko, were rooted in teachers' deeply held beliefs about social studies curriculum and instruction, and students while the others were rooted in intellectually oppressive institutional structures. Since these barriers are interconnected, he asserted, to achieve significant and sustained improvement in the promotion of students' thinking, all of the barriers need to be addressed in a comprehensive way. Two subsequent studies by King and Ladwig investigated how those barriers were overcome at the social studies departmental level.

King (1991) investigated what social studies departments might do to overcome those barriers identified by Onosko (1991) by comparing successful social studies departments with those less successful at promoting higher order thinking. He focused on how the department chair and principal leadership is brought into play for the promotion of higher order thinking within the social studies departments. The study suggested that active curricular and instructional leadership is essential to break down the dominant barriers. In social studies departments most successful in promoting classroom thoughtfulness, both department chairs and school principals played important roles in creating a common conception and vision of higher order thinking, collaborative curriculum development, and attention to teaching and pedagogic strategies toward those visions.

Furthermore, Ladwig (1991) analyzed the association between the organizational features of social studies departments and the promotion of higher order thinking. According to this study, 'organizational structures,' such as the amount of teacher's planning time, the number of students in each class, the total number of students teachers teach, and the number of courses for which teachers had to plan, were not associated with the levels of classroom thoughtfulness. In contrast, 'organizational programs' to promote higher order thinking were positively related to classroom thoughtfulness. Such programs included curriculum revision and design, improvement of teachers' instruction, and departmental common visions for higher order thinking. This finding implied that departmental programmatic efforts were much more important than organizational structures to improve higher order thinking. In other words, it was asserted that it may be possible to achieve higher levels of classroom thoughtfulness even in the traditional secondary schools without altering their organizational structures.

In a more recent review of relevant research both within and beyond social studies, Cornbleth (2001, p.76) discovered five structural obstacles to discouraging teaching for higher order thinking: (1) bureaucratic climate with an administrative emphasis on law and order; (2) conservative climate intent on maintaining the status quo; (3) a threatening climate of external curriculum challenges and self-censorship; (4) a climate of perceived pupil pathologies and pedagogical pessimism; and (5) a competitive climate dominated by student testing and public school ranking.

Cornbleth's review focused on broader sets of contextual conditions rather than single factors such as larger class size or types of teaching style. She contended, because those climates are socially constructed and embedded in the school culture, it requires sustained and collective effort to change them. However, in spite of those climates she was also aware that committed teachers can still be successful in teaching "meaningful learning and critical thinking." Hence, in embracing higher order thinking approach to social studies, Barton and Levstik (2004) asserted, teachers' instructional purpose, which is clearly thought out and articulated, plays much more critical role than their pedagogical content knowledge.

Constructivism as a Theoretical Foundation for Technology Integration

Theoretical rationales for technology integration into classrooms are based on constructivism (Perkins, 1991; Jonassen, 1991; Duffy & Cunningham, 1996; White, 1996; Salomon & Almog, 1998; Rice & Wilson, 1999; Hooper & Hokason, 2000; Crocco, 2001; Rice, Wilson, & Bagley, 2001; Molebash, 2002; Doolittle & Hicks, 2003). Primarily derived from the theories of Jean Piaget and Lev Vygotsky, constructivism provides a unique perspective on 'knowledge' and 'learning'. Constructivists contend

that we as human beings have no access to an independent reality. Knowledge, consequently, does not and cannot represent reality. Even what we call true knowledge is not a copy of reality. von Glasersfeld (1996) describes the relationship between cognitive subject's conceptual structure and that subject's experiential world:

> Knowledge … could be treated not as a more or less accurate *representation* of external things, situations, and events, but rather as a *mapping* of actions and conceptual operations that had proven viable in the knowing subject's experience. (Italics added) (p. 4)

From this constructivist point of view on reality and the way of knowing, learning is essentially a process by which learners actively 'construct' their own knowledge applying existing knowledge in their minds to new information. Based on both Piaget and Vygotsky's theories, Fosnot (1996) give a concise explanation about the true nature of learning:

> Learning from this perspective is viewed as a self-regulatory process of struggling with the conflict between existing personal models of the world and discrepant new insights, constructing new representations and models of reality as a human meaning-making venture with culturally developed tools and symbols, and further negotiating such meaning through cooperative social activity, discourse, and debate. (p. ix)

As Fosnot's constructivist perspective of learning implies, current thinking about cognition emphasizes the social aspects of learning inspired in large measure by the work of Vygotsky. Unlike other cognitive psychologists like Gagne and Piaget whose work focused on cognitive structuring of individuals, Vygotsky viewed cognitive development as 'culturally and socially' based. His theory is based on two basic assumptions (Gredler, 1997). One is that the signs and symbols developed by a particular culture influence the

human being's intellectual processes. The other is that the social interaction with knowledgeable members of the culture plays an important role in the individual's cognitive development.

According to Vygotsky (1978), the transformation of primitive mental functions, such as involuntary attention and simple memory, into the development of complex mental functions such as conceptual thinking involves two unique yet connected processes. The first is the mastery of the external means of thinking, such as language, counting, and writing (the general law of genetic development). The second involves learning to use these symbols to master and regulate one's thinking (the natural history (law) of the sign or signification). The general law of genetic development states that "every function in the child's cultural development appears twice: first on the social level, and later on the individual level; first, between people (interpsychological), and then inside the child (intrapsychological)" (p.57). In other words, the development of all complex mental functions begins as social interactions between individuals and gradually acquires meaning and is internalized by the learner.

The second principle, the way that primitive mental functions move toward complex functions, is based on the notion of the 'signification' as a psychological tool. Vygotsky wrote:

> The invention and use of signs as auxiliary means of solving a given psychological problem (to remember, compare something, report, choose, and so on) is analogous to the invention and use of tools in one psychological respect. The sign acts as an instrument of psychological activity in a manner analogous to the role of a tool in labor. (p.52)

According to Vygotsky, of the signal systems developed by the human species, the most far reaching in terms of its effects is human speech: "the most significant

moment in the course of intellectual development, which gives birth to the purely human forms of practical and abstract intelligence, occurs when speech and practical activity, two previously completely independent lines of development, converge" (p.24).

A key concept in Vygotsky's theory is the Zone of Proximal Development (ZPD), which is defined as "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86). The ZPD represents the amount of learning possible by a student given the proper instructional conditions (Schunk, 2000). The ZPD implies that "the only "good learning" is that which is in advance of development" (Vygotsky, 1978, p.89). That is, learning leads to mental development, setting in motion a variety of development processes. What is vitally important for the concept of the ZDP in learning is that it is created by interactions between the child and other individuals in his or her environment.

Constructivist Teaching Practices

Constructivism suggests a radically different approach to instruction from conventional teacher-centered classroom practice. In a conventional approach to teaching, which is based on behaviorism and maturationism (Scheurman, 1998), knowledge is viewed to be transferable to learners ready-made. The important underlying assumption of this perspective is that "what we ourselves perceive and infer from our perceptions is there, ready-made, for the students to pick up, if only they had the will to do so" (von Glaserfeld, 1996, p.5). Learning is to be seen and assessed as the acquisition of knowledge. Consequently, instruction is conceived of as the well-structured, appealing presentation of information-to-be-acquired (Salomon & Almog, 1998). In the

constructivist perspective, however, “instruction is not seen as the effective transmission of knowledge but rather as setting the stage, providing some guidance, and offering the raw information for the activities of problem solving and design to take place” (Salomon & Almog, 1998, p.226).

Vygotsky’s theory concerning learning from others within society has important implications for classroom teaching. Basically, as I mentioned above, according to Vygotsky, every internal psychological function, including human learning, occurs as an interaction between the child and a knowledgeable member of the culture. Consequently, the adult’s guidance is important to the child’s learning. In the ZPD, a teacher and learner (adult/child) work together on a task that the learner could not perform independently because of the difficulty level. Cognitive change occurs in the ZPD as teacher and learner share cultural tools, and this culturally mediated interaction produces cognitive change when it is internalized in the learner. Working in the ZPD requires a good deal of guided participation (Schunk, 2000). Collaborative problem solving, in which the ZPD is accessed during teaching is the key to maximum learning and intellectual development (Gredler, 1997).

Several educators, mainly in the fields of mathematics and science education, have suggested guiding principles of teaching practice consistent with the constructivist theory of learning (Fosnot, 1996; Newmann, Marks, & Gamoran 1996; Brooks & Brooks, 1999; Windschitl, 2002). There is a notable congruence, in several aspects of pedagogy, among the principles of constructivist teaching. First, in the constructivist approaches, the goal of instruction is to nurture students’ in-depth understanding of complex ideas through concrete personal experience rather than simple acquisition of facts and concepts. The focus is on developing students’ higher order thinking, including critical thinking, problem solving, and reasoning skills. Second, in constructivist settings, curriculum is

structured around a few complex topics or ideas. “Certain issues are explored in depth, sacrificing broad coverage for the goal of making intellectual issues meaningful and substantively engaging”(Becker & Ravitz, 1999, p.357). Constructivists believe that broad coverage of a large number of topics prevents students from engaging in given issues deeply enough to generate meaningful understandings.

In addition, in the constructivist perspective, the teacher’s role is dramatically shifted from a transmitter of knowledge to a facilitator or collaborator. In traditional classrooms, the “teacher’s primary function is to break information and skills into small increments, present them part-to-whole in an organized fashion, and then reward student behaviors that mirrors the reality presented by teachers and texts”(Scheurman, 1998, p.6). In contrast, constructivist teachers do not “dispense knowledge”, but rather provide students with opportunities and incentives to build up their own knowledge. Consequently, “the traditional hierarchy of teacher as the autocratic knower and learner as the unknowing, controlled subject studying to learn what the teacher knows begins to dissipate as teachers assume more of a facilitator’s role and learners take on more ownership of the ideas”(Fosnot, 1996, p. ix).

In a constructivist learning environment, classroom activities emphasize a shared activity between teacher and student (Gredler, 1997; Schunk, 2000) and are scaffolded, which refers to the role of a teacher in enabling students to solving a problem that is beyond their individual efforts. In addition, a constructivist learning environment produces reciprocal teaching which involves an interactive dialogue between a teacher and small group of students, and apprenticeships in which novices work closely with experts in joint work-related activity. All are intended to describe the ways that teachers adapt their assistance to help students participate in activities, and thus promote their higher mental operation.

Constructivism also demands a radical reform of the traditional classroom assessment. Vygotsky (1978) noted that existing tests identified the child's development level on the basis of the tasks that the child could complete 'unaided'. He contended:

> When we determine a child's mental age by using tests, we are almost always dealing with the actual development level. In studies of children's mental development it is generally assumed that only those things that children can do on their own are indicative of mental abilities. (p. 85)

According to Vygotsky, the tasks a child can complete independently indicate only the level of development already attained. They are not a measure of the child's 'potential' for future development. The ZPD concept provided a conceptual foundation to develop a more accurate procedure than the static testing approach in revealing individuals' learning potentials. It has been incorporated into a number of dynamic assessments to find out what a student is able to do independently as well as what can be done with adult guidance.

The central purpose of assessment, in the constructivist point of view, is to find out how well students are 'learning'. Consequently, "assessment should be based on providing students with opportunities to demonstrate and communicate their understandings and ability to solve problems rather than on the basis of seeing which answers they select from a list or what factual information they can recall"(Ravitz, Becker, & Wong, 2000, p.20). As a result, "the most obvious reform has been to devise more open-ended performance tasks to ensure that students are able to reason critically, to solve complex problems, and to apply their knowledge in real-world contexts" (Shepard, 2000, p.8). Furthermore, the assessment task is inseparable from the instructional task (Wiggins & McTighe, 2000). In other words, assessment is used as part of the teaching and learning process. The forms of assessment are changed to better elicit

higher order thinking, which include projects, observations, interview, portfolios, demonstrations, reflective journals, oral presentation, essays, and students' self-evaluations.

Computer Technology as a Powerful Catalyst for Constructivist Teaching Practices

As mentioned in the introduction, it is believed that recent advances in computer and related technologies have an enormous potential to make student-centered learning possible. In other words, many technology advocates believe that modern technology can facilitate the realization of learning environments that draw from constructivist conceptions. How do computer-based technologies, then, make this constructivist teaching and learning possible in school classrooms? According to research, there are many ways that technology can be used to help create such learning environment for both teachers and students.

Technology first serves as a cognitive scaffold and resource to engage the learner in higher order thinking activities. Computer tools "provide explicit models for information representation, and they afford the activation of higher order mental operations by relieving the learners of low-level, tedious operations and heavy reliance on memory capacity" (Salomon et al., 1989, p.621). In other words, computer technology that functions as a cognitive tool makes it possible for learners to transcend the limitations of their cognitive system (Salomon et al., 1991). Consequently, "computers can serve as tools that provide guidance in a child's zone of proximal development and can thus facilitate competence development"(Salomon et al., 1989, p. 626). In brief, computer technology can be used to scaffold thinking during complex tasks.

Computer tools also allow both the learner and teacher to monitor their responses, to exchange individual feedback, and to maintain records of performance so that they can reflect on their own work and revise it. Interactive communication technologies and networked multimedia environment can promote such active learning and reflection (Bransford et al., 2000). Through computer networks, "peers can generate questions and provide feedback, often leading students to revise their thinking" (Williams et al., 1998, p.109). In addition, outside experts as well as teachers can also participate in classroom activities to respond to students' questions and to provide lively feedback.

Thirdly, technology can help learners acquire in-depth understanding of abstract concepts through 'concrete experience'. "An important use of technology is its capacity to create new opportunities for curriculum and instruction by bringing real-world problems into the classroom for students to explore and solve"(Bransford et al., 2000, p.207). Truly meaningful learning, according to contemporary human learning theory, occurs when learners are exposed to real-world contexts in which they are offered rich, hand-on experience. In other words, "learning is to take place within rich and complex real-world contexts, rather than with decontextualized skill-building materials"(Salomon & Almog, 1998, p. 229). High-speed computer networks and multimedia environments, which provide dynamic representation of events, enable learners to be immersed in such concrete learning experiences (Hannafin & Land, 1997).

Finally, and most importantly, technology can provide 'inquiry tools' with which learners navigate and manipulate information to construct knowledge (Hannafin & Land, 1997; Krajcik et al., 1998; Milson, 2002). Using cognitive tools, students solve problems "by asking and refining questions, designing and conducting investigations, gathering and analyzing information and data, making interpretations, drawing conclusions, and reporting findings" (Krajcik et al., 1998, p.32). Since it is believed that higher order

learning is best achieved through extended investigation and experience with phenomena under study, inquiry is widely regarded as an essential component of effective student learning.

Computer Technology and Higher Order Thinking in Social Studies Education

When it comes to the impact of computer technology on student learning, research literature shows that it can be used for various social studies educational goals (Ehman & Glenn, 1991). Computers can be used to promote children's basic knowledge and skills. Yet, "among the most frequently cited rationales for integrating computers into the social studies curriculum is the belief that technology encourages problem solving and facilitates inquiry-driven approaches to learning" (Berson, 1996, p.488). Inquiry-based learning is particularly important to the field of social studies because most social studies educators emphasize 'the preparation of democratic citizens' as a central, overarching goal of social studies education. The good citizens in a democratic society must be equipped to deal effectively with complex historical and social issues and events by examining knowledge and exploring ideas surrounding them critically. Not surprisingly, therefore, those educators who have a deep interest in fostering children's thinking, without exception, have long advocated inquiry-based learning as a valuable *mode of teaching methods* (e.g., Massialas & Cox, 1966; Hunt & Metcalf, 1968; Banks & McGee-Banks, 1999; Wineburg, 2001; VanSledright, 2002).

Historically, during the 1980s and early 1990s, various research studies investigated the impact of computer technology on students' higher order thinking', or the widely adopted term 'problem solving skills' in social studies education. Most of the researchers had studied the use of computer databases, asking about how to best employ

them in situations in which they have a comparative advantage over other media, such as textbooks or films. In spite of methodological problems "the database studies…provided some insights into their potential for the social studies classroom" (Ehman & Glenn, 1991, p.518). In the review of interactive technology in social studies, Ehman and Glenn concluded that new database technology such as hypermedia "could be used by teachers and students to avoid unnecessary effort and to gain access to information and to make meaning of it in ways not possible without interactive technology" (p.520).

In addition to the database studies, for the past decades, several inquiries have been conducted on the instructional effectiveness of computer simulations. Simulations had been explored as a tool to foster students' problem solving and decision making skills. Although the results from those simulation studies were inconsistent, findings from several research studies revealed that computer simulations enhance students' affective outcomes such as interest, motivation, sense of personal control, and intellectual curiosity (Ehman & Glenn, 1991). Moreover, other reviews of the literature on the use of simulations by Berson (1996) reported students' improved achievement in the areas of content knowledge, memory retention, and problem solving.

Nevertheless, currently only a limited number of research studies have examined the ways in which social studies teachers actually incorporate computer-based technology to transform their teaching practice from the traditional teacher-centered approach into a student-centered constructivist approach by which make students actively engage in inquiry-driven activities. Most of the data-based research available did not reveal their findings fully, and the findings were discussed scantly. Consequently, here I review the findings of selected field-based research studies on technology's prospects for the promotion of higher order thinking in social studies teaching.

Ehman, Glenn, Johnson, and White (1992) found that students using computer databases generally revealed a greater confidence in using data during their problem solving process. Based on the data from eight case studies, they identified several factors for successful problem solving in database learning environments: (1) time constraints and pressures; (2) prior student knowledge: (3) use of small cooperative student groups; and (4) the use of structure by the teacher during the problem solving process. The 'structure' referred to a combination of several interlocking components: (1) unit introduction; (2) incorporation of clear expectations with a sequence of activities; (3) development and modeling by the teacher and practices by the students of key problem solving elements; and (4) provision for regular checking of student progress in accomplishing the milestone tasks of problem solving. The study recognized that these instructional structures by teachers were essential for the students' successful use of databases in problem solving.

More recently, Saye and Brush (1999b) reported that students who used multimedia databases and data collection-analysis tools, which featured primary source print documents and period news footage, interviews, and music, demonstrated the acquisition and use of complex knowledge in an 11th grade high school history lesson. The study investigated whether a multimedia-supported learning environment might overcome three major learner obstacles to problem-based instruction: (1) lack of deep engagement with the topic; (2) failure to weigh competing perspectives, and (3) lack of domain-specific and metacognitive knowledge. Findings suggested that the integrated multimedia environment provided qualitatively different experiences that motivated students to persist, immerse themselves in the content, encounter diverse perspectives, and develop more complex view of issues. However, Saye and Brush cautioned, "expert guidance by the teacher seems to remain a crucial factor for nurturing the disciplined

inquiry necessary for addressing social problems critically"(p.472). Meanwhile, they posited, "Although they cannot replace the expert teacher, features of integrated multimedia environments might enhance the prospects of building thoughtful classrooms where problems are rigorously examined" (p. 499).

In the subsequent study (Saye & Brush, 2004), the researchers focused on whether the multimedia learning environment might mitigate some of the teacher obstacles to problem-based inquiry: (1) lack of a vision or model for problem-based practice; (2) increased preparation time for producing materials, activities, and assessment; and (3) increased cognitive demands on teachers and learners. This longitudinal study over three years examined an expository-oriented history teacher's experience with a multimedia learning environment, specially designed to help her students engage in disciplined inquiry. The study revealed that although the teacher did not make 'substantial' change in her classroom practice, the multimedia environment fulfilled its initial promise in shifting the teacher's beliefs about the nature of knowledge and the way of knowing, and her pedagogical knowledge about teaching and learning towards a more constructivist belief. It also reported that the environment alleviated the vision and preparation obstacles that have often caused teachers to resist problem-based inquiry. However, the environment was not particularly effective in lessening the cognitive burdens on teachers and students in responding to higher order thinking tasks.

Another study by Rice, Wilson and Bagley (2001) also reported that when a social studies teacher used technology in his classroom, his instructional practices and pedagogical beliefs in teaching and learning changed into a more constructivist mode, and students actively involved higher order thinking activities as well. This longitudinal study followed a secondary social studies teacher over five years of working to integrate a variety of technological resources such as the Internet, multimedia CD-ROMs, and

digital cameras into his classroom. According to the study, as the teacher integrated technology over a long period of time, he "changed his classroom from a direct instruction, traditional classroom to on which is student-centered and in which the students are actively involved in their learning"(p.215). In technology-based classes, the role of teacher and students was shifted, and the teacher acted as a facilitator rather than a lecturer.

Finally, a case study conducted by Milson (2002) showed that the Internet can be used to create a classroom as a community of inquiry. The study investigated the integration into a sixth grade social studies classroom of the Internet medium through WebQuest technique, which was designed for students to access online historical documents and for teachers to supervise students' activities. Students were asked in the study to create guidebooks about Ancient Egypt while gathering information through the WebQuest online. Students' projects were guided through five stages of the inquiry process, which included instruction, task, process, evaluation, and conclusion, all critical attributes of a WebQuest. According to the research findings, with appropriate teacher guidance a community of inquiry can be developed in a social studies classroom in a relatively short time period. More importantly, the study found that students of varying academic ability levels can benefit from the Internet-based inquiry learning.

Overall in the research literature, technology was utilized as a tool to empower students to engage in higher order thinking activities in social studies classrooms. While the forms of technology used by teacher and student varied, the researchers all reported that technology might be a powerful affordance for inquiry-based social studies learning. However, they also identified various formidable barriers to teachers engaging their students in technology use to undertake complex, challenging tasks. In spite of the potential benefits of technology, therefore, it was recognized that ultimately the teacher's

active role in guiding students' activities is a crucial factor in successful promotion of higher order thinking.

Significance of the Present Study in the Field of Social Studies

THIN KNOWLEDGE BASE ESTABLISHED

In a comprehensive review of the research on the impact of interactive technology on social studies education, Ehman and Glenn (1991) concluded that the impact of technology on students' higher order thinking had not been adequately studied, lamenting a very thin knowledge base from research about the use of technology in social studies, and the serious methodological problems of that research. Berson (1996) also expressed disappointment about a paucity of empirical evidence and only impressionistic conclusions of most research on the integration of computers into social studies instruction. Examining the literature on the effectiveness of computers in social studies instruction and learning, he recognized that substantive research on using computer technology to facilitate higher order thinking is still scant. This assertion is also observed in subsequent reviews (Berson, Lee, & Stuckart, 2001). In fact, currently, there are relatively small numbers of empirical studies on the potential of computer technology for teaching higher order thinking in social studies area. As a result, we still do not have a sufficient knowledge base about whether or not technology could contribute to a reform of classroom teaching and learning towards constructivist learner-centered approaches.

THE PROBLEM OF TECHNOLOGY-SPECIFIC DESIGN

Berson et al. (2001) argued that the research trends emphasizing technical issues must also include altering the teacher's pedagogical styles that dictate the structural

organization of the classroom. Previous studies, in fact, attempted to discover the effect of technology in students' learning by focusing on the particular type of technologies as they affect social studies practice. Database and simulation applications and recently specific Internet tools were forms of technology whose effectiveness was investigated in the prior studies. However, educational researchers insist that the focus of research on the classroom use of technology should shift from an emphasis on technology itself to social studies teaching and learning (Ehman & Glenn, 1991; Berson, 1996; Honey, Culp, Carrigg, 1999; Zhao, Pugh, Sheldon, & Byers, 2002). As technology advanced rapidly, the research that focused on technologies' capabilities to influence students' learning became obsolete. Moreover, the technology-specific studies "contributed little to the larger and more challenging project of learning about the generalizable roles that technologies can play in addressing the key challenges of teaching and learning, and about optimal designs for such technologies" (Honey et al., 1999, p.3).

LACK OF THEORETICAL FOUNDATIONS

In addition to the research design flaws (issues) mentioned above, most research on technology practice in the social studies classroom has not been based on solid theoretical foundations or assumptions of related theories (Berson, 1996; Doolittle, 2001). If we hope to reform educational practices, however, the focus of educational research should be informed by a theoretical framework that explicitly identifies assumptions about teaching and learning. Attention to the theoretical framework is also important to properly design a study, interpret its findings more fully, and make useful recommendations (Dulberg, 2005). In this chapter, thus I have attempted to build *a general conceptual (theoretical) framework* for the present study. The framework must operate regardless of the forms of technology used in social studies classroom teaching

and the kinds of subjects that constitute the discipline of social studies. Here, my study is set within the underlying assumptions of higher order thinking and the meaningful use of modern computer technology from contemporary theories in teaching, learning, and technology as well as those of the social studies content area. Despite some variations, I found that there were common assumptions based upon *the constructivist perspective on teaching and learning*, either explicitly or implicitly within the various literatures I addressed.

CHAPTER 3: REPRESENTING AND UNDERSTANDING TEACHING EXPERIENCE THROUGH NARRATIVE CASE STUDY (METHODOLOGY)

Case Studies of Teachers' Classroom Practice

This dissertation is a qualitative case study6 into a middle school social studies teacher's effort to integrate emerging technology into her classroom teaching from the perspective of fostering students' higher order thinking in particular. In terms of traditions of inquiry (Creswell, 1998), it is a case study in that I described and analyzed in depth 'a single unit', that is an individual teacher's teaching practice and 'a bounded system', that is students' learning in her social studies classroom (Merriam, 1998; Stake, 2000). Providing "rich and holistic account of a phenomenon" in real-life context, a qualitative case study is a particularly suitable research method "to gain an in-depth understanding" of the actions and its meanings for those involved (Stake, 1995).

In this study, I present, to a certain extent, an intensive and thick account of a particular social studies teacher's classroom teaching and her students' learning in her natural classroom context. My focus was to investigate why and how she integrated various technologies, how her students engaged in their learning with technology, and the way in which technology contributed to transform a social studies classroom toward a thoughtful learning environment. According to Yin (1994), the case study is a particularly suitable design when a "how" or "why" question is being asked about a contemporary set of events over which the investigator has little or no control" (p.9).

The relative strength of case study methodology is that it gives practitioners the realistic chance to put the ideas derived from research into their practice because "it

6 Like most methodologists (e.g., Merriam, 1998; Stake, 2000), I consider case studies as an overall strategy rather than a specific genre of research. Stake wrote, "Case study is not a methodological choice but a choice of what is to be studied. By whatever methods, we choose to study the case"(p.435).

offers insights and illuminate meanings that expand its readers' experiences" (Merriam, 1998). This study was conducted in a natural classroom setting so that the findings are more meaningful to practitioners. Critics have claimed that traditional educational research, which uses experimental or quasi-experimental techniques, has had no significant impact on actual classroom practice. This study connects research with teachers' experience of everyday classroom realities. Elucidating the perspective of a teacher as well as contextualizing in practice, it is intended to inform educational practitioners. In other words, this study is not intended to simply evaluate the effectiveness of a teachers' performance but to help improve existing practice.

Related to the reform of social studies teaching, recently there have been calls for the researchers to undertake more qualitative case studies on the effective use of technology in classrooms (e.g., Diem, 2000; Hicks, Doolittle, & Lee, 2004). Diem asserted, "if technology is to be taken seriously as an important tool in social studies education," qualitative case studies should be included as an essential part of research endeavors "to describe the holistic effects of technology on the social studies" (p.498). Hicks et al. also demanded in-depth case studies "that illuminate the possibilities and challenges facing social studies educators who have successfully shifted from [the conventional instructional] approach toward [the inquiry-driven] approach" (p.232). This study meets the immediate needs for more in-depth study on the value of modern technology in social studies curriculum.

Narrative Approach to Designing Case Studies

Throughout each phase of the conduct of the study, especially during collection and analysis of data, and reporing of the findings, this case study adopted a narrative

approach. I collected narrative data through four interviews with the teacher, 15 classroom observations, and various documents used by the teacher and produced by the students. The narrative data were analyzed and interpreted using a narrative analytic strategies, and reported as coherent three-part portraits. I chose the narrative approach to the three stages of the research process because "narrative is the best way of representing and understanding experience" (Clandinin & Connelly, 2000, p.18).

In essence, narrative is 'a way of knowing' that captures in a particular way the richness and the complexity of meaning in human experiences (Bruner, 1986, 1996; Polkinghorne, 1988; Carter, 1993; Clandinin & Connelly, 2000). Because of that narrative is, as Polkinghorne (1988) wrote, "a meaning structure that organizes events and human actions into a whole, thereby attributing significance to individual actions and events according to their effect on the whole" (p.18).

The narrative mode of knowing, according to Bruner (1986), is fundamentally different from the traditional positivist, in his term paradigmatic, mode of knowing in terms of the operating principle, the procedures for producing knowledge, and the criteria for judging the accuracy and quality of research results. When it comes to the nature of knowledge, narrative knowledge is context sensitive, value-laden, and particular, whereas paradigmatic knowledge is inherently context free, value-free, and universal. "The narrative knowledge represented in story cannot be reduced to abstract rules, logical propositions, or the covering laws of scientific explanation" (Carter, 1993, p.6).

According to Connelly & Clandinin (1990), the prominent advocates of narrative inquiry into classroom practices, "The main claim for the use of narrative in educational research is that humans are storytelling organisms who, individually and socially, lead storied lives. The study of narrative, therefore, is the study of the ways humans experience the world" (p. 2). Furthermore, Gudmundsdottir (2001) asserts that narrative

is ‘the only possible way’ to capture and express complex classroom teaching, or in a more broad sense, school practice[7] because “school practice, like any other human activity, is situated in an institutional, historical, and cultural setting… [Such practice] is primarily mediated activity, hence, it cannot be stripped of its context” (p.233).

As Carter (1993) noted, the narrative approach to the study of teaching redresses “the deficiencies of the traditional atomistic and positivist approaches in which teaching was decomposed into discrete variables and indicators of effectiveness” (p.6). The object of the present narrative case study on a teacher’s classroom practice is not intended to produce knowledge that leads to the prediction and control of classroom teaching. Instead, it produces knowledge that deepens and enlarges the understanding of the teacher’s teaching experience.

To be summarized, the special attractiveness of narrative in the study of teaching is that narrative organizes apparently independent and disconnected teachers’ practices and events into a whole so that we can comprehend their teaching experiences in historical and social context. Telling stories is a significant way for teachers to give meaning to and express their understanding of their teaching experience. Hence, narrative is the best way to understand teachers’ teaching practice.

[7] By using “school practice”, Gudmundsdottir is widening her unit of analysis to include not just what teachers do but also what students learn as a result of their classroom teaching.

The Research Design

THE SETTING AND PARTICIPANTS

The School Context

This study was conducted at Pheasant Rock Middle School (Pseudonym). It is a public school, located in an outer suburb of a large central city in Texas. As of spring, 2005, when involved in my study, its total student enrollment was approximately 826. Of those students, 84.5% were European American, 7.5% were Asian American, 6.3% were Hispanic, 1.1% were African American, and 0.6% were Native American.8 The ratio of students to teachers was 13:1. The school was in a fairly affluent area where house prices were very high compared to other schools in the state.9 In terms of the percentage of students with special needs, the numbers were small. The percentage of economically disadvantaged students in this school was significantly low as compared with those of the state but was very similar to the school district. There were few students who were classified as English Language Learners, as shown in the table below.

Table 1: Enrollment of Students with Special Needs (05')

	This school	district	state
Economically Disadvantaged (%)	3.8	3.0	54.6
English Language Learners (%)	3.1	1.9	15.6
Students with Disabilities (%)	10.2	10.5	11.6

8 This distribution virtually mirrored those of the school district to which the Pheasant Rock Middle belonged. The ethnic distribution in the school district was: European American (88%), Asian American (6.3%), Hispanic (5.1%), African American (0.4%), and Native American (0.2%).

9 The median household income in the school district was $171,464. This was more than double the amount compared to that of state, $68,293.

The school was a Gold Performance winner for the 2004-2005 academic year in Reading/English Language Arts (ELA), Mathematics, Writing, Social Studies, and attendance. The school was 'acknowledged' in the five areas.10 The school had 'state-of-the-art' technology including four computer labs in which the most up-to-date equipment was installed. In fact, this school possessed one of the nation's top information infrastructures. This school was, therefore, an ideal place to conduct research on the educational impact of modern technology on a teachers' teaching practice and, accordingly, on students' engagement. The school district of which the Pheasant Rock Middle School was a part had approximately a 7,100 student enrollment. The dropout rate of the school district was very low (0.2%). More than 95 percent of the school district's graduates have gone on to attend college in recent years.

The school district had an information systems department which maintained district wide network and provided technical supports for both administrative and instructional purposes. The service that the department provided included administrative data, e-mail (internal and Internet), file sharing, printing, tape backup, virus protection, Internet access, Internet and Intranet Web services, and the Automated Work Order System. They operated and maintained a series of switched Ethernet Local Area Networks (LANs) interconnected by T1, Wireless, and Fiber-Optic cabling. The backbone of the district network was connected to a local Internet service provider with a 20Mbps connection. This connection was managed and accelerated by Novell's Volera Excelerator CDN solution. All campuses in the district, with the exception of one

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[10] According to the Gold Performance Acknowledgment Standards for 2005, if a school was acknowledged as Gold Performance in Reading/ELA, Mathematics, Writing, and Social Studies, the percent of examinees scoring at or above the commended performance standard (scale score of 2400) must meet 20% or more. This indicator evaluated performance for all students and the following student groups: African American, Hispanic, White, and Economically Disadvantaged. For the attendance recognition, attendance rate for students in grades 1-12, the total number of days present divided by the total number of days in membership must meet 96.0% in district level and 96.0% in middle school level.

elementary school, were connected to the central administration building via gigabit fiber-optic cables. The campus operated on a switched 100Mbps Ethernet network. All classrooms, portable buildings, libraries, and administrative areas have connectivity to the Internet.

Selection of Research Participants

The participants in this study included one female social studies teacher, Ms. Brady, and the students in her social studies classroom at the Pheasant Rock Middle school. Her classroom consists of 30 children, whose ages ranged from thirteen through fourteen. In fact, the number of students was large considering that the ratio of students to teachers in the school was 13:1 in this school. In the teacher's eighth grade social studies classroom, the ethnic makeup included a majority of European American students, an Asian American girl and an Asian American boy. There were no Hispanics, African American, or Native American students in her classroom. The gender distribution of students was approximately equal and the majority of the children came from upper middle class socioeconomic backgrounds reflecting the school's local climate.

As a matter of fact, the main interest of this 'single case study' was to investigate in great depth how the teacher's heavy use of technology might shift a social studies classroom towards a constructivist learning environment conducive to fostering students' higher order thinking. For the purpose of carrying out my research, the top priority was to locate an informant who could provide the most important information about the classroom utility of technology (Patton, 2002). It was not an easy job. Eventually, I was introduced to a possible candidate for the study by my dissertation advisor. The participant teacher whose name was 'Ms. Brady' (Pseudonym) was recommended by the

principal in the school, as one who would offer insight into the use of computer technology in a social studies classroom.

In choosing a participant teacher for the study, I considered several selection criteria. The teacher who participated in my study met all of the criteria I had set. First, the participant teacher had adequate knowledge of and skills in the use of computer technology. Second, she also had been utilizing technology for the purpose of classroom teaching on a weekly basis for several semesters. Besides the teacher's familiarity with and competence in technology, her school had, as described above, a substantial infrastructure of computer technology that could be used as resources for her social studies teaching. In addition, her school was generally very supportive of the teacher's efforts to incorporate various modern technologies into her classroom teaching. Because of the presence of my set criteria, I could expect the maximum likelihood of observing technology-enhanced, constructivist teaching practices to cultivate students' higher order thinking.

In terms of sampling, my study participant was not a typical case but an extreme (unique) case (Merriam, 1998). One of the advantages of examining 'the extreme case,' according to Maxwell (2005), is that it "provides a crucial test of theories and can illuminate what is going on in a way that [a typical] case cannot" (p.90). Existing research literature, as I mentioned earlier, shows that emerging technology has an enormous potential for the promotion of students' higher order thinking. By choosing the exemplary case, in terms of the school as well as the teacher, I could test the current view on the technology's prospects for classroom instruction. I assumed that if the potentials were not realized in this ideal situation, it would tremendously difficult to achieve the promotion of higher order thinking with technology in other, 'typical' school environments.

LEARNING FROM THE PARTICULAR CASE

It is, at this point, necessary to raise an important question, what is the study's value beyond the setting and participants? In other words, is it possible to apply the findings from this single case to other places, time, and persons, and if so, in what way? I was plagued with these questions. My foremost interest in the study was to better understand the particular teacher's teaching experience using technology. The teacher was selected primarily because of all the uniqueness of her teaching practice with technology and my intrinsic interest in it, rather than its representativeness of other possible cases. Yet, at the same time I was also interested in advancing existent classroom practice with technology integration.

Since the governing rules of human life and social interaction, unlike the laws of physical sciences, are ever changing and embedded in contexts, so are the complexities of classroom practice. Hence, the notion of generalizability in the traditional sense should be reconceptualized according to the underlying assumption of qualitative inquiry. Case researchers do generalize to findings of their case in other situations. The generalizing mechanism, however, is somewhat different from those of traditional research (Merriam, 1998).

Using the concept of vicarious experience, Stake (2000) explains the mechanism of the generalizability to other cases. He writes:

> Researchers use the methods for casework that they actually use to learn enough about their cases to encapsulate complex meanings into finite reports – and thus to describe the cases *in sufficient descriptive narrative* so that readers can vicariously experience these happenings and draw conclusions (which may differ from those of the researchers). (Italics added) (p.439)

He called the process "naturalistic generalization," in which the readers of case studies "extend their memories of happenings" through the vicarious experience. From the constructivist perspective, Stake insists, the readers have "a certain *cognitive flexibility*, the readiness to assemble a situation-relative schema from the knowledge fragments of a new encounter" (Italics original) (p.443). He further holds, "People find in case reports certain insights into the human condition, even while being well aware of the atypicality of the case" (p.443). The issue consequently is not how the findings from a single case can be, by themselves, generalizable to other situations, but what the readers can learn from the single case.

In the utmost respect, this study intended to inquire into a teacher's classroom teaching practices in sufficient depth rather than in breadth. In-depth reporting about an individual case is the hallmark of qualitative case studies (Wolcott, 1994). They are designed to shed light on a phenomenon. In cautioning against "the potentially mindless activity of simply cataloging similarities and differences" among each case, Wolcott argues, "the risk in conducting fieldwork at multiple sites is to forge the opportunity to produce one *well-contextualized* qualitative study in the course of producing an inadequate quantitative one" (Italics added) (p.182).11

Stake (2000) also emphasizes the importance of studying single or a small number of exemplars intensively, rather than making comparisons between cases. He, basically, views "comparison as actually competing with learning about and from the particular case"(p. 444). By focusing on comparison, he argues, the uniqueness and complexities are forfeited. In the particularity "lie the vitality, trauma, and uniqueness of the case" (p.444).

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11 Hence, he strongly recommends "a lone qualitative researcher [like myself], working with inevitable limitations of time and resources, ordinarily should pursue one case study in depth" (p.183). I was heartened by his aphorism: "Get the heart of the matter if possible; if not, compare" (p.183).

Overall, in this study, I wanted to learn about the real prospects (and its potential pitfalls) of technology from the teacher's classroom teaching experiences with technology "in sufficient depth for this level of details to have any significance" (Wolcott, 1994, p.184). My intention was that other researchers would do more in-depth case studies on the same topic that I addressed here and then, as Wolcott said, uncover "systematic relationships" among diverse circumstances. I also intended that the study would guide future researcher surveys or treatments designed to discover significant systematic differences regarding the value of technology for thoughtful social studies learning. Equally importantly, the study was conducted in the hope that teachers who want to incorporate technology into their classroom teaching would gain some useful insights into the way it enhances students' learning.

GAINING ACCESS

The process of gaining access to the middle school and the participant began through a formal gatekeeper in the school district. In October 2004, my dissertation advisor, who played an intermediary role, and I met the Executive Director of Curriculum and Instruction at the school district in his office to obtain permission to conduct my study in the Pheasant Rock Middle School. At that time, I explained the nature of my study by presenting my research proposal and responded to his questions. He expressed his interest in my research topic and signed a site letter (see Appendix A) that granted permission for me to conduct research at the school.

In January 2005, I made a contact visit to the school principal's office before the actual data collection to acquire consent for the teacher's participation in my study. I explained the study to the principal and to the teacher, and provided them with copies of the research proposal, the purposes of my research, procedures for data collection, and

potential contributions toward classroom practice. In addition, I responded to their concerns about the demands of my research on the teacher. I also explained that all my data including observation and interview transcripts would preserve anonymity and confidentiality, and that data would be collected and disseminated in an ethical manner. At that time, by signing an informed consent form (see Appendix B), the teacher agreed to participate in my research study.

In addition to the site letter and informed consent, I also obtained parents and children's permission through written consent forms (see Appendix C) prior to beginning formal observations. When I visited the school I began to collect relevant documents, taking them from the materials cabinet in the school's front office area, which furnished visitors with school information. Throughout my fieldwork, I initiated and maintained communication with the teacher via email to determine her planning schedule and to schedule interviews and observations. Ms. Brady responded promptly to my email messages.

COLLECTING NARRATIVE DATA

In order to understand the teacher's classroom teaching with technology in its totality by giving a holistic and intensive portrait of it, I collected data from multiple sources using three different methods. I collected stories from interviews, observations, and document analysis, all of which are typical forms of collecting data in case studies (Stake, 1995; Merriam, 1998). Transcripts of all classroom/lab observations and interviews with the teacher were the major sources of data for the study. Various forms of documents relevant to classroom project played a supporting role as secondary sources of data.

Interviewing

According to Mishler (1986) and Seidman (1998), as a method of data collection, interviewing offers a powerful way to access people's experience and the meaning they make of it (the insider's view) because by interviewing we hear their stories. Thus, "telling stories is essentially meaning-making process" (Seidman, 1998, p.1). The researchers also argue that by interviewing we are provided access to the context of people's actions, allowing us to understand the meaning of those actions (the outsider's view). Hence, in order to understand the teacher's teaching experience in a real classroom context, interview was a particularly appropriate method of data collection. In fact, for this study, interviewing was the only way to access to the teacher's past two years' of teaching experience with technology.

The interview form utilized in this study was mostly semistructured. Mishler (1986) points out that stories are more likely to be found "in studies using relatively unstructured interviews where respondents are invited to speak in their own voice, allowed to control the introduction and flow of topics, and encouraged to extend their responses" (p.69). According to Kvale (1996), the semistructured interview "has a sequence of themes to be covered, as well as suggested questions. Yet at the same time, there is an openness to changes of sequence and forms of questions in order to follow up the answers given and the stories told by the subjects" (p.124). Throughout each of the interviews I conducted with her, I looked carefully at how the teacher connected her responses to my questions into a sustained account. I noticed that in most cases she was open, honest, and eager to share her teaching stories.

Before the interviewing process, I prepared an interview guide that consisted of a set of questions or issues to be explored. In fact, my interview guide contained an outline of topics to be covered with possible questions. Even if I came to each interview with the

basic questions that established the purpose and focus of the interview, my subsequent interview questions frequently flowed from how the teacher responded to previous questions (Seidman, 1988). The basic strategy of my interview was that I gave the teacher ample freedom and time to unfold her own stories, and I followed up with questions to clarify the main topics in her narratives (Kvale, 1996). Consequently, the interview questions were relatively open-ended.

I interviewed the participating teacher four times during my study period. The first interview took place in the beginning of this research on March 22, 2005. The second and third interviews took place at the beginning of and at the end of classroom observations on April 27 and May 24 in the year respectively. The final follow-up interview was conducted on February 8, 2006. The first three interviews took about an hour and the last about 20 minutes. (The last interview was somewhat restricted because of the teacher's schedule). The interviewing site was the teacher's social studies classroom in the school. All four interviews were voice-recorded. Transcribers assisted me in the transcription of all the interviews.

Interview One

This initial interviewing was devoted to the reconstruction of the teacher's past teaching experiences using technology in the school. The topics covered in this first interview included: teaching experience as the teacher begin her teaching in this school, use of technology in her classroom teaching, lesson planning, the way the teacher evaluates the students' work including a technology component and her conceptualization of higher order thinking, the kind of teaching style she used in class to promote students' higher thinking, social studies topics most conducive to the use of technology, the way

technology improves teaching higher order thinking, and barriers to using technology (see Appendix D for the sample interview questions).

I interviewed the teacher in company with my dissertation advisor. I led the interview throughout the interviewing time. A couple of times, my advisor rephrased my questions when the teacher had difficulty in grasping the main points I asked her. She sometimes asked the teacher a relevant subquestion during the interview. Both this first and the second interview provided the context for the full understanding of the teacher's end of year movie project.

Interview Two

As in interview one, the second interview also focused on the teacher's past teaching experience with technology. During the interview, my advisor, at my request, guided the questioning. Unlike the other three interviews, this interview was more like an unstructured conversation. During the first half of the interview, we spent our time asking the teacher about how she used two Internet tools, unitedstreaming and online textbook in her classroom teaching. Those were technologies dominant in the teacher's social studies classroom that she had mentioned in the previous interview. In the last half of the interview, we walked through the year's social studies curriculum and teaching up to the present time. We asked her to highlight some of the technology-based projects that she had already mentioned, the ones that stood out, starting at the beginning of the year that built up toward the completion of the movie project at the end of the school year (see Appendix D for the sample interview questions).

Interview Three

In this third interview, the teacher was asked mostly about the year's movie project. The interview was conducted immediately after ending the movie project, which I had observed throughout. The primary purpose of this interview was to acquire additional data about the teacher's perspectives about the movie project. I started the interview by asking the teacher about her school and the students in her social studies classroom during the year and the instructional goals of her technology based lessons. I also asked her about the influence of the use of technology on her overall teaching and her beliefs about student learning (see Appendix D for the sample interview questions).

Interview Four

This was a short follow-up interview that I conducted at the end of data analysis to gather additional data. This interview was not included in my original proposal. As I analyzed data that I had already collected, I noticed that I needed further information about such things as the infrastructure of the school's computer labs, curriculum guides the teacher used for the movie project, and the students' rubrics made during the project. Overall, like in previous interviews, this one focused mainly on the previous year's movie project (see Appendix D for the sample interview questions). At this time of interviewing, I also asked the teacher to member check and to correct several parts of the transcripts from the classroom observations that I had difficulty figuring out.

Observation

Patton (2002) states, "the first-order purposes of observational data are to describe the settings that was observed, the activities that took place in that setting, the people who

participated in those activities, and the meanings of what was observed from the perspectives of those observed" (p.262). According to Patton, one of the several advantages of fieldwork is that "through direct observations the inquirer is better able to understand and capture the context with which people interact" (p.262). In addition, the observational fieldwork offers the unique opportunity that interviewing cannot to see things that may routinely escape interviewers' awareness, to learn things that the participant would be unwilling to talk about in interviews, and to move beyond the selective perceptions of interviewers (Patton, 2002). In this study, the direct observations of the classroom/lab sessions provided rich data upon which to draw a holistic portrait of the participant teacher's teaching practice using technology and her students' learning activities.

Throughout the spring semester of 2005, I observed a technology based project, which was called the 'movie project,' conducted between April 25 and May 20. Because the movie project was an archetype of the teacher's technology-based lessons, it was suggested that I observe it [the unit of instruction] by the teacher. The three-week movie project provided students with a technology-rich learning environment in which they could engage in challenging classroom activities using a variety of modern technologies.

I observed 15 class sessions and video-recorded all of them except for one session. Standing behind her classroom/lab with a digital camcorder I observed the teacher and her students without any interruption of the classroom activities and without any interaction with Ms. Brady or her students. I sometimes followed the teacher with my camcorder as she was working with a group of students. When the project was taking place in one of the school's computer labs, the teacher used a small wireless microphone. The microphone built into the digital camcorder was able to record the teacher's voice in

the social studies classroom. However, the computer lab was too spacious for the camcorder to catch her voice.

All of the video-recordings were transcribed verbatim by a transcriber to accurately portray the classroom activities of the project. I asked the teacher to member check and to review some parts of the transcripts and to make some corrections due to inaudible spaces in the tape and the occasional low quality of audio system in the computer lab. During the observation period, I made field notes of any important points for later data analysis. In fact, my field notes were not extensive but restricted because I video-recorded the whole project sessions.

Document Analysis

Because of the limitations of observational and interviewing data for a comprehensive portrait of the teacher's teaching experience with technology (Patton, 2002), I collected various written documents in and out of the teacher's classroom. These were materials used for classroom teaching and curriculum planning by the teacher, produced by her students as assignments, and public records of state curriculum standards and the school information available on-line and off-line.

The documents that the teacher used for planning curriculum and teaching her classes included the Texas Essential Knowledge and Skills (TEKS) and the Texas Assessment of Knowledge and Skills (TAKS) for Social Studies and Technology Application developed by Texas Education Agency, the state-adopted social studies textbook, and a teacher-developed instructional guide for the movie project. The written work that the students created as part of assignments in class contained assessment rubrics, movie scripts and storyboards. Among them, the students' movie scripts were conducive to the portrayal of the classroom presentation of their products at the end of

the movie project. The public documents utilized during the study included a school report card, report of school survey, campus accountability data and accountability manual from the Texas Education Agency. Those public records were mainly used to provide contextual information about the school.

NARRATIVE ANALYSIS AND REPORTING

The Narrative Analytic Strategy

In this study, the narrative data were analyzed and interpreted using a narrative analytic strategy. Data analysis in a narrative case study is a process to synthesize the entire corpus of narrative data to 'construct' a logically coherent story. The narrative analysis is "a way to select and fit together field texts into an overall text" (Clandinin & Connelly, 2000, p.139). Analysis in narrative study is, at the same time, a process of reconstructing human experience (Riessman, 1993). The process requires the researcher to create a richly detailed account of experience drawn from a variety of narrative data sources. Riessman says, "the purpose is to see how [participants] impose order on the flow of experience to make sense of events and actions in their lives" (p.2). In narrative case study, throughout the whole analytic process, as sources of data and as the outcome of the study, story itself is the object of investigation (Connelly & Clandinin, 1990).

Polkinghorne (1995) reminds us, "the process of narrative analysis is actually a synthesizing of the data rather than a separation of it into its constituent parts" (p.15). Unlike the most qualitative analytic techniques, narrative analysts do not make people's storied lives into formal categories such as gender, race, or other social structures through the use of abstraction. They also do not seek to find common themes and elements to claim general knowledge across the narratives collected as data. Because this kind of

formalistic abstract “upward to overarching categories” and reduction “downward to themes,” by necessity, lose the unique and particular aspects of narratives (Clandinin & Connelly, 2000). Such categorizing strategies, according to Maxwell (2005), cannot recover the contextual ties that were resided in the original data.

The outcome of a narrative analysis is a credible story, portraying the people’s perspectives and actions which places them in the context of the actual lived settings. In this case study, the rich, thick description, which is the hallmark of case studies, is done through portraying the teacher’s classroom practice in its context as a coherent whole (Lawrence-Lightfoot & Davis, 1997). It is through this portrait that I represent and interpret the teacher’s teaching and her students’ engagement with technology in a middle school classroom. With its focus on narrative, according to Lawrence-Lightfoot and Davis, “the portraits are designed to capture the richness, complexity, and dimensionality of human experience in social and cultural context, and conveying the perspectives of the people who are negotiating those experiences”(p. 3).

In portraying the teachers’ teaching and her students’ learning experiences in their classroom/lab, I made every attempt to provide ample contextual factors, such as those related to teaching practice with technology. Context is crucial in order to understand their experience more fully because human experience is framed and shaped in social, historical, and physical context (e.g., Lawrence-Lightfoot & Davis, 1997). Unless placing people’s actions, thoughts, and feelings in the natural setting in which they happened, it is virtually impossible to achieve true understanding of what they did, thought, and felt. Clandinin and Connelly (2000) asserts that narrative studies should address “both personal and social issues by looking inward and outward, and addresses temporal issues by looking not only to the event but to its past and to its future, … and

attend to the specific concrete physical and topological boundaries of inquiry landscape" (pp.50-51).

The overall findings of this study were written as a narrative form consisting of two parts of a portrait. Particularly, I composed the first part of the portrait more thematically and the second chronologically. In writing the first part of the portrait, which is the teacher's past two years of teaching experience with technology, I traced emerging themes and pieced together those themes into a whole. In the second part of the portrait, I vividly portrayed the way the teacher integrated various modern technologies into her movie project. I presented the ways in which her students carried out the movie project, portraying their lab presentations of the finished products.

In order to compose the portrait, I first searched for emergent themes. While reading the transcripts of the interviews and observations and the multifarious documentary data, I broke down the whole content of the transcripts and documents into a number of meaningful elements and got rid of the unnecessary parts. I analyzed the elements carefully and placed them into several overarching themes; thus, they created a thematic framework for the construction of the portrait. As soon as the themes emerged, I marked them on the transcripts and the documents and made notes on my computer files. In fact, I transformed all of the video recordings into DVDs and watched each of them several times on my laptop computer. I used a DVD playing program which made it possible for me to control playing speed and to capture specific scenes when necessary.

Making the Narrative Coherent

Once the emergent themes were recognized, I wrote a rough draft of the teacher's teaching story and her efforts at integrating technology in her classroom teaching in the past and present years. In fact, the draft did not have the particular quality

of a coherent whole as a narrative at this point. It was just an arrangement of the emergent themes developed without having “resonance”. The resonance of the portrait is achieved when it sounds with authenticity as an aesthetic whole. According to Lawrence-Lightfoot & Davis (1997), the process of moving from emergent themes to the aesthetic whole involves four dimensions: identifying a conception, building structure, creating form, and developing coherence.

In order to make the teacher’s teaching story resonant, I first attempted to identify the conception, “the overarching gestalt, the big story that will frame, focus, and energize the narrative” (p.259) from the draft. As I started the first revision of my rough draft reading it over and over again, I gradually realized the dominance of an overarching thread that revealed itself in many parts of the teacher’s past teaching story. Ms. Brady mentioned repeatedly how “hair-raising” her movie project was. She was eager to share her teaching story of what had happened when she had previously done the movie project with her students. Consequently, the movie project became the conception of the portrait, the overarching story that gave order and focus to the piece.

I then built the structure, whose girders served “as a scaffold for the narrative” (p.252). These thematic threads function as plots in the story. Plot is the narrative structure through which people understand and describe the relationship among the events and choices of their lives (Polkinghorne, 1995). In my study, the girders were explicit in the conceptual framework. The relevant concepts, such as higher order thinking, technology, and teaching and learning, found in the existing research literature became one dimension of the girders and the emergent themes revealed in the narrative data became another dimension of the girders. These cross-cutting threads built the narrative structure in this study. The emergent themes were expressed in each subheading of the portrait.

In the next process of constructing the coherent portrait, directly drawing a number of quotes from the transcripts of interviews and observations as much as possible, I gave the portrait "the texture of emotion, intellect, and aesthetics" (Lawrence-Lightfoot & Davis, 1997, p.254). They were informative and rich in emotion. The direct quotations created the form of the portrait, "the flow of the narrative" (p.259). While the structure built in subtitles offered clarity to the conception of the portrait, the form gave "life and movement to the narrative, providing complexity, subtlety, and nuance to the text, and offering the reader opportunities for feeling identified and drawn into the piece" (p. 254).

Finally, I completed making the draft resonant through the narrative coherence, carefully sequencing events and articulating my clear and consistent voice and perspective. All the pieces of the narrative were put in place, making the relation of parts orderly, logically, and aesthetically consistent. Reflecting my voice and perspective in the field as a complete observer of classroom/lab and a sympathetic listener to participants' story, I remained standing on the edge of the scene observing activities and listening for the participants' voices diligently, and interpreting them to be able to see the whole. In the portrait, consequently I narrate in a fairly muted and cooler tone.

Overall, when my portrait possessed all of the qualities of a resonant narrative, those of conception, structure, form, and coherence, I intended that those who read it would, as Lawrence-Lightfoot & Davis (1997) said, have the special benefits of a credible story. The general readers would gain "insight, identification, and recognition" because it makes sense to them. The participants would see their images reflected in the narrative because the essence of their being got revealed. And I myself would see the "true value" in my work because of "the deep knowledge of the setting and self-critical stance."(p. 247).

In the following chapter, I presented the true story of my participating teacher's strenuous efforts to make difference her classroom teaching using technology.

CHAPTER 4: TWO PORTRAITS OF THE SOCIAL STUDIES TEACHER'S EFFORTS TO INTEGRATE TECHNOLOGY INTO HER CLASSROOM TEACHING

Part One: Ms. Brady's Previous Experience Teaching with Technology

A WOMAN OF NATURAL TALENT FOR TEACHING HISTORY

Ms. Brady[12] was a middle school history teacher with five years of teaching experience in the field. She had completed her teacher certification for secondary social studies teaching at Southwest Texas State University, in Texas. During the period of certification, she had been exposed to various training programs for classroom use of computer technology, which endowed her with much knowledge for her future teaching with technology. After student-teaching at a high school in Texas, she taught eighth grade history for two years at Southlake. On March through May, 2005 while being a participant in this study, she had been teaching eighth grade history for three years at Pheasant Rock Middle School (Pseudonym) in Texas.

Ms. Brady has been very satisfied with her decision to teach American history in the middle grades. When I asked her whether she likes teaching social studies, she provided several reasons to explain why she "loves" it. She told me that when she studies history and social studies, she really looks at not only historical events but also people. She really was enthusiastic about studying the lives and stories of people. She made a distinct connection between history and self. She said, "You can get a lot about your own life from [them], a lot about the world from [them]" (Interview, 3/22/05, p.1). Her youth experiences had also influenced her choice to select history as her professional teaching subject. She said, "I was exposed to travel a lot when I was younger. I think that really

[12]. All persons' names used in the chapter are pseudonyms.

sparked my interest and curiosity for what's going on in this world, and over time what's been going on [in contemporary times]. It's just very much part of who I am" (Interview, 3/22/05, p. 1).

In addition, Ms. Brady reads history books all the time. She was particularly interested in 'art history'. She has two degrees in art history. Her undergraduate degree was in humanities, with a focus on art history. She earned a Master of Arts degree in history and her master's thesis was primarily on art collection. She thought that art was very useful in teaching history in terms of students' motivation. She said:

> [Teaching history is] really challenging, it's really important for kids to have exposure to history in a fun and positive way that gives them an interest in it so that it's not just boring for them. I think it's very valuable and I enjoy it personally. (Interview, 3/22/05, p.1)

To summarize, Ms. Brady chose history as her professional teaching content because of her particular interest in the lives of other people, her many childhood experiences of traveling, and her college major in art history. It appeared that she had a natural aptitude for teaching history.

TECHNOLOGY, AN INDISPENSABLE PART OF SOCIAL STUDIES TEACHING

Ms. Brady believed that in contemporary times computer technology is an essential requisite for classroom teaching. She explained the reason behind her decision to infuse technology into history learning:

> Without technology, we're not really educating our kids because that's their whole world. As they go forward into the world it's all technology. You can't get through a day without some form of technology and most people constantly interact with technology. (Interview, 5/24/05, p.8)

Hence, Ms. Brady thought that it was very important to teach students to use technology in productive ways that made subject content more accessible. In other words, she wanted her students, using technology effectively, to better understand the content of social studies. Further, she hoped that they were able to integrate it into their minds through technology.

For those purposes, Ms. Brady employed a variety of computer technologies in her social studies classroom. Some of them were more conventional, such as PowerPoint presentations and Excel spreadsheets, while others were more cutting-edge modern technologies, such as Internet and multimedia tools. Among them, the most dominant technologies that she used throughout the year included web-based tools like online textbook and unitedstreaming, a TimeLiner software program, and movie making tools.

Online Textbook

'Online textbook' was one type of technology that Ms. Brady adopted recently. The textbook publisher of the textbook adopted by the school district in which Ms. Brady worked provided a supplementary state-adopted textbook on the World Wide Web. She used it mostly for introducing topics for review in her classroom. She thought that the online textbook was helpful for visual learners because it had animated graphics where students could actually watch the development of historical events, such as the battles of the Civil War. Especially, it was a very useful tool for her special education learners, she believed. She sometimes allowed her students to access the online textbook in the computer lab. It made it possible for her students to study social studies "in their own way, in a personal way, as much as or as little as they want" (Interview, 3/22/05, p1). The resource had links to additional information about the topic. It also had games, puzzles, flip cards, vocabulary, and quizzes to help the students prepare for their tests. Ms. Brady

noted, “Those are things that they need individual practice with, and it’s better for them to use either in the lab individually doing what they need to do, or at home” (Interview, 4/27/05, p.5). Thus, Ms. Brady believed that the online textbook was helpful in individual instances but that it was not that useful in a classroom setting for the whole class.

The unitedstreaming

Another technology Ms. Brady regularly made use of in her social studies classroom was a web-based video depository, which was called ‘unitedstreaming’. This was a digital video-on-demand service delivered by Discovery Education through the Internet. According to their website, it had more than 4,000 educational videos available for use in the classroom at any time. The videos were categorized according to age groups. Ms. Brady found that she was able to locate 90 percent of the social studies topics that she sought for use with her middle school students. She utilized the unitedstreaming from about once every two weeks to over twice a week, depending on the quality of the movies and on the topics she was teaching.

The streaming videos were, however, not always well organized according to units of instruction, as indicated from Ms. Brady’s experience in searching the database when teaching about certain subjects, like the Constitutional Convention. As a result, when she had difficulty locating the relevant videos she needed, she took advantage of the searching capability of the website. “I can put in any kind of search key words, and it will pull up everything they have” (Interview, 3/22/05, p. 2) she stated. She generally did not stream the videos directly from the website. Instead, she downloaded them on her personal folder in the school server and showed them to students in her classroom using a projector. By using this method, she assured that there would be not technological difficulties while streaming the videos in the classroom.

Ms. Brady used the unitedstreaming in two different ways in her teaching. One of them was to teach a lesson on a particular topic, first conventionally by lecture and then to show students the video or film clips. She used this type of instruction because she thought, "[for] the kids of this age in particular, when they see something visually, it really helps a lot of them to reinforce [what they learned]" (Interview, 4/27/05, p.1). In addition, the unitedstreaming provided "a second layer of understanding" of the content, giving them a visual contact with it. The other way that Ms. Brady utilized the unitedstreaming was to show video or film clips for about 15 or 20 minutes before she taught a lesson. In this way, she provided scaffolding in advance of a lesson, and then went into more details on the topic or gave notes. She was pleased with the results of this type of teaching.

Meanwhile, Ms. Brady acknowledged that watching the streaming videos did not, by itself, trigger students' higher mental abilities. Because, she thought, "It's not like they're in and of themselves really technologically advanced. It's just the delivery… Kids don't have that picture or the mental image [of a historical event]; it doesn't go in as deep. It's another way for higher learning thing to take place and the connections to be made" (Interview, 4/27/05, p.1).

TimeLiner

Ms. Brady also used a visual information organizer, called TimeLiner, to teach the concepts of time and chronology. It was a practical and easy-to-use software tool for creating, illustrating, and printing timelines of historical, contemporary, and future events. She did timeline activities because sequencing was an important skill for the Texas Essential Knowledge and Skills (TEKS) for Social Studies, required by state curriculum policy. According to the TEKS for Social Studies, it was not necessary for

students to know the exact dates of historical events but they should be able to place the events in chronological order. Ms. Brady said that students should be fully aware, for example, that the Declaration of Independence happened before the American Revolution. She explained the reason why she used the timeline program:

> I think the benefit is [that] it does make [sequencing] nice and neat. Still, I can do the same thing with paper and pencil, but I get nice graphics that they can manipulate and use, and [it] gives them a nice visual to put with the time frame. So that works out well. (Interview, 3/22/05, p.2)

Overall, although those three software tools, online textbook, unitedstreaming, and TimeLiner offered Ms. Brady's history classroom some benefits of modern technology, as she recognized, their roles in social studies learning was marginal and supplementary. Moreover, they were of limited value in engaging her students in higher level learning.

The Movie Project

However, Ms. Brady's movie project was quite distinct from those technology-aided lessons aforementioned because it provided her students with a congenial learning environment for complex and challenging classroom activities. Her movie project encompassed a variety of computer technologies. They included not only video technology, like a digital camcorder and video editing software, but also information and communication technology (ICT) like web browsing and email. She pointed out what she expected from her students during the movie project:

> Students were to come up with their own subjects. They were to make a decision about what they were going to say and how to film them. They were also to be familiar with various technological aspects of their projects such as how to use a

> digital camcorder, how to put raw footages onto a computer, and how to edit them with computer software. Throughout the movie project, students were given many different choices to think about. (Interview, 3/22/05, p.2)

Two years prior to this research, when the movie project was first implemented in her history classroom, Ms. Brady and her students utilized VHS video cameras instead of digital camcorders. The big disadvantage of the VHS technology was that students could not edit their movies easily and effectively. She started, therefore, having students use the digital camcorders from the previous movie project. At that time, she also began using video editing software in her movie project. In spring 2005, Ms. Brady was planning to include another aspect of modern technology to the movie project which she had not done before. She was hoping that her students could burn their movies onto DVDs. Last year, they were not able to do so because the computer lab did not have a DVD burner. Recently, however a DVD burner was installed onto one of computers in the school's computer lab.

As a matter of fact, Ms. Brady constantly strived to incorporate cutting-edge technology in her classroom teaching, as much as she could. The more she used technology, the more she wanted to find different ways to incorporate it. She, however, did not want to use technology just for its own sake. She wanted to utilize it in the ways that her students were interested in and that were useful for their learning of history. As her experience of using technology increased, she realized that:

> I've learned more about what works and what doesn't work for me. In terms of certain projects, I don't do anymore because I didn't feel like they were that productive or because we didn't gain that much by doing it through technology. (Interview, 5/24/05, p.10)

It seemed that Ms. Brady's students were very engaged in her past technology-based social studies classes. She said, "I believe that my [students] liked very much to have the opportunity to be in front of a computer" (Interview, 3/22/05, p.2). Particularly, her movie project made them "go nuts." She received a variety of positive letters about the movie project from her students at the end of the school year. She proudly said, "[the movie project] is the greatest thing ever… [Students] definitely enjoy that. I think, not only because of technology but the idea of being a movie maker, really lights them up" (Interview, 3/22/05, p.3).

PLANNING IS HARD BUT IT IS WELL WORTH THE EFFORT

At Pheasant Rock Middle School, the academic year was divided into 6 six-week terms. Ms. Brady, usually, spent from ten to twenty hours, over the course of each six weeks, planning her lessons. Particularly, planning the movie project took her an additional 5 hours a week, in order to search for the necessary informational resources and think about what she was going to do with them. Sometimes it was necessary for her to put more time and effort into planning her movie project. Part of the reason was that each year she used technology in a different way. For example, in the previous year's movie project, her students made PowerPoint presentations, analyzed primary sources, and published them on a web page. During this study, they made movies with digital camcorders and edited them using editing software for their presentations. The other reason for the investment in time was that Ms. Brady did not use the same topics in her classroom each year. Last year, for example, the content of her movie project was the 2004 Presidential election, while this year it was the American Civil War. "But nothing compared to my first year [of doing a technology-based history project]. I didn't sleep. I was planning so much," (Interview, 4/27/05, p.7) she laughed.

Ms. Brady recognized that there were a variety of social studies topics appropriate for her technology based projects. She said that she could really see the different applications of computer technology in any part of history. On some occasions, she had used technology to cover specific topics like 'presidencies'. There were, however, certain content areas that she had used more than others in her projects. Those included wars or battles, elections, development of colonies (basic colonization), and "life style of the rich and famous" in the colonies. Hence, she mentioned:

> Social studies is a very rich subject, [which is] full of topics, [that would be appropriate for technology based projects] and it's more about what we're trying to teach. We can find a topic pretty much anywhere along the line. It's just a matter of time, [which is] the only constraint that I feel. (Interview, 3/22/05, p.7)

For the effective utilization of technology in her social studies teaching, Ms. Brady sometimes got ideas from other teachers. However, due to the rigid school scheduling, she did not have a common planning period in which teachers who were involved in the use of technology had time to work together. She thought that this lack of common planning time was a great disappointment to her. She pointed out the importance of the common planning time:

> In my old school we planned together and that tended to really, for me, be more effective in dreaming up new interesting things to do with kids because it was probably a dynamic thing. The teachers who worked with me, worked well together, and we played off each other. We could do a string and we could split it up so that it was manageable. (Interview, 4/27/05, pp.7-8)

In retrospect, she stated that having a lot of team teaching experience in her previous school gave her the opportunity and expertise to gain several valuable ideas about technology integration that she used in her current classroom.

Meanwhile, according to Ms. Brady, the instructional goal of her technology based lessons was generally twofold: They were structured to communicate not only the content area, the social studies requirements for the state curriculum, but also the technology requirements. In planning the technology based lessons, Ms. Brady referred to the state's and school district's curriculum guides. She received a list of technology objectives that her students were supposed to know in eighth grade from the Texas Education Agency (TEA) and her school district. The objectives were very specific about what was expected for students to be able to do regarding both technology applications and computer literacy. For example, students should be able to create a word document inserting a graphic, be able to design a spreadsheet with facts and dates, and be able to do a PowerPoint presentation with three slides and different backgrounds.

Having those technology objectives in mind, what Ms. Brady did with the social studies subject area was to integrate social studies content into them. When Ms. Brady planned a unit of instruction, she tried to think of how well she could teach it while meeting those technology objectives. She pondered, "How can I communicate this content in a way that students can also learn the technology objectives" (Interview, 3/22/05, p.3). For example, when she planned a PowerPoint project, she carefully thought about what important things the students needed to know from a social studies aspect and how they could display those points using the PowerPoint software. This was often how Ms. Brady came up with most of her original ideas about her technology based history lessons.

After those considerations, Ms. Brady developed project guides for both herself and her students. However, her guides did not always work as well as she intended. She mentioned the provisional nature of her project guides, giving an example from the movie project:

> For my movie [project], some of it was, in the beginning, written down [carefully]. Then, as we go along, sometimes I just have to kind of ad-lib because I never know what's going to happen. It's kind of *chaotic* really. And, that would probably be a problem for a lot of teachers. Because it really does stress them a lot more than just [all students] sit still and do their work. (Italics added) (Interview, 3/22/05, p.3)

One typical example of such 'chaos' in her movie project, according to Ms. Brady, was when she was trying to import and export movies between computers and digital camcorders. There she had trouble with the file sizes. She had to know exactly how big those movies were. It was very important for her to find out the actual size of a movie in order to put it into a proper place because the files were very large and required a lot of storage space. Most of the time, Ms. Brady figured it out by trial and error. She explained what she had originally thought when she began her movie project last spring:

> If I have to know everything before I go into a project, it'll never happen. And so last year, I finally just said, okay, I'm jumping in and we'll see what happens. And, was it perfect? Did everything work out? No. But, with a project like that, it's not going to, especially in this school situation. (Interview, 3/22/05, p.10)

In spite of such difficulty, Ms. Brady believed that it was definitely worth doing the movie project. She stated how the students were exhilarated when they were beginning to edit movies: "when we're trying to import all of the different footage that we get in the digital format into the computer, it's *hair-raising*" (Italics added) (Interview, 3/22/05, p.3).

"I'M GOING TO BE IN BIG TROUBLE, IF STUDENTS DON'T DO WELL ON THE TEST"

Before this school year, Ms. Brady did the movie project at the beginning of the spring semester. However, this year, the project began after the administration of the state-mandated Texas Assessment of Knowledge and Skills (TAKS) test, which was scheduled in the middle of the spring semester, in April, 2005. The reason for changing the original plan was that it took a long time for the students to finish their movie projects. Consequently, Ms. Brady would get far behind her proposed teaching schedule. She revealed that this made her get into a near panic because she was under the high pressure of the state testing. When the time plan was changed, she had more flexibility doing the movie project in terms of time.

The TAKS, a mandatory standardized testing program for public school students in grades 3-11, was designed to measure the extent a student had learned, understood, and applied the important concepts and skills expected at each tested grade level. The TAKS was measured and aligned to the Texas Essential Knowledge and Skills (TEKS) curriculum guidelines. The social studies TAKS was first administered in the spring of 2003. Students were tested during the spring semester of each school year in various subjects. Eighth grade was the first grade level required to take the social studies TAKS tests, and passing the TAKS test was one of the graduation requirements for the eighth grade. The cut-off score had been increased gradually every year and the test had been made much harder. The test adversely affected the way Ms. Brady employed technology into her social studies lessons. She told me a story of how it prevented her efforts to expand technology in her history teaching.

At the time I met Ms. Brady for my first interview, March 22, 2005, she was four and one- half weeks away from the TAKS test. She was supposed to cover the 1600's through 1865, quite in-depth for the test. It was necessary to cover each period along the

way comprehensively. At that time, Ms. Brady was teaching about Andrew Jackson, and the time period between the years of 1824 and 1828. Yet, she still had to cover a number of other historical issues and events during this four and half week time period, including the westward expansion, the reform movements, art history, and most importantly the Civil War. Concerning the Civil War, because the causes of its outbreak were complex and because of its important role in American history, Ms. Brady believed that she needed several days to cover its various important battles.

Teaching the time period of Andrew Jackson, Ms. Brady wanted to do a talk show project, where students would choose a person to be their host and would interview guests who were experts on subjects such as the Indian removal, the bank crisis, and other different aspects of Andrew Jackson's presidency. She wanted to video-tape the whole project and planned it carefully. Meanwhile, it turned out that she had only four days to cover the period. Generally, she liked to give students the content in some form before she expected them to do complete a project using the information. However, it was basically impossible to do the project due to the time limitations. There was a school holiday and then a test was scheduled for the following week. The talk show project needed a minimum several days to complete, so Ms. Brady eventually eliminated it from her lesson plans.

As a matter of fact, Ms. Brady's technology based projects, including the movie project, always required a longer time to be done than she expected. She said, "When I really try and get into the depths of the knowledge and the intricacies of the event or the topic, I've gotten behind. So it was for me *the only* problem with technology" (Italics added) (Interview, 3/22/05, p.7). In every single unit she wanted to have a technology aspect. However, the more she integrated technology into her history teaching, the less time she had to cover the content for the TAKS test. She said with some sense of grief,

"because of the way the State has constructed, what we must teach and what students are going to be assessed on, I'm going to be in big trouble, if students don't do well on the test, and if I don't prepare them for it" (Interview, 3/22/05, p.8). For her, this was unfortunate because she thought that her students would not only enjoy but would also benefit from the projects, such as the talk show, and would learn important technology skills, as well as history and social studies from them. In brief, finding enough time for the projects was one of the major hurdles Ms. Brady faced in an era of the high stakes testing.

"LOOK AT YOUR RUBRIC! HAVE YOU DONE EVERYTHING?"

In Ms. Brady's classroom, students' projects were generally assessed through the use of a rubric, with percentages assigned to the different evaluation criteria. Ms. Brady had her students devise their rubrics on their own, under her careful expert guidance. She assessed their work according to the criteria they made. She had very specific reasons for that. She said, "When they make the rubrics themselves with some guidance or boundaries, they understand what is expected of them in a very up close way" (Interview, 5/22/05, p.4). This meant that her students understood clearly what they had to do and what criteria their grade would come from. The students also tended to stay focused and stay more connected to the project. Ms. Brady was aware that if she used a teacher-made rubric, the students had a tendency not to read it. She mentioned the educational value of students creating their own rubrics in more detail:

> When students make their own rubrics, they pay more attention to what they're supposed to be doing. I felt like it worked out pretty well because anytime if there was a problem, [I told them] "Look at your rubric. Have you done everything?" Then there's not this argument about; [they say] "Well, I didn't know that I had

to do that." [Then I say] "Well, you made the rubric, its right there." So that kind of takes a little bit of the responsibility off me and puts it on them.

(Interview, 5/22/05, p.4)

When grading students' work, in general, Ms. Brady assigned 10 percent out of 100 for how well they followed her directions. 50 percent was earned to how well they used the medium creatively and effectively. Considering the creative and effective use of technology, she considered the following criteria:

> When they made, for example, a PowerPoint presentation, was it clear? Was it easy to follow? Were the audiences able to learn anything from it? Or was it so busy and did they use so many different kinds of transitions that they couldn't even take in any of the information? (Interview, 3/22/05, p.3)

Then she gave 20 percent out of total score to the social studies content. She looked at how they covered the necessary content in terms of the core requirement. And the remaining 30 percent was usually left for "neatness" of their work. In addition, she sometimes gave them extra points, for example, when they made extra slides in their PowerPoint presentations. Nonetheless, each project usually had its own assessment criteria.

In assessing students' technology-based projects, Ms. Brady tended to weigh more heavily the technology aspects than those of the social studies content. For example, when the students made a spreadsheet, graph or a chart, she placed an emphasis on how well they used the Excel program to display information. Students had to comprehend the information well enough to make a visual display correctly and clearly, as she explained:

> If they make a graph [so] that I can't understand that there were more African-Americans in Virginia before the Civil War than there were in Maryland or there

were in Rhode Island, for example, if it's unclear, then they're not going to get a very high score. (Interview, 3/22/05, p.4)

The reason for Ms. Brady favoring the good use of technology was that, in those technology based projects, she mainly looked at how well students manipulated or creatively portrayed the social studies content that they already knew or mastered. In other words, her technology based social studies projects were not directly geared to teach a compartmentalized piece of information. Instead, Ms. Brady expected her students to create something more "innovative" using technology. In her classroom, it was through standardized tests like TAKS that she usually assessed the degree to which students understood the content of the social studies.

MAKING HISTORY TO BE THE STUDENTS' "OVERALL EXPERIENCE"

Ms. Brady conceptualized higher order thinking in terms of Bloom's Taxonomy of the Cognitive Domain. When asked about how she defined higher order thinking, her comments most readily corresponded to the Bloom's Taxonomy. She stated, "If you look at it in a practical sense, [a form of higher order thinking] is having the knowledge at a base level of the historical events whatever those might be and then do something with it" (Interview, 3/22/05, p.4). In other words, she said, "One of the highest levels of thinking is to be able to take information from one context and then be able to express it in another context" (Interview, 5/24/05, p.3). It was somewhat similar to the notion of 'application' in Bloom's Taxonomy, which entails the ability to use knowledge or principles in new or real-life situations. This level of higher order thinking, according to Ms. Brady, could be revealed through students' classroom activities such as those who "stand up in front of the class and give a speech, argue a historical debate in front of the class, or show on a

graph how this particular event looked with data from this event and what impact it had" (Interview, 3/22/05, p.4).

For Ms. Brady, another form of higher order thinking was "making something new out of pieces of information" (Interview, 3/22/05, p.4). This conception of higher order thinking was quite similar to the notion of 'synthesis' in Bloom's Taxonomy, which entails the act of creating something that did not exist before by integrating information that had been learned at lower levels of the hierarchy. She gave an example of the level of higher order thinking which she thought was the highest:

> When you get to gifted and talented (GT) kids, you'll see them saying and having a question…something comes up in class. And then actually pursuing that question, finding out more information and then doing something of their own creation with that information. (Interview, 3/22/05, p.4)

Ms. Brady said that she strives for all of her students to be, at least, at the 'analytical' level of the Bloom's Taxonomy. At some part during the year, she made an effort to have them evaluate and weigh a historical fact, seeing two different sides of an issue. She realized, at the time, "it was really difficult for this age [of student] to see that in the American Revolution, for example, there was also a British perspective, which was just a valid, what that was, and how they see Americans and not just how Americans see the British" (Interview, 3/22/05, p.4). In spite of that difficulty, she was always mindful of going for the level of analysis and synthesis, which were different forms of higher order thinking.

Sometimes, Ms. Brady felt pressured to prepare her history classes' students to do well on the standardized tests by urging them to use rote memorization. However, she believed that the goal of history study was not to memorize fragmented historical facts but to make it to be the persons' "overall experience." She stated it this way:

> How many adults work around knowing all these different dates of things and who said what, when? But if you have an overall impression of excitement and learning and developing ideas, and actually making them your own, incorporating them into your understanding of the world, that's going to carry…you can go look up what day it was on the Internet in 40 seconds. (Interview, 3/22/05, p.5)

To be brief, in developing their mental capacity to manipulate thoughts and ideas, she thought that it was much more valuable for students to be able to think "on their own feet" and to have the confidence to trust their own ideas rather than to merely acquire facts or details about situations, persons or events. For Ms. Brady, that was truly what higher order thinking was about.

MOVIE PROJECT, THE ARCHETYPE OF TEACHING FOR HIGHER ORDER THINKING

In Ms. Brady's social studies classroom, there were various ways to promote higher order thinking. Among those, the most prevalent was thought-provoking 'questioning'. Ms. Brady routinely asked her students several higher order or open ended questions to have them see the connections between different historical events or matters and to know how interrelated they were. She became aware that the more she taught with questioning, the more her students understood, for example, the connections between the 1600's and 1780's. She explained how her questioning worked: "If I can get [my students] to see how these connections take place, it's just like creating those connections in their brain and synapses and creating more of a scaffolding… in order to put that new content in" (Interview, 3/22/05, p.5).

When it came to the scaffolding, Ms. Brady said that she really tried to maintain students' base understanding of early American history so when they gained new knowledge they could actually do something with it and have a place to put it in their

"middle framework." Her reasoning was that her students could hold on to new information better if they had the base knowledge about history, which she regarded as the middle framework. In this sense, for Ms. Brady the aim of the history course was to give students a thorough grounding in historical understanding.

Ms. Brady's second teaching strategy to promote higher order thinking was a whole class 'debate' about important historical events. The major topics of the debates included the Boston Massacre Trial, Constitution Debate, The Declaration of Independence, and the Federalist vs. Anti-Federalist Debate. In order to help students prepare for their class debates, she created her own website on the school server and linked it to various useful websites, thus providing rich information about each topic. The websites served as a knowledge base for the students' debates. Debating the historical events was, Ms. Brady said, a strong higher order thinking oriented teaching method:

> Because I give them the base level of knowledge, then they have to actually prepare for an unknown outcome. They do not know what's going to happen when those thirty people get together to do this debate during the class period. It happens and it's different every time for me, too. Anyway, they have to actually understand the [controversial] situation on a variety of different levels because not only from a historical context but also with the debate. I mean, how did that look? What happened? So, being in that situation forces them to make the knowledge their own, to make that event their own, and to speak on their feet. (Interview, 3/22/05, p.5)

During the semester of this study, her students employed publishing software, such as Adobe PageMaker and MS Publisher, to design presentations and make their points. She asked her students to consider how they would lay out their information to

make them more striking and convincing, almost like an advertisement. This activity was intended to support the students' points of view in the debate.

Another way of promoting higher order thinking in Ms. Brady's classroom was 'group projects'. In some cases, she gave students group scenarios and asked them to come up with their own best solution to the problem at hand. For example, to learn about the Constitutional Commission, students were given a copy of the Virginia Plan and the New Jersey Plan and were not told about the Great Compromise at this point. Students were then asked what they would do about those issues of conflict and how they would work them out. Ms. Brady, sometimes, used the 'History Alive' program for this purpose. History Alive included many examples of scenarios of conflict. She thought that it was a good teaching resource for social studies projects.

However, a perfect example of this kind of group project as an appropriate teaching strategy would probably be Ms. Brady's movie project, because it contained the most important qualities belonging to the 'small group' project. In her movie project, she said, there were several different levels of tasks encouraging students' higher order thinking:

> In terms of creating the dialogue, the set, any kind of costumes, and thinking about camera angles. Then, once kids get to the editing, What's your message? What are you trying to communicate? How many different sides or points of view? We look at point of view in that project. (Interview, 3/22/05, p.5)

One of the dominant aspects of the movie project was learning history with primary sources. In the spring semester, students used a variety of primary sources in their Civil War movie project, whereas last year they were not able to do that, since their project focused on a more current event, the Presidential Election of 2004. Ms. Brady gave students the opportunity to actually look at several historical documents and make

their own interpretation from them, rather than use someone else's interpretation of history. She believed that it was one of the important ways to promote higher order thinking in history.

In fact, as to the role of technology in higher order thinking, Ms. Brady was very careful with it, because technology was, in many cases, readily available for fairly simple tasks. For example, students could use technology to create their assignments on a simple base level easily. She said that she had required her students to do their assignment this way before. Nevertheless, she realized that modern computer technology could make it possible for students to complete considerably higher level tasks. She thought that, even by using simple data-manipulation programs like PowerPoint, she could lead students to a certain levels of higher level thinking. She believed that it always depended on the type of questions she asked them. Ms. Brady said, "Generally, there would be five questions that were just for basic understanding, and five to ten that went up the chain to a higher level" (Interview, 3/22/05, p.6). Some of her students, she noticed, could tackle the higher level questions but others could not. She said, "I like to leave it open if they can, if they want to, if they're interested in it" (Interview, 3/22/05, p.6).

Ms. Brady considered her movie project as the archetype of a higher order thinking oriented use of technology because students had to answer a number of challenging questions throughout the project, such as "What are you saying about a topic? What is your task on it? Where is your bias? What's your point of view? What message are you trying to communicate?" (Interview, 3/22/05, p.6). Those kinds of questions were not just to read their ideas out loud in the movie. By its mere nature, the movie project was designed to provide students with a space to complete their own personal projects in an open way. There was a rough guide provided by Ms. Brady, but

students were required to come up with the majority of the content on their own, with a specific goal in mind.

Ms. Brady thought that her movie project was definitely the most successful project that she had ever done before. Through their movie projects, she said, students learned a number of technology applications they had not known before, as well as social studies content knowledge. Some of them did not even know that they could put footage from a digital camcorder onto a computer and do something with it. Last year, two groups of students came up with the type of high quality movies that Ms. Brady sought. In her opinion, they could have been submitted to C-SPAN, which had a movie contest on the Presidential election. The movie contest was "a driving force" behind their movie projects at that time.

"COOPERATION COMES INTO PLAY BIG TIME"

Ms. Brady's school had generally been very supportive of her efforts in integrating what was considered by her principal and colleagues to be innovative computer technology into her classroom teaching. She thought that, in her school district, there were very few boundaries for technology adoption, other than the TAKS test and time. "They push technology and anything I [ask for], within their means, they will get it for me. They really, really, really want that," (Interview, 3/22/05, p.9) she said in a confident voice. For her movie project, for example, this year her school provided new equipment like a DVD burner and two FireWire ports for the digital camcorder.

Access to the computer lab in her school was sometimes limited, but the problem was being addressed. Ms. Brady said, "If I am flexible, the school will make it work" (Interview, 3/22/05, p.9). Usually, she could use the lab twice a month, for two consecutive days, when she wanted. If all other teachers had used their total allotted time,

the lab would have been available for her only four or five days during the year. But, in Ms. Brady's experience, this had never happened. She had already used the lab for six days during March of that year. She expected to be able to stay in the lab up to three weeks during this year's movie project. Last year, her students spent about that amount of time in the lab for their movie project. For this type of project, it was very important to access the computer lab because it had the 'high-end' hardware and software that students needed to complete their projects.

Ms. Brady was an extremely independent learner. In many cases, she solved problems that she faced when using technology in her classroom on her own. "If I don't know how to do something, I'll just go figure it out versus somebody teaching me. A lot of times, I don't have patience for that," (Interview, 3/22/05, p.10) she said. For example, the TimeLiner was somewhat of new software to her in that year, so she asked the product's provider what kinds of resources were available. "I got a manual book from her and just went through it," (Interview, 3/22/05, p.10) she stated.

However, there were several people who offered valuable technical support to her. Her husband was a friendly consultant on computer technology. "He doesn't push me very much, but he pushes me. Because he's so over my head sometimes I have to kind of work it out on my own. But, I think he encourages," (Interview, 3/22/05, pp.9-10) she said. In addition, technology teachers in her school sometimes gave her some help when she was having problems using technology. There were also other new teachers who were dedicated to helping her and figuring the problems out.

Besides her husband and the technology teachers, Ms. Brady's students were absolutely critical to the success of her technology based projects. She said:

> The kids that I have, three kids out of 90 will be experts, just because they're into it, too. And we'll work together, okay how do we do this, how do we do this?

(Interview, 3/22/05, p.10) In this school, with these kids, and my relationship with them, we don't have a lot of problems in terms of them not respecting things; they are so excited about it that they want to help. And they'll go and figure it out, "hey did you look at that last night, have you figured out how we do that?" And they're not like, oh the teacher must know everything. I'm not going to be…I'll never be that kind of teacher, because I can't know everything. But, I think that whole cooperation comes into play big time. (Interview, 3/22/05, pp.10-11)

THE FOUNDATION OF THE MOVIE PROJECT DESIGN

Ms. Brady developed the original concept of using movie technology in her classroom teaching from her husband. She learned how to make movies on her Macintosh computer at home after he introduced the technology to her. Since then, she had taught herself how to make dazzling movies using iMovie, which is a video editing program for Macintosh computers. Ms. Brady was exposed to new movie making skills, additionally, while attending a conference on instructional technology. There, teachers presented their movie-making projects. She also learned from the Apple website, which included a number of projects on movie making for educators. On the website, many teachers shared their experiences using movie technology in their classroom teaching.

This year, Ms. Brady's movie project had two instructional goals in general. The primary goal was to help students gain a richer understanding of several aspects of the American Civil War. She mentioned, "Its main objective was not only to [promote] the content of the Civil War, but also understand and internalize it well enough to be able to use it and create something different with it that they were interested in" (Interview, 5/25/05, p.3). This goal reflected, to a large extent, her aforementioned notion of higher order thinking. She expected, through the movie project, that each student had the

opportunity to intimately understand one or two aspects of the war, in their own ways, by personalizing the primary materials of the important historical event. The secondary goal was to expose students to a new type of technology. The main purpose, in this sense, was to have students "understand that they could actually not only just film their ideas, but also edit it and create something that ultimately could be of some quality" (Interview, 5/25/05, p.3).

In developing the Civil War movie project, there were two curriculum guides with which Ms. Brady complied. One of them was Texas Essential Knowledge and Skills (TEKS) for Social Studies. According to the TEKS for Social Studies (effective September 1, 1998), "in grade 8 students study the history of the Unities States from the early colonial period through Reconstruction. The content builds upon that from grade 5 but provides more depth and breadth"(p. B-17). Students were encouraged to use 'critical thinking skills', including the identification of bias in written, oral, and visual material.

In Texas, teachers are strongly encouraged to use a variety of rich primary and secondary source materials to support the teaching of the essential knowledge and skills. They are also encouraged to teach integrated social studies content with various disciplines and critical thinking skills, to gain a greater depth of understanding of the complex content material. The ultimate goal of middle grades social studies, according to the TEKS for Social Studies, was for students "to understand the importance of patriotism, function in a free enterprise society, and appreciate the basic democratic values of state and nation" (p. B-17).

The TEKS for Social Studies specified the purposes for which the Civil War should be taught in middle schools. Two broad instructional goals were stated. One of the goals was students' understanding of how political, economical and social factors led to the growth of sectionalism and the Civil War. The other goal was students' understanding

of individuals, issues, and events of the Civil War. Related to the first goal, the student is expected to:

(A) Analyze the impact of tariff policies on sections of the Unities States before the Civil War

(B) Compare the effect of political, economic, and social factors on slaves and free blacks

(C) Analyze the impact of slavery on different sections of the Unities States and

(D) Compare the provisions and effects of congressional conflicts and compromises prior of John C. Calhoun, Henry Clay, and Daniel Webster. (Texas Essential Knowledge and Skills for Social Studies, 09/01/1998, p.B-20)

Concerning the second instructional goal of the Civil War, the students were expected to:

(A) Explain the roles played by significant individuals during the Civil War, including Jefferson Davis, Ulysses S. Grant, Robert E. Lee, and Abraham Lincoln

(B) Explain the issues surrounding significant events of the Civil War, including the firing on Fort Sumter, the battle of Gettysburg and Vicksburg, the announcement of the Emancipation Proclamation, the assassination of Lincoln, and Lee's surrender at Appomattox Court House and

(C) Analyze Abraham Lincoln's ideas about liberty, equality, union, and government as contained in his first and second inaugural addresses and the Gettysburg Address. (Texas Essential Knowledge and Skills for Social Studies, 09/01/1998, p.B-20, B-21)

In addition to the TEKS for Social Studies, Ms. Brady's movie project also reflected The Texas Essential Knowledge and Skills (TEKS) for Technology Applications (Computer Literacy). According to the guidelines, technology applications can be implemented in a specific class or integrated into other subject areas like social studies. The technology applications curriculum contained four areas of teaching and learning: foundations, information acquisition, work in solving problems and communication. It stated:

> Through the study of technology applications *foundations*, including technology-related terms, concepts, and data input strategies, students learn to make informed decision about technologies and their applications. The efficient *acquisition of information* includes the identification of task requirements; the plan for using search strategies; and the use of technology to access, analyze, and evaluate the acquired information. By using technology as a tool that supports the work of individuals and groups in *solving problems*, students will select the technology appropriate for the task, synthesize knowledge, create a solution, and evaluate the result. Students *communicate information* in different formats and to diverse audiences. A variety of technologies will be used. Students will analyze and evaluate the results. (Italics added) (Texas Essential Knowledge and Skills for Technology Applications, 09/01/1998, p. B-1)

In summary, Ms. Brady came up with the basic idea of the movie project in consultation with her husband. She elaborated on it by learning from a conference on educational technology and visit to Internet websites. The movie project under study was specially intended to offer students a chance not only to study the different aspects of the American Civil War in depth but also to learn various modern technologies. Designing

the project, Ms. Brady followed two state mandated curriculum guides, the TEKS for Social Studies and the TEKS for Technology Applications.

Part Two: The Civil War Movie Project

Monday, April 25, 2005

Classroom 506

On April 25, 2005 I visited Ms. Brady's school to carry out my first classroom observation of the movie project. It was about 10 a.m. on a Monday morning. Ms. Brady's American history class started at this time everyday and ended 50 minutes later throughout the spring semester. The Pheasant Rock Middle School was conveniently located in a quiet, suburban area. The one story self-contained school building looked newly built. The interior bricks shone brightly to my eyes. Passing by a large central cafeteria and impressive school library, I reached Ms. Brady's social studies classroom, room 506.

In the classroom of approximately 350 square feet, Ms. Brady's personal desk with a bookshelf behind it was placed near a classroom window. The morning sun was shining brightly through the window. On one side of the wall, a whiteboard and a screen for an overhead projector were installed, and a 19 inch TV set was hung up in the corner. There were also several somewhat old personal computers along the wall and three cabinets in the corners. Her eighth-grade students, who were divided equally into two sides of the room, were sitting opposite each other. It appeared that Ms. Brady's classroom was a little crowded with all of them. Yet, like the morning sun, they all had bright and cheerful faces.

Ms. Brady's class was composed of 30 eighth-grade students. Half of them were girls and half were boys. There were, in terms of academic performance, two students who had special needs. But most of them, about sixty percent, were gifted and/or talented (GT) students who had been accepted into a separate program based on test scores,

portfolios, and teacher and parent recommendations. They were gifted or talented in at least one area, sometimes more than one, such as math, music, arts and social studies. Ms. Brady seems happy with her students, saying "The kids are amazing, very motivated, and [there is] a lot of support from home to stay motivated, so that makes this school a wonderful environment to teach in" (Interview, 5/24/05, p.1). Her students' high motivation seemed related to the somewhat unique situation of the school being located in a very high income area.

SETTING THE STAGE FOR THE MOVIE PROJECT

Getting Started

Ms. Brady started her movie project by forming her students into six groups, organizing them with colored cards. In each group, there were five students. They were totally randomly grouped "to avoid problems between them,…and all that" (Observation, 4/25/05, p.1). The students worked in these small cooperative groups throughout the movie project. In reflecting on the project, Ms. Brady mentioned the positive aspect of the students' group work. "For the most part, they worked well together even though they were not homogeneous and they didn't get to pick their groups. They were homogeneous in the sense that they were very well *balanced*," (Italics added) (Interview, 5/24/05, p.5) she said.

To assign students to groups, Ms. Brady held a small bucket in her hand, with pieces of six colored cards inside it. She walked around the classroom and asked the students to select a card. Each of her students grabbed the cards from the bucket, except one student who was absent. For the group assignment of the absent student, Ms. Brady asked one of her students to pick up the card for the absentee.

While the students returned their colored cards to the bucket, Ms. Brady distributed two sheets of paper to the students, which described the types of products, topics, and items that were to be included in their project. Before she explained the project handout, she told her students about rules that would be in place to assure appropriate behavior. She reserved the right to change students from groups. She also reserved the right to withdraw students from the project all together and give them a test, or remove them from the lab. She added an advert to them:

> So, if you're goofing around, not paying attention, not getting out of the computer when I ask you to do, mistreating the equipment in any way, be prepared [for consequences]. There's a very, very low tolerance for goofing around in this project. (Observation, 4/25/05, p.1)

Ms. Brady knew, from her previous experience with the movie project, that it was difficult to control students' activities as each group was involved in their own work, at the different places in the school building and with technology equipment. In this study, I noticed a couple of students whose attention was diverted during the project in spite of such admonitions.

Possible Projects

Ms. Brady followed a group meeting procedure to get the students started. She asked students, after she finished going over the handout, to discuss in groups and choose the type of project and topic they wanted to do. According to the handout she provided, possible projects students might select included: game show, talk show, documentary, re-enactment, video montage, and info-mercial. Those were 'the methods' that students would use to present their topic content in the movie project.

With the game show choice, students were asked to create a game and produce one ten-minute show, based on one of the possible topics. With talk shows, students were asked to pick one person to be the host, having him/her interview guests who were experts on a topic. Interviews should cover all of the basic information on the topic and include explanations of at least two primary sources. For the documentary choice, students were asked to create a video-report, using pictures, art, music, and artifacts (made or real) with voice-over to explain their topic. If a group of students chose a re-enactment project, they were required to re-enact a Civil War battle or play an important event. For the video montage, students were asked to select a group of pictures or paintings and organize them into a story. They were required to make a voice-over to tell their story. Finally, if a group wanted to create an info-mercial, it should be a long commercial to inform and persuade their audience about the topic they selected.

The type of projects students could choose, however, was not limited to the possible products noted above. Ms. Brady was open to any of her students' ideas. If students wanted to select a different type of project, they were allowed to do so, with her approval and as long as it was legitimate and feasible. This year, however, there was no group who devised a project other than those specified on the information sheet. All of the groups chose a type of project among those suggested by Ms. Brady.

Possible Topics

After choosing a type of project, students were supposed to match it to a topic, to decide what the movie was going to be about. The possible topics, according to the handout, were the Battle of Antietam, the Battle of Gettysburg, the Underground Railroad, life at a Civil War prison, technological innovations during the Civil War period, Civil War leaders, lives of women during the War, and Civil War medicine.

Giving a brief guideline for each topic mentioned, Ms. Brady offered students an idea of what she was looking for, in terms of the information students would be responsible for, what they would describe, and what they would report via their movies. Similar to the type of projects, the list of topics was not limited to what was described on the handout.

If a group selected 'the Battle of Antietam' or 'the Battle of Gettysburg', students were expected to address a detailed background of the events leading up to this battle, to set the stage, number of men involved from both sides, battle plans and strategies for each side, leaders of each side, possible mistakes made by leaders, soldiers on either side and visual aids to help re-create the battle scene. For 'the Underground Railroad', they were required to address the detailed background of the growth of slavery, lives of the slaves and slave revolts. The final product also had to cover all the main routes to freedom and methods used to transport and hide runaways. If students selected 'the life at a Civil War prison' as their topic, they were asked to address a detailed view of daily life at three or more prisons. There should be both Union and Confederate prisons. They were required to tell how long prisoners had to stay in those prisons, their diets, their activities, their medical care and their punishments.

The topic, 'technological innovations during the Civil War period' had to include detailed descriptions of new technologies, such as repeating rifles, ironclads, the telegraph, railroads, improvements in artillery or ammunition, how they affected the way the war was fought, and their impact on military strategy or specific land or sea battles. If the topic 'biographies of political and military leaders' was selected, it had to include character analysis of at least four of these figures: their military training, their duties, what battles they fought at and led, their strengths and weakness, and the end result of their participation. The topic 'lives of women during the War' had to address details of at least three specific women's lives during the war, how they participated in the war, what

they did to help their side, what support they had, which sides they were on, how their help affected their families, and what effects it had on them. Finally, for 'the Civil War medicine' topic, students were required to include a detailed look at improvements made on medical treatment, the most common ways of treating the most common ailments, percentages of lives lost and saved due to medical intervention, conditions in Civil War hospitals, training provided to doctors and nurses, and options for soldiers who were severely injured.

Meanwhile, when it comes to matching the topics with the methods (type of projects), some topics were not allowed to be done using specific methods. Giving two examples, Ms. Brady called students' attention in classroom:

> You don't want to make fun of the fact that Civil War medicine, if you don't realize this, is extremely bad. So you don't want to talk about people losing their lives in a game setting. It's not appropriate. … Info-mercial, you're not going to be advertising the Battle of Antietam. You'd be advertising an invention or some kind of, maybe like Civil War hero paraphernalia or something like that, you could talk about something like that, so you could talk about the person. (Observation, 4/25/05, p.2)

In summary, in terms of the method and topic, students were provided a variety of choices to undertake their own movie project which reflected their preferences. The forms of the possible products were intended to trigger students' personal interests in history study. The possible topics were all focused on particular issues or events that were to be studied in great depth during the unit of instruction.

Steps in Doing the Project

After introducing the possible Civil War projects and discussing possible topics, Ms. Brady elaborated the elements that all products (the result of their projects) must contain, which was described on the last half of the handout. The order by which students were to be doing their projects, step-by-step procedures for completing each element, and what was required in each of those elements was designated. The first step was for students to design their own rubric, a grading system favored by Ms. Brady. The second step required students to research their topic via websites. On the school server, Ms. Brady had already placed a word document named "Web sites for Civil War movie project". The document included website links that students were allowed to use to gather information on their topics. Once their topics were selected, students were asked to collect any pictures and music they needed. In this stage, they were to make a new folder on at least two group members' home folders. In this new folder, all pictures and music were to be saved. Ms. Brady had already placed an instruction file on the school server so that students were able to access it whenever they needed help with their media collection.

The project's third step was to write a script. All projects, no matter what type, were required to have a script. The script was described as an outline for the project. Ms. Brady told students that they should email the script to all members of their group before class ended each day, so that everyone would have a copy of it. The script should include all spoken words to be included in the movie, a list of characters and who was to play each one, all props needed, and a description of the location of the movie. If doing a video montage, they needed to have all pictures labeled and the order specified. Ms. Brady asked the students to incorporate at least five primary sources that related to their

chosen topic. Those could have been, among other things, documents, pictures, journal entries, and letters.

After completing their scripts and having them approved by Ms. Brady, the students were asked to make a storyboard. In this step, each scene of their proposed movie was to be mapped in sequence. In addition, they would specify where each scene would be filmed, who was in each scene, what they were wearing, what they were saying, and the order in which they planned to shoot each scene. Once their storyboards were completed and approved by Ms. Brady, student groups were ready to begin shooting their film. Two days were scheduled to complete all filming. She instructed:

> You'll have two days. Now, if you're doing this where you're going to have everybody to your house, I'm not going to say you can't. But it should not be a requirement. It should be everyone is completely on board with going to whose ever house. It should not be something where everybody except for Suzy can go, then Suzy gets left out. But you are welcome to do it at home, if everyone agrees to the time and place. (Observation, 4/25/05, pp.4-5)

After filming, students would complete the next step, to upload their footage to a computer and save it on the external hard drive. Again, the students would be allowed to access a help file during this step. Once their footage was in digital format, the final step was to edit it. Ms. Brady asked the students to use the Movie Maker software because it included basic editing features necessary they might use. As in their filming, students would be allowed to take the tape that they made at school and edit it on their home computer. When they were completely finished editing their raw footage, they would share their movie to the class. The running time of each movie was to be a maximum of eight minutes. Ms. Brady explained the reason:

> I'm looking at five, it's what I want. Because number one, we don't have the attention span to go on very long. Number two, we don't have the memory, or the hard drive space to be able to deal with huge deal. Five minutes is your deal, OK. I won't take off if it's up to eight but, after that, it's off. I'm not watching it, I'm not grading it. (Observation, 4/25/05, p.3)

In summary, the procedure prescribed for the Civil War movie project consisted of roughly six major steps: designing a rubric, researching a topic including media collection, writing a script, making a storyboard, filming, and editing the movie. According to Ms. Brady's schedule, scripts had to be approved by Friday, April 29. All filming had to be completed by Friday, May 6. Final projects were due Wednesday, May 18.

DESIGNING A RUBRIC

What is a Rubric?

An important element of Ms. Brady's classroom instruction was assessment. Before students chose their project and began research for their topics, they discussed with Ms. Brady, through a long whole-class conversation with them, what a rubric was, what the purpose of a rubric was, and how they were supposed to design their own:

Teacher: What's a rubric?

Student A: Kind of a direction sheet, of what we're going to do?

Teacher: No…

Student B: It's how you're graded, a criteria.

Teacher: (Confirming the student's answer) It's how you're graded, criteria, and how many points for each [category], O.K.? So when you're doing your rubric, let's say which kind of product we will view?

Student D: Talk show

Teacher: O.K. I'll do the talk show one. So this is the talk show (writing 'talk show' on the whiteboard), and what's the topic?

Student C: Underground Railroad

Teacher: Alright, Underground Railroad (writing 'UR' on the whiteboard). So, what are you supposed to do in a talk show? Someone read that for me.

(A student read the instructions on the handout about how to do the talk show)

Teacher: When you are doing it on the Underground Railroad, somebody read the Underground Railroad part, Christi?

(Christi read the instructions regarding what was to be addressed with the topic of Underground Railroad from the handout)

Teacher: O.K. so what kind of set do I have to have? (Observation, 4/25/05, p.2)

Next, Ms. Brady drew a table on the whiteboard in the classroom, which was a format of the rubric for the movie project. Using a talk show as a type of project and the Underground Railroad as a topic, she showed students what the format of a rubric looked like.

Table 2: Format of Rubric Designed by Teacher

Talk Show UR

Requirement	Possible Points	Points Earned
Host & Guest - Fact correct - Well planned		

- Professional speaking - Show enthusiasm		
Topic: Details of UR - Routes - Leaders - Hiding places - Hardships		
Requirements: Primary sources Pictures etc		
Editing: Smooth transition Care titles Music ~~~ ~~~		
Extra credit		

Note: UR stands for the Underground Railroad

After drawing the lines of the table, Ms. Brady explained how to create the assessment criteria in a rubric. She pointed to the left column of the rubric. The criteria were composed of four major areas as shown above. Ms. Brady explained each part in this way:

Teacher: This is what I usually do. This is where you list the requirement (Ms. Brady writes down the word 'requirement' on the table), the possible points to be assigned to it (writing down the words 'possible points' on the table), and then the points that you've earned (writing down the

words ‘points earned’ on the table). So what’s the first requirement I should put here (pointing to the first section of the requirement)?

Student E: A host?

Teacher: You want to include probably a host and guest. What do they need to be?

Student C: Like Harry?

Teacher: I’m talking about how we would grade them. How would we say they did a good job or they did a bad job?

Student F: They need to be factual.

Teacher: Factual, get the facts correct. What else? (Calling a student’s name)

Student A: Well organized.

Teacher: Well planned, how about that? Is that O.K.? So what does that mean? Does that mean that they didn’t read on camera, they didn’t [have too many pauses], and then no interaction with the camera and the people they’re interviewing? (Calling a student’s name)

Student B: They shouldn’t stumble when they’re speaking. Well I guess it goes in well planned, too.

Teacher: Let’s put it another way. Professional speaking, something else you want your host and guest to do to get a good grade? (Calling a student’s name)

Student G: Does it have to be animated?

Teacher: Yes, show some enthusiasm. So you get the idea. What about the Underground Railroad. What kind of things do they need to address there? Someone beside Nola speak up?

Student C: Facts.

Teacher: Details of, for example, routes, leaders, hiding places, hardships, very good! Then you could have a deal for the editing of it. Do you look down on the script [part of the handout]? I'm going to be going over it. And your script has to have primary sources on it, [it's a] requirement. This could be in terms of the requirement about your topic. This is more about the topic. This is more about the requirements, if you meet all the requirements, like primary sources, pictures, that kind of thing. And then you need to have one about editing. A lot of times when you're editing, what can be some pitfalls or some problem of editing that you've seen that you've noticed?

Student E: When they cut something out that is bad and put something else in….

Teacher: Yes, like when you're going along, you're watching something and it just goes black. And then picks up again. What else?

Student B: Sometimes they will stop the camera and move something around, and then they will push play again and there will be four chairs instead of three.

Teacher: No smooth transition. (Calling a student's name)

Student E: Sometimes when there are titles in there, you'll have titles running in the wrong place.

Teacher: (Writing down the words 'care title' on the table) Titles that are going nuts. What else?

(Student A mentioned a transitional problem here)

Teacher: Again, a transition issue. So, you could put on here, smooth transition. It's just like, do you know when you're looking at Power

Points, and you have things that take an hour for the text to get to the square, and everyone is falling asleep before it gets there, OK, those kinds of things. Be careful with your titles. Music, listen to music. There are lots of things that can go on there. And then how you divide it up.

Student C: Is it possible to get a maximum five points of extra credit?

Teacher: You can give yourself extra credit for stuff too. But I think five points is generous. That should be enough. OK, so five points, if you come up with a way to get five extra points that works, and usually I'd put extra credit down here (writing 'extra credit' in the last section of the requirement). (Observation, 4/25/05, pp.3-4)

Students Working Together in Groups

After the class discussion, Ms. Brady monitored each group as they designed the rubric to be used for their project. She wanted to make sure that each was acceptable before proceeding to the next step. She said, "I'm not going to… [approve] a rubric that is garbage. It can't be like, show up every day and get 100. I'm not going to approve that" (Observation, 4/25/05, p.4). But Ms. Brady also provided the students with some flexibility. Except for extra credit points, all of the aspects in the first column should be fairly equally weighted. She asked the students to turn in the rubric by the beginning of class the following day.

After explaining how to design a rubric, students worked in their groups to make a rubric and to discuss the type of project and topic they wanted to do. While students were debating their rubric, Ms. Brady walked around the classroom and consistently checked each groups' progress. When there was about ten minutes left in the class, she

urged the students to have their rubric done as soon as possible. She said, "I need to have them approved, if all possible…. The faster you get this done, the faster you get to the lab, the faster you get the critique" (Observation, 4/25/05, p.5). At one point, she spoke to the whole class because she noticed that some items were missing on a group's rubric:

> OK. Guys, I need your attention one more time. You need to read not only whatever the requirements are for whatever you pick project-wise, whatever you pick topic-wise. Also, you need to read the requirements that say in addition to the requirements, one through nine, before you do your rubric. So maybe have everybody listen and one person read that. Go ahead. (Observation, 4/25/05, p.5)

After advising a group's work creating a rubric, she called the class' attention to another issue, while reaching almost the end point of class, to remind students to cover all of the requirements on their rubrics so they might not lose points on their grades. Lifting up the handout from a desk and pointing, she reminded students that they should include all the requirements in terms of the possible projects, possible topics, and such primary sources as pictures, documents, journals, and letters. "This is not just, do we look cute on camera, so you've got a lot of the stuff that you need for your rubric right there, use it. You're not going to get approved if it's not on there. OK, continue," (Observation, 4/25/05, p.6) she said.

I noticed during this class session that most of the students had actively engaged in their group's discussion. It also seemed that some of students were enjoying their group work. Sometimes, Ms. Brady reviewed students' working rubric approaching groups. At one point, she got to a group that had made a decision to make an infomercial as their project, and helped designing their rubric:

> Teacher: OK, infomercial. As I said, for each one you have a different deal.
>
> (Looking at their rubric) Is it factual? OK, description, good. Effective,

good. Impact on strategy battles, was it well written? Words I guess well prepared, costumes. I think costumes 10 is a little high there. Something like well written, well prepared, delivery, something about the delivery maybe?

Student A: We can put mannerism.

Teacher: Mannerism is more specific than you want to be. And on infomercials, there needs maybe something on the acting part of it, persuades well.

Student B: So, persuasion and delivery?

Teacher: Delivery, persuasive. And then, you can talk about costume. That's extra credit, five points there. I'm not requiring you. It's a good idea. (Observation, 4/25/05, p.6)

After leaving this group, as Ms. Brady checked another group's rubric when the bell rang and the class ended.

Tuesday, April 26, 2005

RESEARCHING A TOPIC

Like yesterday, I set up a digital camcorder in the corner behind the classroom and observed Ms. Brady's class silently. There was a lot of noise because the students chatted with each other. They did not unpack their schoolbags because they were going to move to a computer lab across the hallway shortly. "Rubric!" calming down the noisy students, Ms. Brady checked whether they had finished designing their rubrics. A couple of students responded to her, saying "I have it." Most of the students, however, were still chatting with their classmates.

On the previous class day, each group of students had selected a type of project and a topic, and they designed a rubric through group discussion. Among the six groups,

Graham's wanted to re-enact the lives of five Civil War heroes. Another group, Leslie's wanted to produce a talk show in which several Civil War prisoners talked to each other about their lives in the prisons. The remaining four groups selected info-mercials, with a variety of inventions during the Civil War period. The primary goal of this day's class was "gathering the information necessary to do well on the requirements in terms of findings primary sources, finding pictures, and finding documents" (Observation, 4/26/05, p.1). All of the required material was to be incorporated in the script, which would be due at the end of the week. Students had two days to complete this research. Ms. Brady allowed the groups to do some independent research for homework. After the research done, they were going to write everything on a script on Thursday, turning it in at the end of class on Friday. Before they started working in the computer lab, she briefly, for about five minutes, told them what they were going to do in the classroom.

The main concern Ms. Brady raised at that time was how and where to save the pictures that students had found through their research. Referencing to the timeline assignment they had done earlier in that semester, she instructed them to recall the procedure and use it again here:

Teacher: Remember we were going to do the timeline assignment?

Students: Yes.

Teacher: And you found pictures. And you saved them in a new folder on your home folder?

Students: Yes.

Teacher: And what type of file did you save them as?

Students: Jpeg.

Teacher: Jpegs or gifs.

Students: Gifs take up more room.

Teacher: The other way around

Student A: Jpegs are smaller, more compact.

Teacher: The other way around. Jpegs are bigger than gifs. You can change the size of a Jpeg. But generally speaking they are bigger…That's one thing because he is talking. Anyway, you need to save them as jpegs or gifs. If you save them as these, what was it?

Student A: Tiffs

Teacher: Asf, and there all kinds of different ones. They are not going to work in your movie when you import them. So that's what you're going to be doing today. (Observation, 4/26/05, p.1)

On the student shared folder, located at the school server, there was a Civil War project website page, in which Ms. Brady had categorized several websites. Students were not limited to those websites, but they were considered a good place to start their research. It was a word document with several links on them. She asked students to save their materials in two people's home folder, in case one of them was not in class.

Moving into the computer lab, room 320, every student sat in front of a personal computer (PC). I installed my digital camcorder using a tripod in the corner of the lab and carefully scanned the lab activities. In the same size of Ms. Brady's social studies classroom, there were approximately 30 shiny black PCs and 19" monitors installed along the four sides of the lab walls. All of the PCs were connected to the Internet through the school district's network and had the latest Microsoft Windows XP operating system installed. The lab also had two high quality laser printers that were shared through local area network (LAN). There was also a projector installed on the ceiling that enabled them to see a computer screen on a larger scale, on a white backdrop. They used it to watch their movies at the end of this project. According to Ms. Brady, this computer lab,

in fact, was one of the best in terms of the technology when compared to the other schools in the state.

The students that belonged to the same group sat close to each other, so they could talk about their work together. Instructing when the writing a script was to be done, Ms. Brady asked the students do the research, saying “get busy”. She urged students to have their rubric checked by her. As the class started, some students showed Ms. Brady their rubrics, while other students stayed on the computers and worked on their information research. Standing beside a PC, she carefully reviewed several groups’ rubrics and provided feedback.

One group, Michael’s, worked on an info-mercial about technological innovations during the Civil War period. To write their script for the info-mercial, they developed their ideas which technology innovation they included in it through group discussion, and by researching related materials on their computers. Except for one boy, I noticed that all of this group’s students were actively involved in their group discussion. Since I stood in front of the group, I was able to listen to their conservation clearly. This grouped now struggled with how to earn an extra credit:

Student A: I have a better extra credit. Just incorporate jokes into it. Civil war based jokes.

Student B: Why don’t we do that and on top of that, just so that there is actually a chance of getting some of it? It might turn out to be kind of hard. Tell me some civil war jokes.

Student A: All right. The south used these rifles and look how well they did. And if you use our rifle….

Student B: See, that’s not a joke.

Student A: (Seeming frustrated) I don’t know.

Student B: Jokes are really good but it's so hard.

Student C: How about the thing where they show the whole thing and then you can get more stuff and then the phone number. You know that thing when you have that?

Student B: (Knowing what the students C meant) But wait there is more, if you call in the next ten minutes, you can get the other stuff.

(Observation, 4/26/05, p.2)

The student C then asked Ms. Brady, who was working with anther group, to check whether the idea they just came up with was appropriate to gain the extra credit. She gave advice to the group to include how the rifle helped the Union to do succeed, how directly it applied to the Civil War, and to get more screen showing how the product (rifle) actually affected the War. "How's that? Alright, that's five points," She told the group. The group continued to research information relevant to their topic:

Student B: OK, so what are we going to do? What are we going to look for?

Student A: That's what Google is for.

Student B: I know, I'm not saying how we're going to research this.

Student C: (This girl next to the student B gave her suggestion) let's look for Civil War inventions.

Student B: Invention, here we go! (This boy agreed with her, and searched the topic on computer for a few seconds) Military telegraph.

Student A: (It seemed that this boy also agreed with her, and read what he found on his computer) Submarines, snorkels, mine fields, mines, warfare... military telegraph, anti-aircraft fire.

Student D: You all are on the same page.

Student A: (keeping reading what he found on computer screen) military railroads, army ambulance corps. This [link] doesn't work right here.

Student C: OK, I'm going to Civil War dot com.

Student D: Here's a section just for inventions.

Students: All right!

Student B: Everybody go to that. There are four, five of us, we should dig somewhere else.

Student A: I'm going to Civil War artillery.

Student B: I'm going to the first one.

Student A: I'm going to the third one.

Student A: Does anyone want to do submarines?

Student B: We're going to sell a submarine to civilians? (He thought that it was not a good invention for their infomercial)

Student C: No one is going to want to buy that. (This girl suggesting riffles as their topic) Let's do riffles. We can compare it with… and then we can …. So we're going to do these and we are going to compare them with these and they will be like better so everyone buys it.

Student D: This [Web] page has different models of guns.

Student C: How much is it going to cost?

Student D: We could sell like a new version of the, whatever rifle they used, and then compare it to an older one, and how much better it is.

Student C: And that's going to make people buy it and we can have more things.

Student B: I know nothing about guns at all. I really don't know much about guns at all.

Students C: It revolutionized the war fare, then we can get more, it revolutionized.

Student A: Ok, I'll get a word document on this. I'm making a word document. (Now he was starting to write their script) (Observation, 4/26/05, pp.3-4)

This group, which consisted of three boys and two girls, eventually chose 'the Harper's Ferry rifle' as the topic about which to create an info-mercial. After Ms. Brady's brief instruction about how to save the materials into the school server, which the students found through the research, they kept discussing the rifles they found on the websites:

Student C: I like this one.

Student A: We'll get the information from the second and then. (Looking at the student C beside him) What? This is the one? What page is that? Is that the…

Student C: That's the last one, no it isn't. It's the second one. You can on right not, you can go webpage of the Civil War.

Student D: (Reading carefully the material on a website, this girl explained what she found to the student C beside her) Mussel you put the bullet in through and where it comes out it takes longer. And reach loading is you open the gun up and it comes out.

Student B: When did they start to use rifles?

Student A: Civil War.

Student B: Civil War, with the twisting thing? No, a gun… on the end side of the barrel there is a twisting thing so it spins the bullet when it

goes through and it makes it go straighter. I'm not sure when it was invented.

Student C: (Pointing to a website on her computer screen) Oh, it says right here. It says right here. Right there. In 1848. Is that after the Civil War?

Student D: No. That's just the bullet.

Student B: But that's part of the gun.

Student C: (Again, indicating the website) No, it's spinning out of the barrel. It says right there. (Observation, 4/26/05, p.4)

For the last 10 minutes of the class, this group talked about the difference between a rifle and a musket.

Student C: Is there a difference?

Student E: Between the what?

Student C: I don't know.

Student D: (Pointing to the website on her computer screen) this one says the difference is, it's a riffle and it's a musket. So I think they are different.

Student C: Musket and rifles. Musket 101. We're not going to be able to find anything because everything is forbidden.

Student B: I guess guns, they really do that.

Student C: Ok, riffle, musket. I don't know.

Student A: (Looking at the student B) Can you explain the difference between a rifle and a musket?

Student B: I think in that case when it's saying rifle, I think a rifle has a …And then a musket.

Student C: No, I mean actually what it is. (Looking at a website) OK here it is. Fires from the shoulder, Spiral. No spirals.

(Student A and B looked at the student C's computer screen together)

Student B: (Then explained what he knew to the rest of the students in his group) I know the difference. A musket is that kind that when you start loading, you have to put everything and press it down. And they started to have rifling when the spiral, when the bullets go out it…, it shoots straight. But nowadays rifle is just a name. (Observation, 4/26/05, pp.5-6)

Like this group, the rest of groups worked diligently, through group discussion, to search topics and related materials to be included in their scripts. Whenever students had questions concerning their topics and faced technical problems, they asked Ms. Brady. It seems that students did not hesitate to share their concerns with her. She carefully listened to students' questions and looked directly at students' faces. Students sometimes called her "Coach Brady" because she was the 8th grade volleyball coach. There was a boy in the class who had some technical expertise in computer technology. Throughout the movie project, Ms. Brady received assistance from him when she asked for it.

While students collected research material, Ms. Brady monitored them by walking and observing their computer use. Noticing that some of students were visiting inappropriate Internet websites, she told them: "What did I say about where to go to start looking for things? In the share folder, Brady, and there is a word document called Civil War Websites. That's where you start, not Yahoo or Google. There are 50 sites on that word document" (Observation, 4/26/05, p.3). She did not allow students to use Internet search tools to search information. She also gave students who visited websites other than

those related to the Civil War a warning. Throughout the movie project, she had to react to students' disruptive behaviors several times. Looking back on previous experience, she stated:

> When I first started the project, I was much more concerned about kids doing things that I couldn't control. Whether it would be getting on an inappropriate website or not paying attention or doing their email when they're supposed to be listening or whatever, [But, as I use computer technology on a regular basis] I feel less anxiety about turning the kids loose with computers, not loose but having them in front of a computer when we're trying to do something. (Interview, 05/24/05, p.8)

In fact, one of her biggest challenges was managing students' misbehaviors during the movie project. She always had to be really careful to monitor their activities because they had a tendency to occasionally be off-task.

"Rubric! Rubric!" Ms. Brady said loudly. Reaching the end of the class, Ms. Brady collected each group's rubrics, walking around the lab. "Please, shut down folks. It's time for everybody to shut down. Shut down. OK, any questions, anything? Problems? Please, don't leave the assignment paper in here. We won't be in [this computer lab] anymore," (Observation, 4/26/05, p. 6) she told the students when the class period neared its end. Students picked up their schoolbags off the floor and left the lab.

Wednesday, April 27

The Computer Lab, Room 530

Upon the beginning of today's class, Ms. Brady said:

> O.K. folks! Everybody take their hands off [the keyboard], please. Move away from the computer and look at me. Ben, that's not an option when I say that. I

> need it to happen immediately. Either you listen and respond or you're out. Now the main reason for that is that we're getting to a point where you're going to have very expensive equipment in your control. We need to be aware of the importance of that. (Observation, 4/27/05, p.1)

From this day on, her class was held in the computer lab, room 530 located right across from her social studies classroom. This lab had the same number, 30 and quality of PCs and laser printers as the computer lab, room 320. The physical arrangement of the equipment however was somewhat different from those of room 320. Along the south wall, about 10 PCs were installed. In the west wall, which had a window, there were 4 PCs. Along the north wall, 4 PCs were also placed beside 2 large cabinets storing school supplies. There was a PC beside a copier that was placed on the east wall. In the center of the lab, there were 12 PCs placed in two rows of tables. There was also a table with 4 chairs between the two rows of tables and the PC in the east wall. One of the PCs in the center served as a teacher station. Throughout the movie project, Ms. Brady used the PC, which was the only one into which a FireWire card and a DVD burner were installed. I set up my camcorder beside the copier everyday until the end of the movie project.

On this day, five out of the six groups had already completed their rubrics. At the beginning of class Ms. Brady checked, for about 5 minutes, to make sure that all group had enough digital video tapes, "thinking over this project and remembering all the headaches from the last year," she said (Observation, 4/27/05, p.2). She also determined how many students would be able to bring their digital camcorders to school for use in the project, with their parents' permission. Since only two camcorders were available, one from the school and the other a personally owned one from her, she was looking for more camcorders. At that time, three students raised their hands, saying they would be bringing their camcorders from home.

WRITING A SCRIPT

What is a script?

Before students started writing their movie scripts, Ms. Brady explained what a script looks like and how it can be developed. On Friday of that week, by the end of class, all groups of students were supposed to have their scripts completed and approved. The script was a similar to an outline, but the divisions in their scripts were different than those of an outline. The main divisions were scenes. Once scenes were broken down, students could put characters, props and different materials in them.

Teacher: (Approaching a whiteboard east wall in the lab to explain what a script is) Remember how I told you your script is like an outline? What are the divisions in a script that are different than an outline? (Calling a student's name)

Student A: Characters.

Teacher: The divisions, what are the big divisions? (Calling a student's name)

Student B: Scenes.

Teacher: (Confirming his answer) Scenes, OK? (Writing the word on the whiteboard) Scene one. Then you'll put your characters and your time and your props and all that kind of stuff. (Calling a student's name)

Student C: Aren't we supposed to say exactly what is on the script?

Teacher: That didn't make sense, what?

Student C: We say exactly what's on the script, right?

Teacher: Oh, When you're filming?

Student C: Yes.

Teacher: I'm not going to hold your script when we're watching your movie and say, they didn't say that word, minus five. If you get the general gist of it and you don't say something silly, then you are alright. But if it is not word for word, every single thing, I'm not counting off for that, OK? Yes. (Calling a student's name)

Student D: So, on the scripting, do we actually have to write up lines for everything?

Teacher: Yes, everything.

Student D: We don't just describe the scene?

Teacher: No. You describe it because that's your, do you know when you read a play? You read plays all the time. You've got to have everything. So what's a way you can divide and conquer this to make it easier for your group? (Calling a student's name)

Student E: We could each do a scene.

Teacher: You could each do a scene. You could have somebody working on your research and somebody at least giving an outline of the scenes together. Saying, scene one, Dan, I need you looking up here, (writing words on the whiteboard) scene one is the introduction to the talk show, for example. And then scene two, you're doing a talk show, could be your first guest. Or it can be the monologue, if you're doing that. And then who is your first guest and what are they saying. You may not have all the words right now, but maybe you're going to have homework tonight, maybe you'll have homework tomorrow night. Maybe you need to assign. Ok, Johnny, you're doing scene two, you're the person in it, you're being US…, and Tom or whoever is

interviewing you, write the stuff down that you think is important to get the information down. I would think that most everyone needs to be doing research tonight at home. Alright, any question? Alright, get busy. (Observation, 4/27/05, p.2)

The way students could divide and "conquer" this scripting was that each of them could do a scene. They could have somebody working on his/her research and somebody else working on an outline of the scenes together. Students might not have all the words for the scenes at that time, she thought, so she advised them to be doing research over the next two days as homework.

Writing the Script

Like yesterday, students who belonged to the same group sat side by side so that they could discuss the content of their scripts. Each group of students now started to write their scripts on the computers, by using relevant primary sources to their topics. At one side of the lab, a group of five students (Peter's) was working together in front of a computer. While two girls and a boy were standing, two other boys were sitting. One of the students who were sitting typed their ideas on the computer as others in the group contributed ideas:

Student A: So first,

Student B: First we have to introduce the characters. A narrator talks about it.

Student A: Should it be a narrator or should it be like in a show, them talking about themselves?... So then, the story line, they stay out of the house, and... So it can be Robert E. Lee and Duck Davis.

Student B: Who was better?

Student A: Exactly, they are having this….

Student B: Who wants to talk first? He will say something like, sometimes the best leader here…. I was the best leader.

Student A: I am. Not in the past…. (She laughed aloud)

Student B: Jefferson Davis is like, well, I am... Harriet Tubman runs through the house.

Student C: Why would she just run through the house? (Students laughed aloud together)

Student B: Because she's going away, Harriet Tubman is always running away.

Student A: She wasn't going away, she escaped. She helped people to escape.

Student C: She was a good person. She has to be a good, normal person. You have to be nice to Harriet Tubman (She kept laughing aloud).

Student B: Harriet Tubman runs through the house and hides behind a chair.

Student A: Harry runs through the house and Robert E. Lee chases her? And then she runs behind Abraham Lincoln?

Student B: No, not hide. I want to say chases her.

Student C: No, runs after her.

Student B: I'll just say Robert E Lee….

Student E: (Joining this group's discussion) So, What we're doing? I'd be a good Robert E Lee. I want to be Robert E Lee. You know what we should do? We should write what we're going to be. We should write a little summary of each scene. Whoever is Harriet Tubman should paint their face…. Have we figured out the parts yet? I'll be Robert E Lee goes crazy. You know, it's war and he goes crazy. He starts pulling out his hair.

Student B: Then they all start what?

Student A: I don't think it would be cool, if it just a five minutes show, that they Do you know what I mean?... We're on a bet, and then someone goes, Ok guys, just calm down and go to your room. And the Abraham Lincoln goes calm down, calm down, go to your rooms. And then the confessions start. You know when they go to the confessions and they go, blah, blah, blah.

Student E: Abe Lincoln is kind of like a dad. Robert E Lee is going to have a bad temper.

Student A: I don't know if I want to say that. It's that whenever they want to …. I don't think you should write that he has a bad temper. Everyone, everyone, go to your rooms, calm down.

Student B: Do they know each other?

Student E: If somebody had an apartment, this would be perfect.

Student A: Then, we could go to scene two, and that's like, confessions. Whoever goes down there, they are like, Robert E Lee. You're making fun of Duck Davis. (She kept laughing aloud) (Observation, 4/27/05, pp.3-5)

Ms. Brady called for the students' attention when the class had about 13 minutes left. She reminded them of how they should save their picture files and the kind of format to be used. She was also going to let them know what kind of music format had to be in their movies. "I think mp3 will work," she said, "but I will check it out and let you know in a second." Since it seemed that she was not sure about it then, she sat down on the teacher station in the lab and figured out the music format. After about several minutes, she told them "why don't you save it like dot wav [that is a format of sound files]." At the

time, she asked students to assign the parts of the script they would be working on that night. Upon finishing her instruction, Peter's group continued to discuss their script:

Student E: Maybe we can have music and stuff.

Student A: We can't have music.

Student B: Yes, that's really good. He brags about himself.

Student E: Do you want me to get my information on the…. I'm going to print what I have. (Two students brought the materials that they found on Internet websites printing from the printer)

Student B: When he brags about his military days does he...? I can't believe he let that slave simply be free.

Student D: What happened to her anyway, how did she die?

Student E: He's got to say something like, I can't lose this war. There's got to be slavery. A country without slavery is mad. I should say something like that. (Students laughed aloud together) I need to say something like a country without slavery is mad.

Student A: A country without slavery is right!

Student E: Like a country without slavery is mad. A country without slavery is like someone committing suicide. (He just intended that saying this made their movie more fun) (Observation, 4/27/05, pp. 3-6)

This group's discussion continued to the end of class period. One time, the student A, instead of the student B, word processed her ideas briefly taking over a computer keyboard. It seems that they were really enjoying developing their script. This group represented how each group in the class worked hard to create their scripts today.

In fact, this group (Peter's) was working on a game show of the lives of five Civil War leaders. Imagining that the five Civil War heroes (Abraham Lincoln, Jefferson

Davis, Robert E. Lee, Ulysses S. Grant, and Harriet Tubman) were still alive today and lived in a house together, this project intended to bring their experience together. This game show focused on how the leaders worked out their problems when they stopped being polite and started getting into their real personality. This group's script was made up of four scenes. In the first scene, the characters were introduced, described their accomplishments, education, and their impact on the war. The second scene was a short conversation where they argued about their military and political superiority over the others. The third scene was three characters' confessions revealing their real personalities. The last scene was a long conversation settling the heroes' dispute over slavery.

Like Peter's group, the script of Alan's group had four scenes. In the first scene, the Schenkl shell, which was invented during the Civil War, was advertised as the best ammunition. The second scene showed the shell's technological advantages over other common shells. Interviewing three people who fought in the War, in their third scene, showed how the shell affected the way the war was fought. In the final scene, bonuses that were offered in the sale of the shell were mentioned.

In Michael's group, the script consisted of five major scenes. In the first scene, the Harper's Ferry rifle, an invention during the Civil War period, was advertised as being the best gun among others. In the second scene, a student acted as a historian who explained its specifications, how it affected the way the war was fought, and its impact on military strategy. The third scene consisted of two people's testimonials about the gun, using historical letters. In scene four, the minie balls and bullets were advertised as a bonus. The final scene was a repetition of the advertisement by the main character.

The script of Carol's group was a little different from the other groups in its format. Their script was broken down into five acts. In each act, they advertised several

inventions during the Civil War period. The first act was divided into two scenes. The first scene of the first act was a background story for the next scene, a girl sending a man to a battle field and crying. Then in the second scene, the Napoleon smoothbore, which was a new favored artillery piece for both the Union and the Confederacy was advertised. The second act had only a scene where they advertised a telegraph. The third act consisted of four scenes. In the first scene of the third act, its designer introduced the Colt Repeating Rifle. The rest of three scenes were testimonials of satisfied customers as to how their very own colt repeating rifle changed their lives. The fourth act was not divided into scenes. However, it could be divided into three parts. In the first part, two people introduced the Ironclad, a massive armored ship during the War, citing historical sources. The second part of the act included two people's testimonials about the ship. The last part was a commentary soliciting a riding ticket for the ship. The fifth act, which is the last one, was divided into three scenes. In the first two scenes, the railroads, invented during the War, were introduced by two people. The last scene was a commentary inviting others to ride on the train.

Ms. Brady constantly supervised students' activities by walking around the lab. A number of times, students asked her questions for assistance whenever they encountered trouble writing their scripts throughout the class. Students were allowed to move around the lab freely as long as it concerned their projects. When about 3 minutes of the class were left, Ms. Brady reminded students to assign the tasks that group members would be doing tonight at home. Ms. Brady told students, "Guys, it's time to log off. Remember what you need, everybody, attention. You need to have a copy of the script before you leave, please. So you can send an email to everyone at one time and attach your script so that everyone has a copy," (Observation, 4/27/05, p.6) because the class time was almost over and they needed to leave the lab.

Looking at her watch several times, Ms. Brady urged students to wrap up their work. However, students did not stop writing their scripts and talking to one another in their groups. Walking around the lab, she told each group that they should stop working now and do their work at home. It seemed that students did not take heed of Ms. Brady's words. Even after the school bell rang, most of the students were still sitting in front of their computers and working on their scripts.

Friday, April 29, 2005

General Overview of the Storyboard

This was the day all the scripts were due. As soon as they were ready, she was going to start to look at them. By around 10:30 am students were supposed to finish their scripts, because Ms. Brady needed enough time to look at them and see if they needed to make changes. She had already reviewed a couple of groups' scripts. In fact, from today on I gave her a small wireless microphone which she could carry and her words with students could be recorded. It made possible for me to hear her voice much clearly.

As the scripts were finished, Ms. Brady briefly went over "the storyboard concept" because this was the next step of the project. The storyboard required that students take their scripts, with the scenes divided, and draw pictures of them. Students usually interpreted this as one picture per page. Ms. Brady asked that the storyboard be nice with a clean layout. Students were able to use computer paper or stick figures, marking up where the camera was going to be and what the scene was going to have in it.

Drawing on the whiteboard, "So, there is a table over here," Ms. Brady provided an example, "there are four chairs here, Billy sits here, the guest sits here. And go ahead and put who the guest is, Alex playing the role of Abraham Lincoln and whatever" (Observation, 4/29/05, p.1). They were also asked to include in the storyboard all the

props they would need, all the characters in that scene, and the approximate time that each scene would take. Being aware of how hard it was for them to understand it, Ms. Brady told them, “go on the low side. If you need to time yourself, actually have somebody read through the words and time it. See how long it takes. You will be surprised. It is different than how you think a lot of times” (Observation, 4/29/05, p.1). The storyboard had as many pages as the scenes they were to develop.

The reason Ms. Brady asked students to write the script was so that they would be organized, expect what was going to happen, and be ready for it. She told them what “the point of a storyboard” was:

> When I give you the camera you don’t waste time. So what should we do now? So what are you thinking of wearing. Tick, tick, tick. The longer you goof around, the less time you have with the camera. As soon as you get the camera in your hands, you’re going to go, OK, here we go. And you know exactly what it is you need. And where you need to be and who needs to be there, and all that. (Observation, 4/29/05, p.1)

Finishing her instruction about the concept of a storyboard, students worked in their group to write up their scripts. Ms. Brady asked them whether any group was ready for her to look at their scripts. There were no groups, at this point, ready for their scripts to be reviewed. Ms. Brady sat down at a PC to help one group. She seemed somewhat frustrated because it took a longer time for students to complete their scripts than she had expected. Some of the groups had already begun to make their storyboard while most of the groups were still working on their script outlines.

Helping Students Write up Scripts

For a while, Ms. Brady helped a student to look for military primary sources. Nancy did not know where to go to find information about a specific gun invented in the Civil War period. When the student asked her about it, Ms. Brady said to the student:

> Ok, you need to go to, look at a general Civil War site, and look at battles and then put that in for personal accounts, something like that…. You can use anything having to do with the guns at that time because most of them are going to be the pack kind, at least early on they are, so they talk about how it takes so long to pack the [power] and everything in there. (Observation, 4/29/05, p.2)

Even after hearing the instructions, Nancy wanted to use an Internet search tool, saying "I guess I'll just Google it" (Observation, 4/29/05, p.2). Reminding her of the websites she had placed on the school server, Ms. Brady urged her to use them. Nancy seemed, however, to have forgotten them.

Turning to another group, Ms. Brady checked to see what they had completed for homework the previous night, as she had required. Linda told her, "I highlighted what we needed to do. I also got the price of the jacket and how it would be nowadays… There's a site that said what prices would be in the 1800s" (Observation, 4/29/05, p.2). Ms. Brady praised her. However, unlike Linda, Ms. Brady noticed that some of students had not advanced enough to get their work done. With a slightly dissatisfied look, she told those students, "The days in class need to be extremely productive. You guys are getting on the borderline here" (Observation, 4/20/05, p.2).

Ms. Brady also helped students who had technological issues in making their movie scripts. Nola asked her, "Do we have the technology to have a phone number running below?" "Yes, it can scroll across. I'm pretty sure. If not, you can scroll this way,

as credits, in the worst case scenario. And you can regulate the speed," (Observation, 04/29/05, p.3) she responded to Nola.

Checking Students' Scripts

About 20 minutes into the class session, "O.K. Linda, I need all of your group over here," Ms. Brady called. At that point, all five students who belonged to Linda's group surrounded her. As she had said at the beginning of class, Ms. Brady began to review each group's scripts.

Linda's group, which had selected the info-mercial as their project, had begun their script writing by describing a brief overview of each scene. The topic of this group was a new jacket technology. In scene one, they showed the superior quality of the jacket compared to other ordinary ones through a dialogue between two Union soldiers. In the second scene, a British man, named Scott Gorthey, explained the background of the two soldiers' stories and the history of the Battle of Jonesville. The final scene had two parts. The first part was the promotion of the product and used various primary sources, such as letters, diary entry, and newspaper article. The second part was an advertisement of the product.

Reading through their script, Ms Brady pointed out two major problems. One of them was the "anachronistic" situation in the first scene that they were having a TV show back then. Since the background of the scene was right after the Battle of Jonesville, it did not really make sense. The other problem was that even if they had designed this new jacket, the group did not follow the instructions on the project requirements handout. She also suggested that they add one more scene for a conclusion. In addition to those three aspects, Ms. Brady provided several minor corrections concerning their script's format.

Teacher: (Writing her comments on this group's script) It would not hurt to put what you're doing [in the beginning of your script]. And what are you doing?

Student A: An infomercial on a new jacket technology.

Teacher: So a title type thing over here. So, is this the beginning of scene one?

Student A: No, that's just our characters.

Teacher: Tell me. The props are the same for every scene?

Student B: Yes.

Teacher: OK. Is this a brief outline of each scene?

Student A: Yes.

Teacher: So these are locations for each scene?

Student A: Yes.

(Reading the script, Ms, Brady made a grim face)

Student A: We were getting ready to change that. Because everything else is letters instead of phone numbers.

Teacher: OK. I was just thinking, are we still going to do, I mean, is it still going to be anachronistic in the sense that you're having a TV show back then. That's really not, but it's OK. Even if you have designed this new thing, that doesn't follow [the instructions on the handout]. If you look at the technology for innovative things deal, it says that you must include a description of the new technology, which in fact we are getting to, how it affected the way the war was fought, and the impact on strategy in pursue of specific battles. At the battle of Powell River Valley**,** it is probably capitalized there.

Student C: That's my mistake.

Teacher: (Kept looking at and reading their script) Then you need to fix that. "And made a daring escape but most likely in vain." That's not a very good sentence. Let's just reword that altogether. "This is mainly," spelling, "because of insufficient special winter-clothing," that's going to be hyphenated then, "from the temperature dropping from the past zero mark to minus six degrees." Below the zero mark? "Past is, luckily for one of these guys he's wearing a fur…." Why don't we give a name for this fancy jacket?

Student A: We were trying to think about one.

Student C: Yes, that would help a lot in our scenes to have a name for the jacket.

Teacher: Why are we using this guy?

Student C: He was the leader of the Battle of Jonesville.

Teacher: It sounds like he's the commander of the Union army.

Student A: We can put commander during the war.

Teacher: Battle or something. Then I would also tie in to the larger.

Student A: On our or on his?

Teacher: (Pointing to the spot of the script) Right there. "A weather and…" We can write better than this. Folks. "The weather in battles can be horrible and these jackets can keep them warm and dry. Here are the letters from soldiers in need of help." We've talked about how it needs to have something here. Can you copy and paste it in there for me? "As you can see, the weather is one of the hardest battles of the Civil War." Who wrote this?

Student A: Betty and I.

Teacher: "The jacket design is warm, fuzzy, and the outside is made of…." Ok, my suggestion is then you flash back in scene two. This is scene three, right? And then scene four you flash back briefly to the soldiers. Then have them now, which one didn't have it before, and so now you're feeling good. Just so you have kind of a conclusion. (Observation, 4/29/05, pp. 4-5)

Next, Ms. Brady checked the script of Peter's group. By now, it was about 10:30, or 30 minutes into the class session. She urged students have their scripts checked as quickly as possible. All five students of this group surrounded Ms. Brady. She did not indicate any major problems with this group's script. She, however, did tell the group that they were missing some primary sources and that props were needed. It seemed that she was satisfied with their work.

Teacher: (Reading their script) What is this?

Student A: It's the introduction to the show.

Student B: It's like the rules.

Teacher: Is this the first scene, are you on camera?

Student C: It's kind of the introduction.

Teacher: OK, but it's scene one. If you're on camera, it's scene one.

Student B: We have to change that.

Teacher: And this is a…, what do you call it?

Student A: Have you ever seen a show when they are walking and there is… as they are walking in?

Teacher: Right.

Student B: And this is a narrator about themselves, and a voice-over is going to say things about themselves.

Teacher: As they are walking in and doing things. This should be in italics. I can't remember the word for it now. And this, underline if there are people talking, and this is a voice over, you said? Tell me that. "I was president." That's unclear. Comma is between two complete sentences, you all. (Reading the script for a while) So, is this after the war?

Student C: Yes.

Student E: Well, it's kind of like we're flashing back.

Teacher: So, after the war, this is what they do. This is kind of like, after the war, they are all… and they don't have anything else to do, so now they are living in this house?

Student B: You know how most of the people used to be famous? It's kind of like that.

Teacher: Give me a date in here, explain the date and explain why they are there in terms of being has been, don't say has been but, the war is over, I was at home, kicking back, watching too many TV shows or whatever, my wife wanted me out of the house whatever.

Student B: So, we include it in the introduction and include it.

Teacher: And explain that.

Student E: But most people still have their beliefs and stuff like that. Robert E Lee and Jefferson Davis are still like for slaves.

Teacher: (Laughing several times) I think this is going to be so good. OK, so I see, this is a primary source, where's the other four?

Student A: Do we need five?

Teacher: Remember how I told you guys a hundred times to read this? That's OK. Incorporate at least five documents. Now, three of them can be pictures. Three pictures are OK, but you're going to choose something else. You already have this as something else. So you need four more. Also, you're missing props needed for each one and where. Where are you physically going to shoot it and how is it supposed to look like. Are you shooting it at my room dressed up to look like a kitchen? To a din or whatever. You're not going to have couches and everything, it's not going to look like the Real World, but as best as possible. You can come up with sheets or something.

Student D: What if we do it at my house?

Teacher: Is everybody OK with that? Have you talked about when you can do it? It would be next week sometime. Alright, work on this and bring it back to me. It's a good start though. (Observation, 4/29/05, pp. 5-6)

As soon as reviewing the group's script, a boy approached Ms. Brady and asked her to make sure his storyboard was what she wanted. Looking at it briefly, she gave him couple of corrections and told him, "You're totally on the right track." Then, Ms. Brady called Alan's group:

Teacher: (Reading the group's script) How about, manually packing in the powder in your gun so slowly, or something, that your friends get killed? I don't know, redo that. That's a lot better though. A lot more, oh, OK, you know. That should be fine. Saying that should be fine. The displayer is walking toward the camera with a poster.

Student A: We've got that person right there, with a poster that she's holding it, or somebody else is holding it from behind, and she's like.

Teacher: You could do. What you could have is the camera on a tripod. She's standing here, you back up and then you zoom slowly in. You've got to be careful on that because if you zoom real fast. Have you ever watched a movie where your little brother or somebody took it and it's all over the place? You're like, Oh, my gosh forget it. I don't even care what it is because I can't even focus? So, you've got to be careful when you go zooming in but somebody who has got a nice delicate touch slowly zooms in as you've got the music and as the person, then you tell me when they start talking. Put the music on later. Merge them together. If you had iMovie it would be beautifully easy to do but you can kind of do it on this, it will be good enough. It's the only thing you can do. Then, this person is holding and talking and pointing at the picture?

(Students talking together)

Teacher: Yes, you can. You won't be able to do music and voice over. It's one or the other.

Student A: What if somebody stands besides the camera talking?

Teacher: That's fine. But, while you're showing, it would be nice if you're close enough where the holding person can actually hear you and point at things on there. Or maybe we can even get you an easel**.**

Student B: That would be nice.

Teacher: (Kept reading the script) That's much better. Bold. No big deal.

Student A: We're trying to find more information about the effects of the Gettysburg battle. Because we don't have anything specifically of that.

Teacher: So, look for, go at it from the difficulty of packing, of the old way of doing it. And if you don't have a shingle**,** how do you say it? Schenkl?

If you don't have anything on that, talk about how the other one is. It's difficulties.

Student A: The only thing is that we didn't want you to hear that twenty times because we have that in the scene.

Teacher: You have to have …. We can get it if you switch battles. You don't have to have it for Gettysburg**.**

Teacher: Major improvements, the only thing you're really lacking is the primary sources. You have pictures. Remind me of how many pictures you have already? You have three.

Student C: We have four?

Student A: We have three pictures and one letter.

Teacher: OK, that's nice. Why don't you use Vicksburg? Vicksburg was a big one. Maybe there is one on Vicksburg. So you've got one letter, so you only need one more. So you could use a map of Vicksburg maybe, if nothing else. Do we understand what we need? Very good, guys. You're really on track. (Observation, 4/29/05, pp. 7-8)

Checking the script of Alan's group, she gave them some technical advice, such as how to use the zooming function of a digital camera, how to incorporate music in movie files, and how to handle voice over technique. Since there were only PCs in the lab, they were not able to use the iMovie, which is an editing program for Mac. Like some other groups, this group was also struggling to find their primary sources. They only had a historical letter on their script and needed another primary source. Whenever letters were used as primary sources, Ms. Brady asked students to indicate its sender and receiver, and its date and location on their scripts, because they were doing a history project.

Upon finishing the group's script review, Ms. Brady called Michael's group for script review. At this moment, a boy approached Ms. Brady and asked her how they could "fake snow" in their movie. She laughed at his idea and gave him her opinion. Then, she started to read the script of Michael's group.

Teacher: "Jim Van Vlack" (This was a person's name who gave a testimonial about the Harper's Ferry Rifle). (Laughing) Is it real? (A student told her 'Yes") Oh, really? Are the props the same for all of them? You're not bringing any costumes?

Student A: We're going to bring cardboards. I'm going to cover it up.

Teacher: That's fine.

Student A: Can it be where I paint it like barrels blacks for looks but it is actually blue.

Teacher: Yes, absolutely.

Student B: Would it be O.K. if I wore an attention getting outfit for the first scene?

Teacher: Are you advertising the rifle?

Student B: Yes.

Teacher: Is this scene one?

Student B: Yes.

Teacher: Because it's kind of hard for me to tell that. It's OK. Is this scene one? Oh, wait a minute. Are these props for all of them? So, scene one should be here, right? Because that's for all.

Student A: Yes, see, scene one right there.

Teacher: Yes, thanks to me it is. (Laughing) I saw your squirrel that was good. I guess, this is kind of mean to animals, but. (Reading the script)

"Straighter farther and more accurately than all those other… good for nothing…, smoothbore with which you can't shoot…. The gun is light-years ahead of its time…" Good, Good, Good. Ok, a new sentence. What's a mussel loading riffle?

Student C: Do you know those push rods where you put the bullet and you weight it down? That's a musket.

Teacher: This is like; you open it, shove it in, and then put it together? Oh good, Nancy, it's obvious, good. It is very clear, it's very clear. I didn't say anything about you guys, just in general. I didn't want her to think I was saying something bad about it. You might want to change accurately. (Reading the script) "Unfortunately, it took several deadly battles..." That's helpful.

Student B: It's not going to be her reading it.

Teacher: Oh, then. Shouldn't I know that? And also, you want to break it up, it's kind of long. Good. I need a date, location, who it's to, for the letter. Good. You have what?

Student C: I have all this stuff.

Teacher: And "buy happiness!" Who wrote that? That was funny. That's good. You have all this in one scene? I need to know that. And I also need to know, is the entire thing over by the hill?

Student C: Yes.

Teacher: So you're not going to make a change your backdrop at all? Which is fine, it is just easier that way. Are you just wearing your normal clothes?

Student: Yes.

Teacher: Put your scene stuff in here. It looks real good. (Observation, 4/29/05, pp. 8-9)

A few minutes later, a girl in Carol's group came to Ms. Brady with her group's script. She spent the last 5 minutes of class, as she did with other group's scripts, checking whether they included enough number of primary sources in it, how well it was organized by scenes, whether the historical events and facts were accurate, and which props they needed, other than grammatical errors. She thought that although the content did not seem like an info-mercial as the group had intended, the script could be improved by indicating the exact data for each primary sources, such as date, writers, and receivers of letters. In fact, Ms. Brady had to stop reviewing this group's script in the middle of the review because she did not have enough time to complete her review before the class ended. She urged students to email their scripts to everyone in their group. Even if students could not make all the changes she suggested, she asked for a copy of each group's scripts before they left.

Monday, May 2, 2005

PLACING IDEAS ON A STORYBOARD

Ms. Brady began today's class verifying each group's progress in writing the scripts. During the previous week, Ms. Brady had already reviewed the entire group's scripts at least once, except for Leslie's group. Today, at the beginning of class, Ms. Brady asked for the final copy of each groups' script. However, most had not completed their scripts yet. Carol's and Michael's groups were working on a few more revisions. Linda's group was still adding locations and props. Peter's group needed some more primary sources.

Describing the components of a storyboard on the whiteboard, Ms. Brady reminded the students what had to be included on the storyboard because, as soon as their scripts were done, they needed to use their storyboard for their work during that day. The storyboard was supposed to have one scene per page. Each page of the storyboard had to include the length of each scene in minutes, a list of all props, a picture of the layout of the scene, its location, and characters. Once their storyboards were approved the groups would be ready to start filming.

Ms. Brady then checked that each group could have a camcorder for the filming. Since there were only two digital camcorders available in the school, some of the groups brought their own camcorders with their parents' permission. The first group to have their storyboard approved was the first to start filming. If they had their own camcorders, they could film at any time during the week. All the filming had to be completed by Friday of that week. "All right, let's get really busy," after checking the number of camcorders available, she asked students to work on their scripts or storyboards.

While the rest of the students were on the computers, working on their scripts or storyboards, Ms. Brady checked the script of Leslie's group, having them gather around her.

Teacher: (Reading the script) What's your topic?

Student A: On civil war prisoners.

Teacher: What are you doing?

Student A: A talk show.

Teacher: Is this scene one?

Student B: Yes.

Teacher: Interesting. See how that works? (Writing her comments on the script) You don't have the location. You don't have the props.

Student B: These are on the back in….

Teacher: (Pointing to a spot of the script) It's supposed to be on here. It also has underlines. This is not a good sentence. What's the worse thing you see in here, people? That's not happening at all. Where are your primary sources in here?

Student A: This is one of the primary sources. We haven't decided who is going to say it. But this is primary sources that he quotes, right there.

Teacher: Where is it from?

Student A: It's from the letter he wrote.

Teacher: OK, I need all of the details of the letter. To, from, date, where, all that.

Student A: If I can't find it, should I just write it?

Teacher: You can't use it. So that's one, where are the other four? (Kept reading the script) That's nice. Ok, that's two. I need a date and location. When I say location, it usually says where they are writing from. It will say, Dear Henry, or whatever, I'm in some kind of a location deal. Who it is to and from. OK, that's two. And then, do you have three pictures? Those can be your other ones. Make sure that on your pictures that you have, where you got them, who took them, where it is. Do you want me to write that down?

Student C: Who took them?

Teacher: Probably Matthew Brady, are they black and white photos? Then they are probably Mathew Brady. So you can have three of those and then you're good.

Student A: Do we have to have four or five?

Teacher: Five. You have two letters.

Student A: I thought we had to have four.

Teacher: It says it's on the directions. What's this?

Student A: This is just me with Lloyd's costume then they have pictures of it. Then I describe what we're in, but we're basically in jeans. But there is going to be one in white collared shirt and belt.

Teacher: OK, so draw it up. One per page, put on there who it is, all the scenes and the time. So you will have three of those.

Student D: What do you mean by time?

Teacher: How long that scene is. And then these need to be broken up. When you introduce new guest or something, maybe separate them. Put scene, please. Very nice. Very, very nice. Just make those changes and give me the final. You can keep as you're working, because I wrote down what you need to put on there. And try to get back to me today. (Observation, 5/2/06, pp.2-3)

Upon finishing the script review, Ms. Brady planned the filming schedule for this group. She arranged for this group to film in her classroom, which had a round table they could use. They could use chairs as a setup, decorating them, and move all other desks off to the side of the classroom. Students were told to make a list of all the materials they needed to bring. Getting their storyboard checked off from her that day, she encouraged the students to start their filming the next day. Students had two days to complete their filming.

As soon as Leslie's group returned to their PCs for their script revision, a boy came to Ms. Brady and asked how primary sources should be used in his script. She explained him briefly the way the original sources could be cited in the script. It seemed that she could not give full attention to the boy's question because other students were

waiting for her advice about their scripts and storyboards, standing beside her. Ms. Brady was very busy helping students improve their scripts and storyboards.

Some of the groups thought they were ready to start filming, but they needed to identify their costumes and the rest of their props. Some of the groups wanted to film outside of the school building, at a football field. Other groups planned to film inside, using the classrooms or teachers' lounge. All filming was supposed to take place during the regular class period. Students were not allowed to film at home.

Since students were going to start filming the next day, Ms. Brady asked the technology specialist, who was in charge of the lab, for a digital camcorder. She wanted to make sure that it was fully charged and "happy." She tested the school camcorder with a MiniDV tape to see if it worked normally.

Throughout this class session, the computer lab was full of noise while students worked in groups. As class was ending, several groups asked Ms. Brady to review their final scripts to see if they would be acceptable. A common problem the scripts had was that they sometimes did not include specific information of their primary sources, particularly dates or locations. It seemed that some of the students did not know why such data should be included in the scripts. By the end of the class day, all the groups turned in their completed scripts to Ms. Brady. Some of the groups also completed their storyboards.

Tuesday, May 3, 2005

FILMING MOVIES

"Folks, Have a seat. Have a seat. I'm not waiting around. Have a seat. Put your hands in your lap and turn around. I should not have to say that three times. You are no different. Sit down, please. Hands in your lap and listen" (Observation, 5/3/05, p.1).

Gaining students' attention, Ms. Brady began the day's class by organizing the filming schedule. It was not an easy job. Because there were a limited number of digital camcorders and there were not enough rooms for filming, even if a group was ready, some of them were not able to begin filming that day. Another reason for the difficulty was that there were several students who were absent.

In spite of those barriers, Ms. Brady had three groups, Leslie's, Alan's, and Carol's, ready to start their first filming, with two groups having digital camcorders borrowed from her and another group using their own camera. Although one group did not have all of their members present, Ms. Brady had them begin their filming by having another student fill in for the missing student. She told both of the groups using her digital camcorders that they had to have all their filming done by the end of the following day, so that the other groups could use the camcorders.

Students' filming was to take place in several locations around the school. They included Ms. Brady's classroom, the football field outside of the school building, and an empty room somewhere close by, yet to be determined. Since students were going to film at places other than the computer lab, before they left the lab Ms. Brady reminded them to handle those camcorders very carefully. "You are to use your very best judgment. You are not to do anything silly or outrageous or stupid. These cameras are extremely expensive…. Treat them like a million dollars" (Observation, 5/3/05, p.1).

Ms. Brady also demanded appropriate behavior when students were filming. She said:

> What do you think is going to happen, if there is any report of anything from another teacher, of any horse play in the halls, any goofing around. It's not even going to be a little bit of trouble. And you definitely will not have any more movie projects. Let's not mess around with this at all. (Observation, 5/3/05, p.1)

"Any questions? Get busy and work," she said as she wrapped up her instructional speech. Students moved to their assigned locations for filming, while other students stayed in the computer lab to finish their storyboards. Michael's, Peter's, and Linda's groups remained in the lab and worked hard to complete their storyboard through group discussion, even if some of students in their group sometimes did not join together. I continued to stay in the lab and watched those three groups' lab activities.

Ms. Brady next demonstrated to a girl how to shoot with her personal digital camcorder. The girl was going to do her camera work with Alan's group, which was heading to the football field for their filming. Ms. Brady carefully showed the student the way the camera could be used properly:

> So, you're going to pull this out carefully and look through that. I'll get you set up on your tape, too. You don't do any of this. All you do is turn it on and turn it off. So you turn it on camera, you click through here then you push this button, then watch it comes on. Look through there. See how it says record? And then stop. This right here goes in and out, zooming. Never ever take your hand out of that thing. (Observation, 5/3/05, p.2)

Ms. Brady emphasized that she did not have to ever stop the filming and rewind. "If you mess up, just stop it and start again," she told the student, "then we will check out all of your mistakes and that stuff later, that's where the editing part is about" (Observation, 5/3/05, p.2). As the day's class neared its end, when the girl had finished her recording, she brought the camcorder to Ms. Brady. She found out that, unfortunately, they would not be able to use the day's recording, which was scene one of Alan's group, due to an unexpected mechanical problem. Actually, the tape they had used had a problem. The group had to film the same scene over, with another tape, the next day.

Ms. Brady also taught the usage of a digital camcorder to another girl from Linda's group. Using the school's camcorder, this group was going to film first outside of the school building and then in the living room. Unfortunately, it did not have a battery, so they had to use a power plug on the wall outside the school building by using an extension cord. The camcorder also did not have FireWire connectivity and it could not be hooked up to the teacher station in the lab. The FireWire was only available for the PCs in the lab. Ms. Brady, however, did know how to overcome this problem. "Even if you tape it on there," she told the girl, "I can put it in my [camcorder] and upload it" (Observation, 5/2/05, p.2). Ms. Brady reminded her that if there was any footage they did not want, they could rearrange it, edit it later. The worst thing they could do, according to Ms. Brady, was to go back and forth looking at the recordings and, if it looked bad, start the filming process again.

In the mean while, Michael's group finished their storyboard and asked Ms. Brady to examine it for approval. Approving their script, she told them that they would be ready to start filming the next day. They were also told to make a list of all the props that their group needed to bring. At the time, Ms. Brady encouraged them to start making one of their props, a target, with red markers and paper. They completed making a large, round target as the class ended.

Peter's group showed their storyboard to Ms. Brady, and she asked them to clarify how long each scene would take. The whole movie was to be no more than six minutes. Borrowing her digital watch, "five, four, three, two, one," students shouted all together and started to count exactly how long it would take to tell the story represented on their storyboard. All five students in this group gathered together on one of the computers and used their script to rehearse. "That was a good practice for you anyway," (Observation, 5/3/05, p.5) Ms. Brady admired. Smiling all through the practice, it seemed that all of the

students enjoyed it. The time of their actual performance was about five minutes and ten seconds. Ms. Brady encouraged the group and said that their film was going to be longer when they taped the real one because they would improve a little bit more.

Ms. Brady went out of the lab to see if the groups outside were doing their filming adequately with the camcorders. She came back to the lab after about 5 minutes. By that time, the storyboard of Peter's group was completed and approved. Like the other groups, Ms. Brady asked them to make a list of props that they needed to bring next day. While talking about the tape problem with a girl in the Alan's group, the school bell rang and the class ended.

Wednesday, May 4, 2005

Since the beginning of this movie project, Ms. Brady had been very diligent helping her students' work to move forward. She had energetically helped her students whenever they had trouble doing their work, whether the trouble was related to the content of history, which was the topic of the project, or about technological issues. Up until that day, she had to face a number of unexpected situations, which were sometimes annoying. Meanwhile, this day was probably the busiest and to outside appearances, the most chaotic one of all the classes during the study. Moving back and forth between the computer lab and filming locations inside and outside the school building, Ms. Brady supervised students' activities, out of breath. Her students were working in several locations at the school area, from football field, to teachers' classrooms, to outside of the school building.

Ms. Brady brought brand new MiniDV tapes that day. She gave one of them to Alan's group. This group had started filming the previous day and eventually found out that their tape was "dead". She gave them the battery from her personal camcorder, since

the school's camcorder this group had been using did not have one. "It'll give you a little bit [time], if you need to go away from the [power outlet] and not be plugged in. Don't count on more than ten minutes out of this puppy because they don't last very long," (Observation, 5/4/05, p.1) she warned them. "Who else is taping today?" she asked students sitting in the lab. One of the students in Linda's group raised her hand, saying they were going to film in the teachers' lounge. However, it was the worst possible day for them to film there because the teachers were setting up the lounge for a lunch that would take place later. Ms. Brady looked for and found another teacher's classroom that was available for use by the students to film.

One of the logistical problems that students encountered during the project was that they did not have enough tripods for the digital camcorders. They had been struggling to find the tripods for their filming since the first day of their project. Ms. Brady told one of students in Peter's group, "go in my room and try not to disturb the taping in there, wait until they are done and get the tripod. If they are not using it, please bring it in here" (Observation, 5/4/05, p.2). This was just one instance where a tripod was not available on the spot. On that day, Carol's group had the same problem; consequently, they had to borrow it from another group.

Giving Carol's group another new tape and a charged battery, for several minutes Ms. Brady taught a student, who was the main filmmaker in the group, how to use a digital camcorder. She wrote down the girl's name on the sticker of the video tape and put the tape into the camcorder. Whenever she gave a tape to students, she marked their name on the tape, so that they did not mix them up. As she did with other students, she showed her just how to turn it on and off, and to zoom in and out. This basic operation skill seemed to be sufficient to make a movie. When the girl asked her how to go to the beginning of her recording if she did something wrong, she told her "You can edit it if

you want" (Observation, 5/4/05, p.3). Ms. Brady reminded her of the final stage of their project, which was editing. Her students sometimes were not aware of the editing part. "Be super careful. Go," she told her and the girl went to her group filming outside of the lab.

As the girl was leaving the lab with her camcorder, students in Michael's group approached Ms. Brady and asked for a new tape. It's about 10 minutes after class began. Except for the Michael's group and Ms. Brady, there were no other students in the lab at that time. She made sure that the camcorder's battery had been charged. Noticing a fake gun that a boy in the group was carrying, which he made himself, she admired his work. It was a nicely shaved wooden rifle for their infomercial. They were filming outside of the school building. She told them, "Don't goof around. Be serious, look like you're on a real movie set" (Observation, 5/4/05, p.4). This group also left the lab for filming in couple minutes. There was nobody in the computer lab at the time.

While each group was filming in their designated places, Ms. Brady came back to the computer lab when the class had about 10 minutes left. The students in Linda's group had completed their filming and took seats around Ms. Brady. In order to transfer the group's recordings done that day to the school's server, she connected their camcorder to the teacher station through a FireWire cable. Using the importing capability of Windows Movie Maker, she tried to import it and wanted to show them how to edit their video recording.

Her idea was to store the files temporarily on her home folder or on a teachers' shared folder at the school's server, and then transport it over to other storage as soon as they got them. However, for some reason, she was not able to access the server. Since she was able to do it previously, it was a "weird thing," she could not even see her home folder in My Network Places on the computer's desktop. Ms. Brady called all of the

groups filming outside into the lab because the class was almost over. As students in each group were coming back to the lab, the school bell rang.

Thursday, May 5, 2005

Ms. Brady drew special attention, at the beginning of today's class, to the way students treated the school building and the way they behaved when they were filming. Yesterday, after her class she noticed that there had been some unacceptable behavior in her classroom, out in the hall, and outside on the field. For the most part, she noticed that this class had been very good but she strictly prohibited behaviors such as drawing on the walls, or acting out in the classroom. She told them to make sure that they were above reproach and that they were taking care of their responsibilities.

Ms. Brady then arranged sites where students could film their movie. Leslie's group went to Ms. Brady's social studies classroom for the filming. Michael's group filmed in the school field. Alan's group filmed outside the school building. Both Carol's and Peter's groups filmed outside of the school building first and then came inside. For the groups which were filming inside of the school's building, it was not easy to find an available space. In one case, two groups shared Ms. Brady's classroom, each group using half of the period. As Ms. Brady arranged their filming locations and time slots, students moved out of the computer lab. Only Linda's group remained in the lab because they had already finished shooting their film.

Several students were going on a band or orchestra trip the next day. If they therefore need to be in a scene, they had to take care of it that day. All of the filming was supposed to be completed by the end of class on the next day. By about 10 minutes after 10 o'clock, Ms. Brady finished the assignment of filming locations.

EDITING MOVIES

Capturing Video to a Computer

Ms. Brady had the students of Linda's group together around her, and tried to show them how to upload the digital video that they recorded into the computer's internal hard drive, so they could edit it. She hooked up the camcorder, which the group had used for their filming, to the computer (the teacher station) she was sitting by, through a FireWire cable. Launching Windows Movie Maker software, she set the camcorder mode on to play the recorded video to capture the entire video from a MiniDV tape in the digital camcorder.

For about 20 minutes, Ms. Brady and the students watched this group's movie on the preview screen of Movie Maker during the capturing process. They enjoyed watching the movie and talked about where the huge captured file could be saved. In fact, on that day, for a long time Ms. Brady struggled to figure out a way to store the large video files into a proper place. By mistake, she missed a chance to transform the video into a media file and to save it onto the local disk. She mistakenly canceled the capturing process without creating a file and had to start it over. While Movie Maker recaptured the movie into media files, she went out of the lab to monitor other groups' filming.

When the class had about 10 minutes left, several students who filmed outside came back into the lab. Some of them watched the video of Linda's group being captured. Others chatted with each other. As the class was nearing its end, Ms. Brady went out of the lab and let the students who were filming know it was time to wrap up the day's class. By the end of class, the recapturing was not completed so they left the lab as Ms. Brady finished the process.

Meanwhile, her plan was that once the video was put on the hard drive, she was going to move it over to an external hard drive attached to the computer. Whenever they

logged off their computer, all of the data on the local disk was wiped out automatically. This was the reason why she had to save their video to another place, other than the local hard disk. She wanted to get the file down to a smaller size and then put it in either students' home folders or shared folders on the school's server, so they could manipulate it. However, this was impossible to do because there was not enough disk space allotted on the students' home or shared folders at that time. Ultimately, Ms. Brady planned to burn the movies to DVDs the following week, when their editing work was done.

Friday, May 6, 2005

Today was the last day of filming. Some of the groups, Alan, Linda, and Leslie's, had just finished their filming by the previous day. Carol's group had two more scenes that needed to be shot. Yesterday, this group was not able to film some of their scenes that needed a backdrop because they could not use a projector to do it. Today, they planned to complete their filming in Ms. Brady's classroom. Peter's group and Michael's group would film in the teachers' lounge and in the classroom during the whole period.

As those three groups left the lab to complete their filming, Ms. Brady started to transfer the video from Linda's group onto the internal hard disk of the teacher station in the lab. Since the previous day, she had been having technical problems trying to have the camcorder and external hard drive work with the teacher station. In many cases, they were not recognized by the computer. This made her very frustrated at times. Today, she tried to upload the video first, using the camcorder that Linda's group had used, but it did not show up on the computer. Since it worked yesterday, she thought there must be something wrong with the camcorder.

Fighting the problem for a while, she changed the camcorder with one that another group had used and was able to start capturing the video. Capturing the video

took the same amount of time as recording. It was impossible to fast forward while they were capturing. The recording time of the groups' tape was more than fifteen minutes long. Spending about fifteen minutes on it, unfortunately, once again due to the tape issue, Ms. Brady was not able to complete the task of creating a video file from the recording, and students ended up having to re-shoot it the next week.

Now Ms. Brady picked up the tape from Alan's group and put it into the camcorder. Students in that group surrounded her and watched how she uploaded their video onto the computer. It was past half of the class when she started to do it. Another annoying thing happened at that time. Quickly, she realized that the tape had problems because, in the beginning of the capturing process, the preview screen on the Windows Movie Maker was frozen. She realized that she had given the students a used tape yesterday and found out that the tape was defective. "Either we ran out of film or something happened that we don't know. It wouldn't let us film anymore," (Observation, 5/6/05, p.4) one of students in the group told her. Immediately, a student in that group found the right tape, the one they had actually used, in the box. Ms. Brady was able to make a movie file from the tape recording by the end of the class.

While uploading the video of Alan's group, they enjoyed watching it, and talked about what happened when they filmed it. Several students in other groups also watched the movie being captured. Having completed their filming, Michael's group came back to the computer lab when the class had about 10 minutes left and they also watched. Ms. Brady asked some of the students who were playing a game on their computers in the lab to do their homework assignment. She had written the assignment on the whiteboard in the lab. Those students had already completed their filming and were waiting for Ms. Brady to upload their video onto a computer. The project was progressing somewhat behind schedule.

Monday, May 9, 2005

Not Enough Storage

According to Ms. Brady's schedule, today was the first day for the video editing. By this day, all groups except Linda's had finished their filming and expected to start editing. However, as already seen in the previous classes, Ms. Brady faced a problem when starting the editing part of the project and needed to reevaluate where they were in the process of the movie project.

Technical problems with storage continued. There was not enough space on the server to store the extremely large files. Ms. Brady, therefore, asked her students if they could bring their own USB2 or FireWire external hard drives from home. She showed students what they looked like, demonstrating one from the lab. "It is similar to this," she said, "but this is a FireWire one and the difference is how it connects to your computer. They look so different" (Observation, 5/9/05, p.1). She also explained the difference between USB1 and USB2. She needed USB2 external hard drives instead of USB1. "Why would that be important?" she explained to students:

> If you think about how big these files are, they are starting out at 200 Megs just to play. Then, when you start doing things to the movie you start adding more and more stuff. If you were using USB to try to transfer this giant file it would be like riding a pony to the Kentucky Derby, it would take forever. USB2 is the big update, it's like getting a 300 horse power engine and it goes a lot faster. (Observation, 5/9/05, p.1)

At that time, she made some changes to her original plan for the movie project. On Wednesday and Thursday of that week, she was supposed to attend a training meeting and the students would not be able to work in the computer lab. She needed "a back-up"

plan, in case everything fell through. Her back-up plan was to watch the student movies without editing them. This would be the worst case scenario, having the students watch the raw movie footage from the camcorder plugged into a television. Unless everything went well, she would certainly have to take this into consideration.

At this time, Ms. Brady's husband came in the lab to try to figure out the storage issue in there. There was a technology specialist who took care of the lab but it seemed that she did not know much about the technological issues Ms. Brady was facing. Her husband was the only person available who could help her regarding those problems. That was why she requested his help. But it was not his responsibility go there, leaving his class to help her at that time. She mentioned, "I didn't feel like there was a whole lot of [technical] support. The problem is that nobody on my campus knows how to do this thing….The technology teachers try very hard to help, but it's not their area of expertise. They haven't done this themselves, so they don't know" (Interview, 5/24/05, p.6).

While her husband was verifying if the school server could be accessed to upload students' video files on one of the computers, Ms. Brady sent Linda's group to film outside, giving them a camcorder with a brand new tape. In a while, her husband found out that there was not enough space available on the computer for their large video files and explained her how to verify if they could use USB2 external hard drive on each computer in the lab. She asked students to open 'device manager' on each computer and verified that all of the PCs had a USB2 controller. All of the students, except for Alan's group, moved to her classroom to work on their homework. Until the storage issue was solved, she could only work with one group at a time, trying to convert the camcorder's digital video into computer media files.

As a matter of fact, during the movie project in this study, the storage issue was the most frustrating problem for Ms. Brady. It had dramatically hindered the progress of their project. She expressed her disappointment over the issue later:

> We were just really not equipped. Unfortunately, I didn't really realize that until we were started on this project because I was expecting the external hard drive to work fine….Also, had I known that the network server was not going to work I probably wouldn't have done it, but it's supposedly all set up there to work and it worked last year pretty well….If I could have two or three of the FireWire cards so I could upload to the computers more quickly, that would make it a lot better because the burden of uploading files on me was that I couldn't watch the rest of the class as much, so if I had another teacher with me, that'd be great. (Interview, 5/24/05, pp.6-7)

Polishing up the Movies

Ms. Brady brought a 1 GB USB pen drive that the school had and saved the video which Alan's group had recorded into it. It was past about 20 minutes after the class began. She told the group how to handle the video to edit with Windows Movie Maker:

> I will tell you that there are two files here. One is your raw footage. This is just when you suck it off the tape and it goes to the computer. [The other] is the editing part of it. That's kind of how it got it set up. When you go into Movie Maker, you're going to need to go into file import into collections, and that is what merges these two together. When they are not merged, this just looks like scaffolding with no bricks on it. Once you merge them, then you're putting the scaffolding with bricks on it. You're putting the house together. (Observation, 5/9/05, p.3)

She also showed Alan's group how to safely remove the pen drive from the computer, by saying "before you take it out, make sure you right click on this little guy right here" (Observation, 5/9/05, p.3). Alan's group moved to a computer in the lab and transferred the files onto it and started to edit them. Ms. Brady wanted everybody in the group to have a chance to work on the Movie Maker by themselves. Noticing that only one boy in the group was working on the video editing program, she told them, "I don't really want to regulate that, [but] drive for five minutes then let somebody else drive because we can only have one person driving"(Observation, 5/9/05, p.3).

Ms. Brady then worked with Leslie's group, connecting their camcorder to the teacher station, to capture the video that the group recorded into the computer files. "What we are going to do is we are uploading your footage to the computer. One language is tape and another language is the computer. It's taking [the video] from tape language and it's putting [the video] into digital computer language," (Observation, 5/9/05, p.4) she explained to the students in the group what she was doing. It took her as much time to upload the video as it took them to tape it, so the students waited for a while. "Don't touch anything and if it gets to the very end of your deal, then you can edit it," she told them.

For today's class, only two groups, Alan's and Leslie's worked in the lab. Alan's group had a chance to edit their movie for about the last 15 minutes whereas Leslie's group could not because the capturing was not completed by the end of class.

Tuesday, May 10, 2005

Today was the second day scheduled for movie editing. At the beginning of class Ms. Brady brought the school camcorder, after asking a girl in Linda's group to find their tape in a box. She gave the camcorder to a boy in the group and allowed the group to

leave the lab to film. Finishing their filming, this group returned to the lab around five minutes before the class ended, and started capturing their video.

Alan's group continued editing their movie from the previous day. Saying, "Guard it with your life," Ms. Brady gave them a USB pen drive that stored their movie files. She asked them give the USB pen drive back to her before they went anywhere. She was very worried about losing their files. Like yesterday, this group got together around one of the computers in the lab and worked together to edit their movie. They successfully captured the movie files into computer files for their editing in the previous day. Carefully referring to their script, they trimmed it down and tried to make the movie shorter, so that it would be from five to eight minutes long. They also added some music into their movie. In terms of project progress, this group was far ahead of everybody else in this class. They finished their editing later during class time. A boy in the group mainly handled the Movie Maker program to edit the movie files. He seemed familiar with the editing software.

Leslie's group also started their editing. They organized themselves around another computer in the lab. This group also carefully checked their script while polishing up their movie. Their movie was about twenty minutes long and needed to have a few minutes from each scene cut. A boy in the group worked on the Movie Maker all the time. They sometimes chatted about things not related to their project but overall they enjoyed editing the movie.

Ms. Brady asked the students who were not involved in either editing or filming to do their homework in her classroom. Hence, only two groups, both Alan's and Leslie's, were in the lab during the first half of the class period. As soon as she got each group's video uploaded onto a computer, they were able to start working on the editing. She also checked students' workbooks that were supposed to be completed.

After organizing students' activities, Ms. Brady sat down on the teacher station in the lab and tried to save the video files that she had captured the previous day into a USB pen drive, so that Michael's group could work on their editing. Yesterday, she captured their video and stored it into an external hard drive attached the computer. Once again, however, something happened that got her very frustrated. She found out that all of the captured movie files she had uploaded on the external hard drive had disappeared. She had to recapture their video, which took about fifteen minutes. Michael's group was delayed in their editing by about thirty minutes after the class began. One of the boys in the group brought his removable storage and they were able to move their large files into one of the computers.

Friday, May 13, 2005

Self Review and Finishing up Editing

Today was the last day for completion of the movie project. Students had a little bit of time for editing movies on Wednesday of the following week, though. They missed their last two classes because Ms. Brady had to go to a Pre-AP training over the last two days. All of the groups had time to review their work, based on the rubrics they made at the beginning of the project. Since some of the groups did not have the chance to edit their movies, Ms. Brady modified the way students' products were assessed. Accordingly, their rubrics were revised by the students. The groups prepared to present their movies as they were, without editing. She told them, "if you were to watch it as is now, it may not be in order, it may not have all the fancy stuff, but it does have the basic requirements" (Observation, 5/13/05, p.1). Ms. Brady explained that points would only be "knocked off" if they did not have some of their primary sources, or if they did not cover the information that was in their assignment, according to the project requirement

handout she had given them at the beginning of the project. Today, she gave them an opportunity to add missing requirements if they had not included them already. She asked them to print out the primary sources found and put them up the classroom wall. If they used music, they were asked to have it saved in their home folders on the school's server.

While about 6 minutes passed, Ms. Brady took Alan's and Leslie's groups to the computer lab. Sitting together by the computers, they continued to work on editing their movies in groups. Even having already cut some of their movie's parts out, the movie of Leslies' group was 20 minutes and 40 seconds long, so they had to break it down some more. As Ms. Brady instructed, they made sure that all of the requirements on their rubrics were covered in their project, while they were editing them. Some other students also came over the lab to print out their pictures, which were their primary sources. Ms. Brady helped Alan's group when they did not know how to put transitions in their movie. She also assisted students who had problems printing out their pictures from a laser printer.

Ms. Brady reflected that if there was any change that she would make to improve the movie project, it would be to add a component of evaluation of the project at the end. She said that it would be nice to evaluate the method and technique that students used to communicate their information and then have the class evaluate it. The purpose of the evaluation would be "to keep them even more motivated to show a different side rather than just restating information and to push them to make it even more unique approach or a unique delivery" (Interview, 5/25/05, p.8). Since she had already spent almost three weeks in the lab, she doubted that she would be able to do this type of evaluation.

Thursday, May 19, 2005

PRESENTING THE (UN)FINISHED PROJECTS

Students had gone on a field trip for the first two days of this week, Monday and Tuesday, consequently, they were not able to access the lab during the days. On Wednesday after the trip, some of the groups were allowed to spend part of the class time editing their movies. For two days, today and the next day, the whole class watched each group's movies in the computer lab, room 530. Some of the groups showed their unedited movies, through a TV monitor connected to a camcorder. Other groups presented their edited movies through a projected screen, using Movie Maker. Although most of the groups did not utilize the full extent of what was possible with the use of technology, due to the limitations that they had, Ms. Brady thought that several groups were able to use technology in the way that she had intended and really understood its possibilities. She thus said:

> They came up with some very good projects that showed a higher order thinking and understanding of the materials…. not all of them were finished, but I think some of the ideas that the kids came up with and the ways that they expressed the materials were very unique and creative, and I was really proud of them. (Interview, 5/24/05, p.4)

Today, two groups, Peter's and Carol's, presented their unedited movies while one group, Michael's, presented a polished version. Before the first group began, Ms. Brady told the students to print out their pictures, if they needed them for their presentations. While Peter's group was printing out their pictures, Ms. Brady set up the camcorder, connecting it directly to the television located on an upper corner of the lab. Peter's group had "the privilege" to present first. Ms. Brady asked everybody to pay attention and not to work on their own materials, asking them to sit where they could clearly see the television.

The Real World: Civil War Leaders

Peter's group stood together under the television, with their scripts in hand, and turned on their camcorder to play their movie on the television screen. As they were watching their movie, each actor read their lines on the script. They were compelled to read their lines because when they displayed the raw footage of their movie, it did not have a voice-over. This group's game show of "The Real World: Civil War Leaders" had five actors, Abraham Lincoln, Jefferson Davis, Robert E. Lee, Ulysses S. Grant, and Harriet Tubman. The show followed the lives of those five people, who lived together in a house. The daily occurrences of their lives and their interactions were recorded. The students had dressed themselves up and applied makeup so as to resemble the historical heroes or heroine. As scene one started, they introduced their topic. Each actor read a paragraph or sentence of the opening comment.

First, Lincoln said, "This is the true story of five Civil War leaders,"

"Picked to live in a house," Grant said.

"And have their lives taped," Lee said.

"And find out what happens when people stop being polite," Davis said.

"And start getting real." Tubman said.

And finally they all together shouted, "The real world, Civil War!"

Introducing what they were going to do, all of the leaders entered the house in the movie scene. Before the leaders walked in, a girl, who was the narrator, said, "the Civil War is long gone, but all of our heroes and villains are still alive today. We have gotten five of them to live in a house together and try to work out their problems." As each leader walked in, in the taped movie, the same student actors stood under the television

set and did their voice-overs, talking about the leaders' accomplishments, education, and their impact on the War.

As Abraham Lincoln entered the house, a student who acted his part said, showing his picture during the War:

> My name is Abraham Lincoln, and I was the president of the United States during the Civil War. I gave many speeches trying to free the slaves, and I believe that I can convince everyone that slavery is wrong. I did not fight in any battles, but I tried to help as much as I could, and I think I made a difference by using my leadership skills to help with the slavery issue.

Showing a picture of Jefferson Davis, as the movie showed his character walking in the house, a boy who acted his part said:

> My name is Jeff Davis, and I was the president of the Confederacy during the Civil War. I graduated from West Point Military Academy as a cadet. I fought in the Battle of Buena Vista and in the Mexican War. I led my side in the Black Hawk War. Even though everyone blames me for losing the Civil War, I believe that I helped make a difference. As I said in the First Message to the Confederate Congress in March of 1861, "All we ask is to be let alone."

Next, Ulysses S. Grant walked in to the house in the movie footage. A boy who was standing next to the student actress, held a picture of this hero, while the student actress who played the part of Ulysses S. Grant said:

> My name is Ulysses S. Grant, and I was a Union General in the Civil War. I attended West Point Military academy and I graduated in 1843. I led the battle at Shiloh but lost, and I won the Battle at Vicksburg. Robert E. Lee surrendered to me, and I wrote out magnanimous terms of surrender that would prevent treason trials.

Then, the character Harriet Tubman walked into the house, in the movie footage. While a boy in the group showed a picture of the heroine, a girl who played the part of Harriet Tubman introduced herself:

> My name is Harriet Tubman, and I made more than 19 trips to the south and led over 300 slaves to freedom. My capture would have been worth 40,000 dollars. I took part in Anti-slavery meetings once I was freed. I became known as the "Moses of my People."

Finally, the character Robert E. Lee entered the house in the movie footage. Showing a picture of the hero, a boy who acted his role proudly spoke up:

> My name is Robert E. Lee, and I was accepted into the United States Military Academy at West Point and graduated second in my class. I was a Captain in the war between the U.S. and Mexico. I was a General in the Civil War. After winning battles like the Battle of Chancellorsville and losing battles like the Battle of Gettysburg, I surrendered at Appomattox Court House. I was almost tried as a traitor, but was left with only my civil rights suspended. As I said, when I was watching thousands of Union soldiers sent to the slaughter at Fredericksburg, "It is well that War is so terrible, or we should grow too fond of it.

The whole class laughed out loud because the boy's performance as Robert E. Lee was quite dramatic. In the movie footage, he was dressed up in costume and wore heavy make-up to look like the real historical person and walked down a set of stairs, with an imperious gesture.

Now the scene in the movie changed to the living room of the house. The five Civil War heroes were sitting in the main room and discussing their viewpoints until the situation got out of hand. The characters fought over which opinions were better.

Abraham Lincoln said,

"Since I was and still am the best leader I should run this place."

"Well I fought in the Mexican War and sacrificed myself in the Battle of Buena Vista. Have you ever sacrificed yourself in battle?" Jefferson Davis spoke to him.

And Ulysses S. Grant said,

"It doesn't really matter what you did. It amounted to nothing because you lost the Civil War!"

In a moment, Harriet Tubman ran through the room. Robert E. Lee got up, untying his belt and threatening her with it, and shouted,

"Gasp, what is this slave doing in this nice house?"

Withholding him from attacking her, Abraham Lincoln told him,

"Slaves have just as many rights as anyone else!"

"Wanna bet?" Jefferson Davis said.

Again, Abraham Lincoln said,

"Everyone! Everyone! Here we all are friends. Calm down and go to your rooms!"

Then the characters were alone in the empty, small rooms in the house. They confessed there what they were really thinking about the others.

First, Ulysses S. Grant said to himself,

"Robert E. Lee thinks he is so good but who out of us led their side to victory? Me! He may have won some of the first battles, but I won the war."

Harriet Tubman confessed:

All these people think they are hot stuff. I saved hundreds of people and they just care about themselves. I didn't fight many battles but I saved over three hundred

lives. I may have little power, but I have a big heart! And I also was a cook, nurse, and spy in the Civil War. All they did was boss people around!

Grumbling, in his own peculiar cynical tone, Robert E. Lee said:

I can't believe that Grant and Lincoln let that slave come to our house. This is just like when he failed to attack us during the Pickett charge because he was too weak. The only reason that he won was that he had a bigger army than I did. And who does that Lincoln guy think he is by making everything peaceful. This is war! Like I always said, "a country without slavery is mad and pointless!

Then, the characters moved back in to the main room and began another discussion. At this point, holding a cup towards Harriet Tubman, Robert E. Lee told her with a high hand:

"Hey! Tubman, Give me a drink."

Refusing resolutely, Harriet Tubman told him:

"No, I will not."

Lee pulled out a whip and walked toward her while she just sat there, realizing the stupidity of his actions. Then, intervening, Abraham Lincoln said:

Guys! Guys! Break it up! This is what I was trying to avoid in the Emancipation Proclamation on January 1st, 1863. "And by virtue of the power, and for the purpose aforesaid, I do order and declare that all persons held as slaves within said designated States, and parts of States, are, and henceforward shall be free, and that the Executive government of the United States, including the military and naval authorities thereof, will recognize and maintain the freedom of said persons.

Everybody in the room felt ashamed.

“Well, Lincoln, that was a fine speech. That will make it clear to my people that slavery is wrong and that we should all be friends”, Jefferson Davis said.

“Let’s make peace. I surrender,” seemingly convinced, Robert E. Lee said.

“I accept your surrender!” Ulysses S. Grant said.

Under his breath, “Yes, I knew my motivational speaking skills would work,” Abraham Lincoln said.

“Let’s discuss this at the corner store,” Jefferson said.

“I concur!” Abraham said.

All of the characters walked down to the store just outside of the room and never fought again.

Peter’s group ended their movie here. They presented a set of several ‘bloopers’, which made the class laugh several times. As it ended, Ms. Brady said, “That was so cute,” and recognized a student who memorized his long lines. The audience cheered them with big applause. In fact, this group produced a brilliant parody of a popular TV reality game show. They presented a dramatic and yet humorous story in which there were two storylines, the argument of personal achievements and the slavery issue. They understood them well and maintained their characters throughout the story.

Technological Innovations during the Civil War Period: Artillery, Telegraph, Repeating Rifle, Ironclad, and Railroads

Ms. Brady set up another camcorder for Carol’s group, connecting it to the television. This group also showed an unedited movie. A girl in the group stood up and introduced the people in her group. Briefly saying the names of people in the group, the presenters played music, the Napoleon. The music would have been included in their movie if they had manipulated the film with Movie Maker. This group’s movie was not

shown in the order described on their script. In particular, their first scene was incomplete. The second scene was played first.

Act I: The Napoleon

According to their script, the first scene would have a boy walking out of a house and a girl following him, waving goodbye and crying. Both of them were wearing old-fashioned clothing. The boy was leaving home to serve in the army. She told him, "Just don't die." The word echoed. As the screen went black, white words appeared on a black screen:

Laying down your life for your country

Comes with a price

Especially if you aren't properly equipped…

Then the music, the Napoleon began. This first scene was a background for the following scene. It was based on the content of letters written between John Booker and his cousin, Chloe Unity Blair, during the Civil War. Their letters described what life was like for an ordinary soldier serving in the Confederate army, depicting the drama of battles but also the rhythms of everyday life at camp. John Booker was enlisted in the Army on May 24, 1861, in Company D of the 38th Virginia Infantry.

As they turned on their camcorder, which was connected to the TV, their movie showed an advertisement, with a girl dressed in old-fashioned clothing standing on the school's baseball field hill, who said:

> The new Napoleon, a 12 pound, muzzle-loading smoothbore, has just arrived. This light and portable smoothbore fires canister and is the new favorite artillery piece in both the Union and the Confederacy. Its maximum effective range is 1700 yards and can be used as either an offense or a defense weapon. According

to recent studies, the Napoleon has inflicted more casualties in the war than all other artillery pieces combined.

Then, the girl who appeared in the first scene said with an accent, “I just received this letter from Johnny and he’s doing great! And it’s all thanks to his Napoleon. Thank you Brown’s Artillery!” Now immediately a boy appeared and exhorted:

> Now for only 20 dollars, you can go to Brown’s Artillery store and pick up this new advance in the modern world of artillery. For more information, call 1-800-war-guns. Protect yourself.

Act II: The Colt repeating rifle

As another scene started, a boy stood outside the school, in front of a tree, holding a representation of the Colt Repeating Rifle, as he said:

> Hi, I am Elisha Root and I designed the repeating rifle. This rifle weighs nine pounds fifteen ounces and comes in calibers of .40 to .64 with cylinder of either five or six shots. Here are some satisfied customers to tell about how their very own Colt Repeating Rifle changed their lives.

Standing outside the school, a boy held a representation of a rifle and gave a testimonial:

> Hello, I’m Franklin, the day I received my Colt Repeating Rifle my life turned around. Before (showed sad picture) I was a sad and lonely guy, but then I got a rifle, my life turned around, because of this rifle I have a girlfriend. (Showed picture of him with his girlfriend)

After the boy’s testimonial, a girl (Sally May) and a boy (Gerald) stood next to each other, the boy missing one of his legs and hugging his rifle tightly.

"It was an ugly war. The Union soldiers were armed with Colt Repeating Rifles… it was horrible," he said.

"If only you hadn't left your repeating rifle at home…then you might still have your leg," she turned and said to him.

"This gun will never leave my side!" and he said.

Then, another boy (General Harney) who was holding a representation of a rifle, dressed in an army uniform, appeared on the screen and gave his testimonial:

> I used this rifle in the raid of Chieka's Island. If it hadn't been for this superior gun, we might not have won. This rifle was also the first rifle officially adopted by the U.S. Government.

Act III: Telegraph

In the next act, two people who were in separate rooms tapped on a representation of a telegraph, clearly writing to each other. Reading out loud what she was typing, one of the students said:

"So, how are things in Savannah? Here in Charleston everything is wonderful."

Also reading out loud what he was typing, a boy replied to her,

> "Great! My cousin got married yesterday. They are on their honeymoon in Gettysburg."

Now, another girl, who had appeared in the first advertisement, said:

> You may be asking yourself, "How could two people so far away be communicating in mere second?" Well, it's simple. They are using a telegraph! What is a telegraph? Well, it is a machine that uses electric wires to send messages made up of a series of dots and dashes. These symbolize letters and numbers.

Another boy who also appeared in the second advertisement said:

> And the telegraph is so easy to use! All over the country, many have hired men and women, like Susie here, to operate them for ordering war supplies and other jobs! Also, many generals used this system to communicate with their soldiers about battle tactics. This is a great system to help keep tactics hidden from the opposing side. It could even help you win a war!

The girl who was typing in the telegraph showed up next and said, “I’m so glad I bought the telegraph machine. Now I can communicate with my brother instantly, instead of having to wait for months for a letter.”

“So what are you waiting for? Go buy your own telegraph today!” the actor in the first advertisement finally said.

Act IV: Ironclad

As a new act began, a girl introduced a military invention, standing in front of white backdrop:

> The Ironclad, a massive armored ship that was designed to attack other ships and assault land targets in France built the first Ironclads to attack their enemy’s forts on land, but England later adopted the technology and soon adapted them to be able to attack seaborne targets. The Confederacy Ironclads were made of metal while most Union ships were made out of wood. That put the Union at a major disadvantage.

Another girl appeared in the scene and tried to persuade viewers to sail on the ship:

> The Confederacy used these juggernauts mostly to defend their harbors and seaports while the Union used their ships as an offensive weapon and now you

can ride the boat that ruled the seas! This boat won many battles for the Union and the Confederacy and saved even more soldiers' lives with its metal armor.

Then two people gave their testimonials about the ship. A boy said:

> I love the Ironclad ships because I ordered a shipment of cheese over from France and the ship was under attack! That shipment cost me [much] and I love cheese so much so I was worried sick. But three days later a battered ship with metal armor entered the harbor and my shipment of cheese came safely to me all because of the success of this unsinkable ship!

And another boy said:

> I love the Ironclads because my life was saved when we were under the attack of the Union forces and if we hadn't had an Ironclad we surely would have died. The strong metal our ship was made of repelled the bullets that would have otherwise put holes in the ship.

Finally, the first boy who advertised the ship said:

> All these people and many more trust the Ironclad ship line with their cargo and their lives when they are passengers and you can too, just call 1-800-675-iron to order your ticket today, this once in a lifetime event is available to you for only one dollar and fifty cents!

According to their script, the end of this act included, in fine print on the screen, a warning message that would say, "The Ironclad Shipping Co. will not be held accountable for smuggled items and we will give the information to the authorities if requested." But this message was not displayed because their movie had not been edited.

Act V: Railroads

As the last act started, the film showed a boy standing in front of a railroad backdrop, which was projected against a white wall background. This boy introduced another invention during the Civil War period:

> Prior to the Civil War in this country, railroads were a new and relatively untried invention. However, during the Civil War, railroads were invented. They became both strategic resources, as well as a military targets, precisely because they were strategic resources.

Then, standing in front of a mini train backdrop, wearing a conductor uniform, a girl stated the railroads' effect on the War:

> During the war, soldiers, material and food were routinely transported by rail along with civilians and the raw material necessary to keep the war effort progressing. It was soon realized that the railroads would help to make or break the Union in this conflict which was so bloody that the combined total of all U.S. losses in all other wars would not equal the losses in that war.

Another girl standing in front of the railroad backdrop advertised the riding tickets of the historic train:

> So, if you want to ride on a train used during the Civil War that transported historic things like the Colt Repeating Rifle or people who fought in the Civil War then call 1-800-the-rail and you can order tickets for only one dollar.

This group's movie ended here. "Nice, very nice," Ms. Brady cheered the students who performed this movie. Actually, it was a word of encouragement from her. The audience made no comments or questions about this group's presentation when Ms. Brady asked them for it. This was partly due to their poor acting since the group would often just read the lines from their scripts. Meanwhile, she appreciated the use of the picture projection used for this group's backdrops, saying, "It worked out well."

A Technological Innovation during the Civil War: Harper's Ferry Rifle

Ms. Brady asked Michael's group to introduce themselves. Standing up beside the screen, a boy from the group called the members of his group and told classmates briefly about this group's project. The group made an info-mercial about a rifle which was invented during the Civil War period. As the movie starts, a boy (John Elton: a main character selling the gun) stood outside the school shot a wooden rifle that he had made, pointing toward a large target. The camera filmed the imaginary bullet trajectory running through and showed that there was no mark hit on the target. His shot missed. The boy broke the rifle, getting angry. Then holding up another wooden rifle, he said:

> Have you ever missed a target you really wanted to shoot? Maybe you want to shoot for dinner! (The boy stood beside the projector screen held up picture of a steak.) Maybe you wanted to shoot an enemy! (Picture of a robber held up.) Maybe you really hate squirrels. (Picture of a squirrel held up.) Then this is the gun for you! This Harper's Ferry rifle shoots straighter farther and more accurately than all those other pathetic, wimpy, good for nothing smoothbores with which you can't shoot worth a darn. The gun is light-years ahead of its time. The new technology of having a spiral barrel allowed the gun to be more effective and less hassling. This gun takes less time to reload than the next competitor. And it can be yours for only four easy payments of 39.99 dollars!

Now, a girl (identified as Dr. Lindsey: historian) appeared on the screen and gave a long description of the new rifle, including how it affected the way the War was fought and its impact on military strategy:

> The .69 caliber Harper's Ferry rifle greatly changed the strategy of the Civil War. (Picture of the rifle held up by the boy stood beside the screen.) Originally both

sides fought using an old fashioned smoothbore musket. (Picture of the smoothbore held up.) This musket has horrible aim, being only reliable for fifty to hundred feet. The attacking troops would have to mass together and charge extremely close to the enemy. Plus, it took nearly thirty seconds to reload a smoothbore musket while it only took about half that time to reload a Harper's Ferry rifle. The Harper's Ferry rifle was manufactured at the Harper's Ferry Armory between 1830 and 1844. (Picture of the Harper's Ferry Armory held up) It was based on the famous 1777 French muskets. The barrel and all other metal parts are polished steel; the stock is oil finished American walnut and displays the government proof marks. This is a muzzle loading rifle, like all the ones used by foot soldiers to preserve ammunition. Like almost all of the rifles used in the Civil War, the Harper's Ferry rifle fired the small, hollow minie ball responsible for the overwhelming number of battlefield deaths. (Picture of a minie ball held up.) The minie balls were also easier to load into the rifle than the regular bullets used in the smoothbore muskets. This powerful shooting, and made frontal assaults too deadly. Therefore, the generals were forced to change their strategy and use stealth. Unfortunately, it took several deadly battles in which hundreds of men were killed before the generals realized the need for a change of strategy.

After this, the main character who was selling the rifle said, "That's why you should get this Harper's Ferry rifle. But if you don't believe us, check out these customers who gave the rifle a try." Then two people gave their testimonials. A boy (Jim Van Vlack) said:

> My great grandfather, George W. Van Vlack (a Union soldier) fought in the Civil War. In a letter he wrote to his brother Stephen on December 18, 1861 in Elmira, he said, "Our guns are the Harper's Ferry rifles. Well made and well sighted…"

> What my great grandfather loved about these guns most was the accuracy. It was great enough that it shot further than smoothbores, but when you used minie balls with it you were the greatest shooter around. If you want to be the best shooter, you should use the best gun.

And another boy (Timothy Christie) said:

> My great-grandfather, Thomas D. Christie (a Union soldier) had one of these rifles in the Civil War. He once shot a tree thirty inches wide from a hundred yards away. Not only did the superior sight and how straight the bullet shoots allow him to perfectly hit the middle, the power of the gun sent the bullet all the way through the tree and another fifty yards beyond it. In a letter to his father, James C. Christie, on October 18, 1862 in Corinth, Mississippi, he wrote, "The sound of the gun is most exhilarating, it fills us with enthusiasm, and we would die rather than desert her." If that's not enough proof, then I don't know what is.

Then, holding up two boxes of fake balls and bullets in each hand, a girl advertised the bonuses:

> Plus! If you call in the next sixteen minutes you'll get this fifty-pack of minie balls and a collectable authentic Civil War bullet, absolutely free! That's right guys, a cartridge of fifty minie balls for your brand new .69 caliber Harper's Ferry rifle, and a beautiful Civil War bullet, originally a hundred dollar value, free! But wait! There's more! When you call to order, we'll knock off your payment of $39.99! Now that's a deal!

Then, in the final scene, the gun salesman stood outside with his wooden rifle in his hands and said, "It's a beautiful day outside, and sure glad that I have the Harper's Ferry rifle." And he fired it saying, "Let's see how it shoots." Again, their video camera followed the imaginary bullet trajectory as he shot and stopped on the spot marked on the

very center of the target. It demonstrated that his rifle worked perfectly. The class laughed here. The movie ended with the character giving his final advertising comments, "Need I say more? This great rifle can be yours for four easy payments of $39.99! Go ahead, give us a call, buy a Harper's Ferry rifle and buy happiness!" The school bell rang as soon as the movie ended.

Friday, May 20, 2005

In this second day of presentations, two groups presented their edited movies which were projected on a screen in the computer lab. The whole class watched first Leslie's group's talk show about life at Civil War prisons and then Alan group's infomercial about a military invention during the Civil War.

Lives at Civil War Prisons

Leslie's group produced a talk show in which a host interviewed four historical characters. They talked about the prisoners' daily lives at the Union and Confederate prisons. Before starting their movie, like the other groups, Leslie's group introduced themselves and told the class briefly about each of their performances in the talk show, standing in the corner of the computer lab. One of the boys in the group acted as a talk show host named Patrick McClooney. Accordingly, their talk show was called the Patrick McClooney Show. The other boy and a girl in the group acted as its different guests. They were prisoners who had survived from the Andersonville prison in the Civil War. The other two girls in the group were also guests. They acted as Robert E. Lee, who was General of the Confederates, and John S. Swann, who was a Captain of Confederates.

<u>Scene 1</u>

As soon as the movie started, with a loud applause sound artificially made, Robert E. Lee entered the scene and sat at a round table beside the host. He was wearing a farmer's clothing and a hat, looking somewhat shabby. At that moment, a caption that read "General Robert E. Lee: He was just farming at his postwar home" ran across the movie screen, on the lower section of the screen. Ms. Brady's pleased laughs were heard here because of their idea of doing that in the movie.

Robert E Lee sat next to the table as the host asked him curiously, "General Robert E. Lee, I see you are in that farmer's outfit, are you retired from the military?"

"Yes, that right." Lee answered gallantly.

Then the host hastened to ask, "I guess we'll talk about Civil War prisons, since these are one of the worst parts of the whole war. What would you say are the worst things happening?"

"Well, I've seen millions of men die, even more suffering from diseases such as small pox and dysentery. There were so many men in those prisons, they were just asking for trouble and sickness," Lee said shaking his heads in sadness.

"You're so right General. No one should have to die such horrible deaths. Which prisons, the Union's or Confederate's, did these diseases and such [affect], the most?" the host made a quick comment and asked another question.

"I'd say the Confederates because at Rock Island, the death toll was about 17% of the men dying, but at Andersonville it was about 27% of the men dying. That might not seem like much, but we're talking human lives there," Lee answered with a genuinely regretful look.

"Yes, that's horrible. Why do you think that would happen? Was there any difference in the prisons? Or do you think it was the people working there or something like that?" the host asked.

“Well, I think it is because the Confederates had something to fight for. When slavery was gone, so was their lifestyle,” Lee answered.

“That’s horrible, but then again, so are the poor conditions of slavery. Speaking of poor conditions, were there any times of poor medical conditions, such as housing, unfair rations, or absolutely no housing at all?” the host asked.

“Definitely, In December, once at Andersonville [prison], the temperature was below zero and small pox went crazy. The prisoners died, most of them, within the first few months. It was just awful,” Lee answered with some regret.

Sighing deeply, the host asked, “How could heads of prisons permit such cruelties? Did they really not care?”

“Well, I have evidence that they were part of the cruelty. Because Alfred S. Schnapp, the Union General, he was nicknamed General Terror,” Lee said.

“Wow, that’s just a strange name. Between the Rock Island and Andersonville [prisons], which one had the worst conditions?” the host asked.

“Well, I would say Andersonville because they both had the diseases and everything, but Rock Island at least had barracks,” Lee said.

“Well, that’s true. And you said that there were 23,000 prisoners in some of the camps, were they really ready to handle that type of population?” the host asked.

Shaking his head, Lee replied, “Oh no, they weren’t. That’s way too many. That’s a couple thousand too many.”

“Hum, did the prisoner’s treatment change according to how other prisons treated them. So, like, if the Union treated them bad, the Confederate would change, or such?” the host asked.

“Well, yes, indeed it did. One time Rock Island cut rations in response to what was happening in Andersonville prison,” Lee said.

The host asked, “Did either side try to improve prisons because I mean that’s just bad. Did they ever try to make them better?”

“I think that the small pox epidemic got better at Rock Island once they began laundering things. And then hospitals were built,” Lee answered.

“OK, well thank you for being here,” the host said.

At this point, Robert E. Lee left the table and the scene faded out.

Scene 2

As the second scene faded in, the host commented, “It makes your heart break, doesn’t it? To sit here while these horrors have happened during the Civil War, nothing civil about it, if you ask me. Here are prisoners who survived Andersonville. Ladies and gentleman, please, may I introduce you to them.” Receiving a thunderous round of applause, with an artificially created sound, two guests entered the scene and sat at the round table.

The host asked them, “Well, thank you for coming here today. Just as a background, what battle area did you fight in and what horrors did you find in Andersonville after you got there?”

“Well, I was in fighting Petersburg, Virginia, when they captured me and I was sitting right then and right there in that rat hole Andersonville prison,” guest 1 said.

“I was sent to Andersonville jail, but I was captured in the wilderness of Virginia. I’ll tell you what,” immediately following him, guest 2 said.

“Since you were fighting against slavery down in the south, did you ever see any slaves working with them?” the host asked them.

“Oh, yes, they had them slaves working in Andersonville bigger than it was. I think there was going to be like a million thousand people living there if the war never ended,” guest 2 said.

Looking at guest 2, guest 1 mocked him saying, “Do you know how many people a million thousand is? That is bigger than France. It’s huge. It’s like England and France and China and Russia combined. It’s huge. Enough of that topic, (turning to the host) but they had slave men all working and never resting. They must have been exhausted (wiping her brow), just making me to think about that I burn some calories here,” the actress said tapping her hands on her fat abdomen several times.

The host asked them, “It must have been strange seeing slaves in your own country, if that’s what you were fighting against. Because I mean you just sat around there trying to keep yourself alive?

“Well there wasn’t much to do with all the crowding and cluttering, but one thing for sure is that I loved listening to them older privates and prisoners talk about all their crazy stories, growing up in the north and being just bad kids and how their grandparents came down here to America in 1607 to form Jamestown,” guest 1 said.

“While you were there with the guards and other soldiers from the Confederacy, did they abuse you?” the host asked.

Hitting on the table hard with her hands “if I disrespect them personally by abuse, by George, yes they did,” guest 1 said in a loud and angry voice.

“You can say that again. They were always hooting, treating us like dirty man,” guest 2 said indignantly.

“You reminded me of that. It was like a war within a war at Andersonville prison. Disgusting I tell you, disgusting,” guest 1 added.

The host asked, “Alright, you had a hard time down there. What was your most vivid memory of since when you were down there?”

“My most vivid memory of Andersonville would be the night Robert Fox and Sneed and finally gave up. He started yelling at us. I thought we’d never get out of there. I was scared to hoot,” guest 2 said.

“Hearing him say those things made me personally give up because I knew if a man like Robert Fox was giving up, there was no hope for the rest of us. We had to stop. This was a crime,” guest 1 added.

The host said, “Well thank you for being here. It’s great to have a first-hand account.”

“Well, thank you for having us here today, it was a great time. We’ll be leaving now,” guest 1 said and left the table with guest 2. The scene faded out.

Scene 3

“Remarkable,” the host commented, “Thank you for your time. It’s great to have a first-hand account of prison life. Our next guest will be John S. Swann who spent time at the prison of Fort Delaware.” Swann’s actress came in and sat at the round table.

The host asked John S. Swann, “So, let’s get down to the questions. When you were in the war, you got captured. Where did you fight?”

“Well, I was in a leader of a military band four at Harpers Ferry. When the Civil War came around, I went with the Confederates, and sharp shooters came along with me. We made a camp and settled down Buffalo County, I was appointed the commissioner in charge of the pole and the ordinance of succession,” Swann said in a rapid tone.

The host asked him, “That was some interesting things that happened to you. When did you get put into prison after you were captured by the Union?”

“I’d say around December 1864,” Swann answered.

The host asked him “And you were a Confederate officer during your time in prison. Did you ever regret joining the war?”

“Never, the sharp shooters and I fought for what we believed in and never hesitated or looked back,” Swann said with authority.

“While you were there did you ever wonder what was happening in the Confederate prisons with the Union soldiers?” the host asked.

“Every now and then, but I guess that was about the same as it was here. And that will give a fellow a wake up call, I guess,” Swann said.

Host asked him, “So, you were confined at Fort Delaware, what were its conditions?”

“Fort Delaware is known as the Andersonville of the north. It was awful. I arrived in a dignified officer’s suit. I was given a gray cotton undershirt to wear in the winter. I was lucky to even get that. In fact, I think a man came around with many of those on his arm because I had a bad cough, which I cured with vinegar and pepper,” Swann responded still in a hurried tone.

The host asked him, “Did you ever have to pledge allegiance to the Union after the war?”

To which Swann answered, “Yes, I did. In fact, I have with me here a letter that I received in Fort Delaware from a friendly Union officer recommended me to do so.” The actress that played the part of John S. Swann read the letter:

> Dear Sir, referring to me, your letter was received upon my return from New York. I shall be very glad to assist you in obtaining your release. But I do not think it is possible to effect this object unless you are willing to make the oath of allegiance. Your friends at House 18, that’s the sharp shooters, are taking the

oath and I hope that you are willing to do so. At present time, all positions to the government have ceased. It has now become the duty of personal example of giving adhesion to the old union as it was and as I hope it will remain forever. I trust you will receive this sentiments in same spirit in which they were hand written. I decide to see you restored to your friends and family, once more occupied and to discharge you from your professional duty. Your early answer is necessary in which we will move in this matter. Yours truly, J. Randall.

"When was this letter sent to you?" the host asked John S. Swann.

"1865, May 6th." Swann answered.

"Thanks for sharing that letter with us. It's been great having you on the show today and, as for everyone else, have a good day and see you all tomorrow," the host gave a final comment.

With the movie ending here, the class gave the group a round of applause. Ms. Brady praised the group for their performance, saying that it was very educational and the content was excellent. She thought that the last guest's use of the letter was very convincing. All of the students acted very well. It was impressive that they kept their characters personalities throughout the movie.

A Technological Innovation during the Civil War: The Schenkl shell

After a break between the groups, Alan's group introduced themselves. This group made an info-mercial on a specific technology, 'the Schenkl shell,' which was a bullet used by the Union during the Civil War. The movie which they presented was quite polished with the use of Movie Maker.

As their movie began, a scene filmed outside in an open field presented two Civil War soldiers standing up, one to the right and the other to the left of the screen. A narrator said, “Tired of ammo that just won’t do the job?”

After this line, the soldier 1, on the left side, shot soldier 2, who stood on the right. Soldier 2 laughed.

“Do you want artillery that shoots with a bang?” the narrator said as the film showed a display of a box of ammunition moving across the field.

“Are you tired of those less flexible wooden framed bullets that can’t even go half the length of the battle? Is manually packing the powder in the gun so slowly getting your friends killed? Well then, the Schenkl shell is the ammo for you!” the narrator said.

Soldier 1 shot again and this time soldier 2 falls down. Soldier 1 held up his hands triumphantly and the narrator said, “This 2.92 inch shell is sure to be your cup of tea.”

One of the students walked across the field, to the center of the screen, displaying a primary source picture of an ammo crate. At this point the camera closed up in a picture of the Schenkl shell. Background music started to play at this point. The displayer pointed to each part of the picture as the narrator described the shell:

> The common shell interior construction has a bursting charge cavity that does not contain case-shot material. So, what does that mean? For us westerners, you get more bang for your buck. But really, the common shell interior or basic body of the shell does not have any little bb’s which don’t go too far. Instead, the shell has the powder in it for you! This way, you don’t have to manually pack the powder in the guns. This is much better than the musket balls we used against those Brits in that War of 1812. (Here the displayer pointed to an anvil cap.) The anvil cap provides a more efficient way of lighting the powder and

giving it a little more, giddy up. (Here the displayer pointed to the striker.) With one of the most effective anvil strikers around to trigger the anvil cap, the Schenkl shell will be more reliable to light that powder when trying to make those darn rebels kick the bucket.

Once again, soldier 1 shot soldier 2 and the latter kicked a bucket standing next to him. With a tone of embarrassment, the narrator said, “No… seriously…” Then immediately soldier 2 falls over and was dead. The displayer pointed to the powder train on the picture.

“The powder trains or powder containers have such a structure that you have more powder for the size of the bullet. This will surely satisfy you with its performance. Guaranteed,” the narrator said. Solider 1 cheered as soldier 2 hung his head low.

“But wait! There’s more!” the narrator said.

Soldier 1 stood with a puzzled look and the narrator continued his line, “the body of the bursting cavity, tapered cone, and papier-máché frame will surely launch your projectile further with its light weight and aero dynamic structure. Not to mention, it’s the best around!” At this point, soldier 1 cheered.

At this moment, there was a change of scenes. The next scene showed three people, soldier 1, soldier 2 and a historical person being interviewed. First, soldier 2 stood in the center of the screen with a very sad look because George, his friend, was dead. He was a Confederate soldier. He said in a sad voice:

“Those Yankees got my sniffles friend George in one hit. He was on the ground crying to be back on the plantation.”

Then soldier 1, a Union soldier, said, “Now that I have these eighty two percent effective bullets, I can take down twice the Confederates in half the time! My buddy

James H. Rigby agrees. Look at this letter he wrote to an unknown superior about the Battle of Gettysburg on July 17, 1863 in Berlin, Maryland."

The movie camera closed up to a fake letter this group had written, while soldier 1 read it:

> At daylight, on the morning of the 3rd, I commenced shelling the woods in my front, and continued firing slowly for about three hours. I remained in this position until Sunday afternoon, July 5. During the whole time I only fired 211 rounds --- 41 rounds of Schenkl percussion shell and 170 Hotchkiss shell. I have been informed by Major General Slocum that the battery did terrible execution.

With a very dissatisfied look, soldier 2 said, "We would have won that Battle of Gettysburg! But our old fashioned bullets just didn't cut it against those Schenkls. We had to manually pack powder into our less flexible shells which took too much time."

Finally, General Henry L. Abot, commander at the Battle of Vicksburg gave his testimonial:

> When the sabot is well made and in good order, this is excellent ammunition. It has a smoother and more silent flight than the Parrott, it gives excellent practice, and the light sabot does not endanger troops in front. The Schenkl is the epitome of this bullet. The bullet makes excellent time with its ready-to-go insides. Our troops were able to shoot faster, more accurately, and didn't take so much time reloading. This helped greatly at our Battle of Vicksburg.

In the final scene, the narrator said, "So with this package you can get…" Soldier 1 held up an ammo crate and the narrator continued, "The ammo… that's not that much, you say? Well there's more!"

Soldier 1 is shown with a surprised look and the narrator said, “If we get your telegram to 3220 Penn Street in the next two weeks, we will include this new repeating rifle! A ten dollar value, absolutely free!”

Soldier 1 nodded as the narrator continued, “But wait! There is yet more.” Soldier 1 cheered and the narrator said, “We’ll also send you this free barrel cleaner!”

“No way!” soldier 1 said.

“Yes way! And there is more!” the narrator said.

“What?!” soldier 1 said surprised.

“Yes! We’ll add a free one year warranty! Send your items back for a full refund if you aren’t satisfied. So telegram now! Only two dollars per crate! And get your Schenkl shell today!” the narrator added.

The movie ended here, with soldier 1 holding a picture of a rusty bullet up. Ms. Brady asked for students’ attention and gave them a short review about their projects. She apologized for all the different technology problems that they’ve had over the project. In particular, she expressed her regrets for the fact that most of the students did not have a chance to edit their movies, inserting music or trailers onto them. All of the students moved to their social studies classroom because their presentations were finished about 10 minutes before the period ended.

CHAPTER 5: THE REAL PROSPECTS AND POTENTIAL PITFALLS OF INTEGRATING TECHNOLOGY FOR THOUGHTFUL SOCIAL STUDIES LEARNING

Some Conceptual Factors in the Successful Adoption of Technology

All decisive human actions in any social worlds are the inevitable results of the actors' way of thinking; Teachers' classroom practices are no exception. It also mirrors, in various forms, their thinking on teaching and learning. Hence, it is of vital importance to consider teachers' thoughts or beliefs to better understand their classroom teaching (Onosko, 1989, 1990; Windschitl, 2002; Barton & Levstik, 2004). In fact, as other innovative approaches to classroom teaching, teachers' conceptual understanding of teaching and learning is a critical condition for the successful adoption of technology into classroom teaching (Cuban, 2001). From Ms. Brady's teaching story in the previous chapter, several conceptual factors pertaining to her considerable integration of technology into her classroom teaching were revealed.

Most of all, Ms. Brady was a technology enthusiast who touted the imperative of classroom uses of technology. It was clear when she stated, "Without technology, we're not really educating our kids because that's their whole world" (Interview, 5/24/05, p.8). Her teaching story in the study does not provide direct, conclusive evidence for the origin of her enthusiasm for technology. However, there are some clues as to why she was eager to infuse various technologies in her social studies classroom. Part of the reason might be found in the indirect influence of her husband, who was an expert in technology and introduced her to new technology. Another reason might be attributed to her school district policy that placed special emphasis on technology applications. Her early exposure to various educational technologies during the period of teacher certification might also be part of the reason.

Ms. Brady's instructional goal of social studies was somewhat unique. Clearly, she was not an expository-oriented history teacher who emphasized content acquisition as her primary instructional goal. She was well aware that it was futile to teach every compartmentalized piece of information when she said "how many adults work around knowing all these different dates of [historical] things and who said what, when?" (Interview, 3/22/05, p.5) Yet, she did not identify developing (higher order) thinking as her highest priority instructional goal in the strictest sense. The overarching instructional goal of history and social studies in her classroom, instead, was to make historical and contemporary knowledge of the disciplines a large part of her students' "overall experience." This instructional goal was made clearer to me, when she stated that it is "having an overall impression of excitement and learning and developing ideas [of the subject content]" (Interview, 3/22/05, p.5).

This instructional goal of Ms. Brady can not be directly inferred from that of the state curriculum guidelines, the TEKS for Social Studies (p. B-17). It however seems that the goal is fairly consistent with constructivist viewpoint on human learning. Her perspective on learning, in fact, was very similar to that of the constructivists (Fosnot, 1996), which views learning basically as learners' self-regulatory process actively constructing their own knowledge applying existing knowledge in their minds to new information. In several times for the interviewing, Ms. Brady emphasized students' active role in their learning. For one typical example, when she mentioned whole class debate as one type of teaching strategy, she clearly delineated her perspective on learning, noting that debating "forces them to make the knowledge their own, to make that event their own, and to speak on their feet" (Interview, 3/22/05, p.5).

The instructional goal of Ms. Brady's movie project typified her general instructional goals to promote history and social studies content learning. The primary

goal of her movie project, by its essence, was to have students richly understand and 'internalize' the content of history and social studies well enough to be able to make something 'creative' and informative by skillfully manipulating relevant materials even if the subsidiary goal was to give students a chance to be exposed to new technology. As many researchers (e.g., Onosko, 1990; Barton & Levstik, 2004) argue, teachers' instructional goals are closely related to the transformation of teachers' classroom practices. Barton and Levistik assert, "Teachers' goals appear to have more impact on practice than their pedagogical content knowledge" (p.258).

The year's movie project was well conceived to achieve Ms. Brady's instructional goals. Although she did not explicitly advocate higher order thinking as her priority goal of history and social studies instruction, the instructional goals of her movie project imply that the project was intended to create learning environment for her students to think 'hard' about their undertakings.

Ms. Brady's instructional goal for the movie project also reflected her conception of higher order thinking. Her conception of higher order thinking was quite elaborate and detailed. Based on Bloom's Taxonomy of the Cognitive Domain, she recognized various dimensions of higher order thinking. Teachers' well-defined conception of thinking plays a critical role creating congenial social studies classroom environment for thoughtful learning (Onosko, 1989). Ms. Brady's notion of higher order thinking was, by its very nature, consistent with those of Newmann (1990a), which this study adopted. When she referred to GT classes, the highest order thinking was promoted by having students involved in classroom activities that result in their coming up with their own problems, tacking them by searching for necessary information, and arriving at their own conclusions.

In particular, in the year's movie project, students were offered ample opportunity to engage in a history study during which they had to reach their own decision as to which topic should be addressed and what methods were the most appropriate to present their ideas. They also had to examine a variety of first-hand material and primary sources using technology and eventually create convincing accounts on their topics in general. The movie project, consequently, realized Ms. Brady's conception of higher order thinking.

Constructivist Teaching Practice with Technology for Thoughtful Classroom Learning

COMPLEX TASKS

The various types of possible projects offered in Ms. Brady's movie project were deliberately designed to motivate students to work hard. Research (e.g., Stevenson, 1990) has long revealed that in order to help students engage in their class assignments, the tasks they undertake should be intrinsically interesting. For this purpose, Ms. Brady provided the different methods, which could be stimulating, from which each group could choose to present their collective ideas. Because most of the students in the middle grades often enjoy the types of movie-making in their life outside of school, they were effective methods to motivate student to be committed to their project. The selection of the possible projects also reflected Ms. Brady's personal philosophy of classroom instruction, which history teaching should be engaging when she said, "it's really important for kids to have exposure to history in a fun and positive way that gives them an interest in it so that it's not just boring for them" (Interview, 3/22/05, p.1).

The different type of projects also provided students a unique and perfect opportunity to 'apply' the knowledge that they acquired through their research in diverse and authentic contexts. The task of applying knowledge in authentic contexts through the projects' methods, such as an info-mercial and a game show, required students to analyze and interpret historical materials, and to 'construct' their own ideas, rather than to merely report discrete factual information. By including such methods in the movie project Ms. Brady could actualize her goal to implement the different forms of higher order thinking that she conceptualized in her history teaching.

An important element of the movie project was that students had wide latitude in deciding what they wanted to do. In particular, the multiple choices of projects and topics that were given to students in undertaking their projects were one of the most important factors that made Ms. Brady's history classroom constructivist learning environment. In traditional social studies classrooms, the content of humanities and social sciences is broken into small increments and they are presented part-to-whole in an organized fashion without giving students freedom of choice. She, however, did not 'dispense knowledge' to her students; instead, she provided them with opportunities and incentives to increase their own knowledge, as her perspective on learning indicated. Facing the multiple choices of projects and topics, students were able to elicit their current ideas and experiences when they made decision as to which one was best for their group projects (Windschitl, 2002).

In Ms. Brady's technology based projects including the movie project, students explored a few historical or current issues and events in great depth instead of a large number of topics superficially. During the movie project, particularly, she carefully selected several important aspects of the American Civil War as topics for the project. Students were, as Ms. Brady mentioned, immersed to "get into the depths of the

knowledge and the intricacies of the event or the topic" (Interview, 3/22/05, p.7) throughout the project. In fact, broad coverage of subject content, according to constructivists, prevents students from engaging in given issues deeply enough to generate meaningful understandings of ideas or topics. In-depth study is hence regarded as the prominent approach to promote children's higher order thinking. The topics in the movie project were also cognitively-challenging and provocative. The challenging academic tasks were vital for students to be engaged in their works and to think deeply (Stevenson, 1990).

In the movie project, Ms. Brady offered diverse raw materials and historical primary sources to her students. Recall that she posted 50 websites readily available to students on the school server, linked the topics that students were supposed to address. Students, consequently, had ample opportunity to manipulate considerable pieces of information by searching, analyzing, interpreting, synthesizing, and writing accounts that produced new understandings about topics under study. These types of classroom activities, as I previously mentioned, are strongly advocated as 'inquiry-driven learning' by constructivist educators (e.g., Krajcik et al., 1998; VanSledright, 2002). For the promotion of higher order thinking, it is an important instructional approach in social studies classrooms (Newmann, 1996).

Overall, the tasks that students accomplished in the project required "challenge and expanded use of mind" (Newmann, 1990a, p.44). In other words, in order to complete their projects, students had to tackle several complex tasks, such as establishing their own set of grading criteria on a rubric, writing a detailed and original movie script, brainstorming and capturing all the ideas on a storyboard, acting the roles of historical characters, shooting film footage, and eventually producing effective and appealing movies by editing them. They were not being performed "through routine application of

previously learned knowledge" (p.44). In each stage of the project, indeed, students undertook activities "that [in some cases] embody value-commitments and require the sensitive use of a variety of intellectual resources in the exercise of good judgment" (Bailin et al., 1999b, p. 298).

COLLABORATIVE ACTIVITIES

One of the most prominent features of Ms. Brady's movie project was that students worked in small groups throughout; she also worked closely with each project group. The classroom interaction among the individuals made the classroom/lab a completely collaborative learning environment. Cooperative work among peers and between a teacher and students, according to constructivist viewpoint, is regarded as an important classroom activity for thoughtful student learning (Gredler, 1997; Schunk, 2000).

Overall, from my direct observations, all six groups worked fairly well in their cooperative groups from the beginning to the end, from selecting a topic and a type of project to editing the movie. Students were willing to help their peers whenever they were asked. Although there was sometimes inevitable meandering on about subjects having nothing to do with their projects, there was neither bickering nor exclusion observed. The success of this collaborative learning might be due in part to the random grouping which Ms. Brady instituted at the beginning of the class.

Specifically, two groups' discussions, Michael's and Peter's, from which I cited at length, demonstrated how students became actively involved in their work. In the second day of the movie project, in cooperative nature, Michael's group spent most of the class time on their computers searching their topic and finding related materials to be included in their scripts (Observation, 4/26/05, pp.3-4, 5-6). On the third day, Peter's

group also engaged in an intensive group discussion while developing their script on the computer (Observation, 4/27/05, pp. 3-5, 3-6). These are two good examples of how students benefited from small peer group discourse. Through the discourses, students made "[their] ideas explicit, shared [their] ideas publicly, and co-constructed knowledge with others" (Windschitl, 2002, p. 146).

In addition to the cooperative work among students, there was also shared activity between Ms. Brady and her students. Classroom activities were largely scaffolded, enabling students to solve various problems they faced doing the movie project that were beyond their efforts. She engaged in interactive dialogues with students in small groups, which is touted by the constructivist perspective as 'reciprocal teaching' (Gredler, 1997). During every stage of the movie project, Ms. Brady consistently assisted students as they progressed in their work. Particularly, as I cited extensively, in the stage of writing movie scripts and conversing with students in each group Ms. Brady carefully reviewed their scripts and gave detailed comments on them. Writing the script was, in fact, the most important task among all the steps of the movie project. In this step, students desperately needed her guidance and spent more than a week finishing their scripts.

ADEQUATE GUIDANCE

It is absolutely clear that Ms. Brady's classroom instruction in the movie project was not characterized by that of a traditional classroom, which is transmitting the detailed factual information of subject content. On the contrary, from the constructivist perspective, she set the stage for her students' own project by offering a rough road map and providing the various raw materials. She then guided their learning activities and supported their efforts to deal with the topics they chose. Clearly, lecture and recitation

was of limited use in her classroom/lab during the project. She rarely delivered lectures and only when introduced new project assignments at the beginning of the classes, like explaining how to design a rubric. Most of the time, students worked together in their peer groups to complete each element of the project.

From my direct observations, in order to provide guidance on students' own group work there existed two different types of social interaction between Ms. Brady and her students. The first type of interaction was that she reviewed students' work through small group discussion and gave critical comments on it. This type of interaction was particularly noticeable when she checked students' scripts at the end of the first week of the project. Writing a script, in fact, was the single most important factor and one on which the rest of the project depended. As for students' history learning, it also seemed very important because they had to incorporate all of the ideas from their research on a topic into their scripts. Ms. Brady thus carefully examined all of the six group's scripts over a period of two class sessions.

The other way that Ms. Brady interacted with students frequently to provide guidance was one-on-one discussion with them. Students approached her for her expert advice individually whenever they encountered difficulty doing their work. Throughout the movie project, she was very busy answering a number of questions that students asked, whether or not they were issues related to the content of history, the American Civil War or the technical problems of how to use technological tools, such as a digital camcorder or Movie Maker.

Ms. Brady was not 'an autocratic knower' as in a traditional social studies classroom, who strictly controlled the subject of study in order that students would learn what she knew. She admitted, "[student]'re not like… [I] must know everything… I'll never be that kind of teacher, because I can't know everything" (Interview, 3/22/05,

p.11). During the movie project, on several occasions she openly admitted that she was not the only authority on knowledge of what they were studying. For example, when she checked the script of Michael's group, she did not seem to know a particular historical figure's name, which the students wanted to include in their script. She also asked students about "a mussel loading rifle" because she did not know exactly what it was called at the time (Observation, 4/29/05, pp. 8-9). She adopted a facilitator's stance by which students retained the ownership of their learning throughout the project.

Ms. Brady was a model of thoughtfulness in that she showed appreciation for students' idea and alternative approaches to undertaking the movie project as long as they were reasonable and feasible (Newmann, 1990b). For example, when Linda's group wanted to produce an info-mercial about a new jacket technology, Ms. Brady allowed them to choose it as their topic for their info-mercial even though it was not listed as a possible topic on the project description handout. The jacket was not a technological innovation during the Civil War period. Ms. Brady also made her own thinking process explicit to her students and encouraged them to do the same through the whole class discussion. In the first day of the project, for example, she explained students what the rubric was and how to make it through a long whole class conversation with them. Teacher modeling is one of the distinctive characteristics in a constructivist classroom (Windschitl, 2002).

ASSESSMENT EMBEDDED IN LEARNING ACTIVITIES

The way that Ms. Brady assessed her students' performance in their projects made her classroom teaching quite distinct from that of traditional social studies classrooms. Although the various possible products in the movie project were not originally intended for the purpose of assessment, they well served as a model for open-

ended performance tasks. They provided students a perfect opportunity to demonstrate and communicate their understandings of the particular aspects of American Civil War.

From the constructivist point of view, assessment is an integral part of students' learning (Wiggins & McTighe, 2000). Ms. Brady's assessment method was complex, interpretive, and 'embedded' in students' learning activities. The assessment was geared to better enhance students' understanding of the topics or issues under study rather than identify 'right answers' to pre-determined questions that are devoid of meaningful context.

Specifically, her students participated actively in determining criteria for assessing their work by designing individual rubrics. Performance tasks, in fact, "require well-designed, flexible rubrics for evaluation" (Windschitl, 2002, p.148). Windschitl further writes, "Designing these rubrics with students makes explicit what is valued in the learning process and how evidentiary criteria are linked to these values" (p. 148). Ms. Brady's use of the rubric was, in this sense, a model of the constructivist classroom assessment. Designing rubrics on their own, students retained greater ownership of their work throughout the movie project.

For Ms. Brady, one of the purposes of student-designed rubrics was to have students understand "what is expected of them in a very up close way" (Interview, 5/22/05, p.4). However, during the movie project I noticed that some of the students sometimes failed to be aware of the requirements described in their rubrics and thus had to be reminded to include the required items, especially primary sources, in their movie scripts.

The other purpose of having students design their own rubrics was to prevent classroom tensions that might result from arbitrary standards. Ms. Brady pointed out the issue when she stated, when students design rubrics on their own, "there's not this

argument about; [they say] “Well, I didn’t know that I had to do that” (Interview, 5/22/05, p.4). The assessment strategy worked well during the movie project because there were no such arguments about the expectation that was imposed on students.

TECHNOLOGY AS A CATALYST FOR THOUGHTFUL LEARNING

The various technologies which Ms. Brady employed in the movie project, contributed substantially to the creation of a constructivist classroom environment. In the project, first of all, technology was embraced as a tool for inquiry. In the early stage of the project, students used information and communication technology (ICT) to conduct research into historical issues or events related to the American Civil War. In order to write detailed movie scripts, students engaged in computer-based activities to collect, analyze, interpret, and organize a variety of primary sources, such as letters, diaries, pictures, and music, relevant to the topics they chose. They explored a number of authentic web resources that Ms. Brady provided.

Ms. Brady guided students’ research by limiting the websites they could visit. Undertaking their research on computers, students were allowed to refer to only the web links that she prepared deliberately. From previous experience, she knew that students had a tendency to collect data that was most easily accessible via Internet searching tools. I noticed, from my direct observation in the lab, some of students had such a tendency. Prior studies reported that this is one of the well-known challenges that teachers encountered when they used the Internet as an inquiry tool (Doolittle & Hicks, 2003). There were also other good reasons to limit websites. One of them was related to the authenticity of online resources. The other reason was concern over Internet safety.

Meanwhile, as I have already described, currently many history educators (e.g., Barton & Levstik, 2003; VanSledright, 2004) urge history teachers to foster a child’s

historical thinking by engaging him/her in inquiry-driven activities to construct his/her own historical understandings. In this regard, Ms. Brady's use of Internet technology is consistent with the open, inquiry-based approach to history teaching advocated by them. She provided students with authentic historical materials and supported authentic history inquiry, which are "two equally important components" for the meaningful use of technology in history classroom (Doolittle & Hicks, 2003). This kind of inquiry-based history study could not be carried out within the confines of traditional textbook-driven classrooms.

Throughout the movie project, students were able to co-construct their own historical knowledge by making connections in the situation and events related to it. Particularly, two groups' presentations, 'The Real World: Civil War Leaders' and 'Lives at Civil War Prisons' showed how well students situated specific historical data in the wider context of historical issues by synthesizing them into complex story lines. Situating knowledge in authentic learning contexts is one of the important characteristics of thoughtful, inquiry-based social studies classrooms (Saye & Brush, 2006). During the filming and editing of the movies, students were able to acquire an in-depth understanding of different aspects of American Civil War through concrete, contextually meaningful hands-on experience, rather than "decontextualized skill-building materials" (Salomon & Almog, 1998). Overall, the movie-making technology that Ms. Brady implemented in the project facilitated students' acquisition of in-depth understanding of historical knowledge in meaningful context.

The Challenge of Integrating Technology into Classroom Teaching

Meanwhile, by engaging in the movie project, Ms. Brady overcame several formidable hurdles. Technology based, in-depth study necessarily entails a large amount of time to complete. Before the movie project started, Ms. Brady mentioned that time is a key issue in her technology based projects. Time "was for me *the only* problem with technology," (Italics added) (Interview, 3/22/05, p.7) she stated. Students, in fact, engaged in long, sustained study into the topics they chose. They spent a total 14 days of classes, not including two-day's lab presentations, undertaking the project over a 4 week span of time. During this time period, they inquired into the topics systematically with substantial coherence, specifically in designing a rubric, researching a topic, and writing a script. It took approximately a week to complete each of the three most important parts of the project, writing a script, filming, and editing the movies.

Nevertheless, some of the groups were not able to complete their project according to the original plan Ms. Brady developed. Specifically, only 3 groups reached the final stage of the project, which is editing work of the movies. There existed, as clearly noticed in the filming and editing stages, logistical obstacles to the progress of the project. If they had had a sufficient number of camcorders to film and disk spaces to store the huge movie files, the filming and editing work would have been much more efficient. Thus, students' projects would have been more productive in expressing their ideas of how they had addressed their topics.

Lagged completion of students' scripts also contributed to the project being behind Ms. Brady's schedule. Although most of the students in her classroom were academically high performers (recall 60 percent of them were identified as GT) it was understandable because the topics chosen by the students could not be dealt with

sufficiently through the routine application of knowledge about the Civil War they had learned previously during the semester. Students were required to deploy challenges and expand the use of their minds by researching deeply into topics. Ms. Brady might have too high expectations that her students could effectively deal with the topics within the time frame she had set up because from the interviews, I learned that she was very proud of her students' high motivation.

Finding sufficient time to design the projects was another hurdle. Compared with other non-technology based lessons, Ms. Brady spent much more time planning the movie project because she incorporated various technologies and implemented in-depth study on a few historical topics. This research confirms that lack of time is a major barrier to teachers' attempts to promote higher order thinking through technology-based inquiry lessons (Ehman, Glenn, Johnson, and White, 1992; Saye & Brush, 2004). Closely related to the time constraint, another major hurdle that Ms. Brady faced was that of accountability expectations dominated by student testing and public school ranking (Cornbleth, 2001).

Ms. Brady was also confronted with the issues of technical support. Particularly, in the stage of editing movies, she faced a constant struggle for locating disk storage to save the large-sized movie files. I noticed that the lack of storage space was the biggest obstacle in the way of students completing their movie projects. It also made the management of students' classroom activities difficult for Ms. Brady. She reflected her frustration after the project, "the burden of uploading files on me was that I couldn't watch the rest of the class as much, so if I had another teacher with me, that'd be great" (Interview, 5/24/05, p. 7). The storage issues imply that adopting 'new' technology in classroom teaching poses different demands on teachers, which would not be present in

lecture-driven classrooms. In Ms. Brady's case, it seemed that she needed prompt on-site technical support to resolve the storage problem.

In spite of those obstacles mentioned above, Ms. Brady's movie project demonstrated how different types of technology could be integrated and adopted to transform middle school social studies classroom into constructivist student-centered learning environment in which students engage in higher order learning activities through personally meaningful inquiry. In the movie project, unlike most classrooms reported by Cuban (2001) that used technology as a peripheral to primary instructional tasks, technology was not an add-on but an integral component of teaching and learning. Technologies, in other words, were integrated into daily classroom activities to create a student-centered learning environment. As seen in the students' presentation at the end of the project, as a whole, Ms. Brady's teaching history with the combination of different technologies showed, if not definitively, a promising result for thoughtful student learning in social studies classrooms.

Making the Study Credible

How credible are the results of the study? By what criteria can it be judged? I believe that the credibility of a qualitative study, including a case study, hinges on two distinct elements: the trustworthiness of data collected, trustworthiness of data analysis and interpretation. Unlike quantitative research, in a qualitative (case) study, the credibility is not achieved by thoroughly complying with the procedure of research methods, but by "using evidence collected during the research itself" (Maxwell, 2005, p.107). Hence, as Seidman (1998) said, "what [is] needed," when judging the quality and value of qualitative studies, is "not a formulaic approaches to enhancing either validity or

trustworthiness but understanding of and respect for the issues that underlie those terms" (p. 20). Here, I address several those issues particularly relevant to my study.

TRUSTWORTHINESS OF DATA COLLECTED

Literature on qualitative research claims that sustained observations and intensive interviews increase the chance to gather rich, complete, and trustworthy data about the individuals and events being studied. The length of time spent in the field, however according to Patton (2002), depends on the purpose of the study and the questions being asked. I spent a long enough time in the school to fulfill my research purpose, which was to see how technology transformed Ms. Brady's social studies classroom teaching and learning. Because her movie project was very information-rich, observing it in depth and detail provided an ample opportunity to understand and illuminate the important aspect of her classroom teaching with technology. Consequently, by observing it directly I was able to obtain the most critical data to answer the major parts of my research questions, which were how she used technology into her classroom lessons, how her students engaged their learning in the technology-rich classroom environment, and then the impact of the technology on her students' higher order thinking.

In addition to the length of observation time, time spent before and during interviewing is also an important factor to obtain good quality of data from the interviewee. Other than interview techniques, building a sound relationship with participants, which is the most important aspect of interviewing research, requires a certain amount of time spent with them (Seidman, 1998). The goal of the interviewing relationship is to "keep *enough distance* to allow the participants to fashion his or her

responses as independently as possible" (Italics added) (p. 80). Both too much and too little rapport, however, would be a threat to trustworthy data. As I mentioned earlier, before I undertook the first interview, I spent time with the school principal and my informant to discuss my research project, including the responsibilities and the rights of researcher and participant. I noticed that at the time she was a little nervous, asking for a copy of the informed consent form, which I provided. But eventually she showed confidence in my study at the end of the contact visit.

I made contact with the teacher via email and made the contact visit in person because "building the [sound] interview relationship begins the moment the potential participant hears of the study" (p. 39). The contact visit allowed me to become familiar with the school setting, as I had not been there before. Through the contact visit, I was able to initiate an appropriate rapport with the teacher for the coming interviews. Afterwards, I used email correspondence to make follow-up arrangements and maintain a connection with my informant throughout the study. The number of emails reached approximately 15 until the end of the study. The email communication helped me develop and maintain the needed degree of rapport with the teacher.

I spent a fairly large amount of time doing the interviews, almost three hours in the first three interviews and an additional 20 minutes in the final follow-up interview. Originally, I proposed three separate 90 minute interviews with the teacher, as Seidman (1998) recommended, but due to the teacher's busy schedule in the spring semester I was able to interview her for only about an hour between her class sessions for each interview. Consequently, we were not able to ask all of the questions that I prepared in my interview guides. However, the interviews covered all of the essential topics according to my research purpose.

Besides the prolonged engagement with the research sites and the researched, another key factor to enhance the trustworthiness of data collected is considering the effects of the researcher on the observed and the interviewees, which is called 'reactivity' (Patton, 2002; Maxwell, 2005). On the one hand, the presence of the researcher in the settings may create a "halo effect" that the participants perform in an exemplary fashion and are motivated to show off. On the other hand, the researcher's presence "may create so much tension and anxiety that performances are below par" (Patton, 2002, pp.567-568).

In my study, however, I noticed that the observer effects were not a serious threat to the trustworthiness of the observational data. First of all, it seemed to me that the participants were not afraid of being video-recorded. Actually, the teacher told me in the other projects, she sometimes video-recorded students' activities. I think that that was part of the reason why the participants were all familiar with being video-recorded. Another reason may come from being informed of the purpose of the study and given a participants' consent form. As I mentioned in the methodology chapter, before I observed the classroom/lab, the teacher and students were all assured of their privacy and confidentiality through the informed consent form and the written consent for parent and students.

Meanwhile, I noticed from the interviews with the teacher that in the movie project, students behaved in a more responsible manner compared to previous classroom projects. For example, the teacher told me in the third interview, "[I] didn't have any problem with getting along or fighting about different things, so that was good 'cause you *almost always*, in other classrooms. I had people fighting about "X" and "Y" can't get along, so that worked out well" (Italics added) (Interview, 5/24/05, p.5). Consequently, as most qualitative researchers (Glesne, 1999; Maxwell, 2005) admit, I found out that it was

impossible and inappropriate to eliminate the effect of my presence in the classroom/lab on the teacher's and especially students' behaviors.

The influence of the interviewers on the interviewees is more powerful and inescapable than those of observations because, as Seidman (1998) said, "interviewers are a part of the interviewing picture" (p.16). Yet, it is still the interviewers' job to monitor the distortion of data derived from the effects the interviewer has on the participants. For interviews, the reactivity can be directed toward answering a question, how do I know what the interviewees were telling me was not a lie but true?

In the first place, I noticed, in the interviews I had done, that there was a lot of concentration in the teacher's voice and good diction. For example, in the first interview, when I asked her about the social studies topics conducive to the use of technology, she said, "Uh uh. I've never thought about it." And then for couple of minutes, she talked about how the state test was annoying. After that, she said, "Now, I guess there are certain ones that I've used more than others. But, um, gosh, that's a tough one." She requested me to ask the question again so that she "maybe draws upon something." She was then able to tell me the social studies topics she had frequently used in the past technology-based projects.

She also seemed quite candid with me. During the first interview, when my supervising professor asked her about the pressure of the state's required testing on her teaching, she replied:

> I feel, I'm letting it affect me less this year, if you believe that. 2 years ago, it was wretched, wretched. I mean, you know, just sick. Getting closer and closer, just getting sicker and sicker because they changed the test 2 years ago, and made it way harder. No one knew what to expect, no one knew what was going to happen…. We've done well the last 2 years, and so we swore to ourselves

> that we weren't going to let it affect us this much this year. And it really hasn't, until recently. So that's good. It's better, if you would believe it, it's better. I probably would not have agreed to this 2 years ago. I mean, I can't do it, nope, nope, nope. (Interview, 3/25/05, p.8)

The teacher's frank voice was consistent throughout each of the four interviews. At the end of the final follow-up interview, reflecting on the year's movie project, the teacher told me:

> I think my project is probably cutting-edge but there is not support for it. I had no support…. So it makes it really hard to do. In fact, I'm not sure I'm going to do it this year, unless I have, you know, more FireWire cards, more storage space, more cameras, you know. Because when you are one person, trying to manage thirty kids and teach them something about Civil War and teach them something about technology, I think most teachers would be no, why bother, if I'm not going to have the support, then I'm not going to do this. I still think that probably my school, my district, is probably way ahead of the curve, way on top of the technology development and use. (Interview, 2/8/06, p.3)

So far, I have discussed, in terms of long-term involvement and reactivity, how I assessed the potential threats to trustworthiness of data regarding the credibility of the study. Finally, I address here the triangulation strategy used to enhance the trustworthiness of the data collected (Patton, 2002; Maxwell, 2005). In order to provide a more complete and accurate account of the teacher's use of technology for thoughtful student learning, as I described in the methodology chapter, I employed a variety of data sources and three different methods of data collection.

I obtained narrative data from a variety of sources using methods of data-gathering dominant in qualitative research: observation, interviewing, and document

collection. The two major sources of data were the transcripts of audio tapes of four interviews and the transcripts of video tapes of 14 classroom/lab observations. Other sources of data included field notes, various written materials produced by the teacher and her students for the movie project, and public records about the school. Triangulating various documents with lengthy observation and intensive interviews, I was able to acquire rich data, "data that are detailed and varied enough that they provide a full and revealing picture of" the teacher's classroom teaching with technology (Maxwell, 2005, p.110).

I videotaped each classroom session of the movie project. I also tape-recorded all of the four interviews with the teacher. Two persons helped me transcribe the entire interview and observation tapes. When I asked to transcribe the tapes, I gave them an explicit written instruction concerning the transcribing (Seidman, 1998). The audio and video tapes were transcribed verbatim as fully as possible. However, I did not ask the transcribers to make note of all the nonverbal signals, such as pauses, sighs, and laughs because I planned to listen to the audio tapes and to watch the video tapes myself during data analysis to verify the accuracy of the transcriptions. I asked the teacher/participant to review part of the transcripts and make corrections because I found that there were some inaudible sections due to the low quality of the sound system in the computer lab at the school.

Although the methods of triangulation were comprehensive, triangulation of sources within qualitative methods was not complete in my study. I did not include student interviews as a source of data. Part of the reason was that the data I collected were substantial enough to understand the teacher's classroom use of technology because the focus of my study was to investigate how her teaching was transformed into a student-centered constructivist approach during which her students might engage in

thoughtful learning as she integrated various technologies. Another reason for the exclusion was that it was not technically feasible to include them in my study because of time and resources. Yet, if student interviews were included I might be able to present more comprehensive accounts of how her students perceived the role of technology in their social studies learning.

Another possible limitation of the study, in terms of 'sources triangulation', was that I did not include the teachers' reflective journal and students' questionnaires. Some qualitative case studies on classroom teaching include both or either of them. Due to her busy schedule in the semester, however, I was not able to ask the teacher to write her daily reflective journals while she conducted the movie project. The students' questionnaires were also not involved for the same reason as I could not use the student interviews.

TRUSTWORTHINESS OF DATA ANALYSIS AND INTERPRETATION

In any qualitative research, it is impossible to eliminate the effect of our personal bias (sometimes called subjectivity), such as our own theories, preconceptions, values, expectations, and ignorance, on the conduct of the study (Glesne, 1999; Patton, 2002, Maxwell, 2005). As Glesne noted, therefore, the issue is "how subjectivity, once recognized, can be monitored for more [credible] research and how subjectivity, in itself, can contribute to research" (p.105). Hence, the qualitative researchers should take account of their own bias to increase the trustworthiness of data analysis and interpretation. The personal bias is much more critical challenge in analyzing and interpreting data than in collecting data.

In order to avoid the possible adverse consequences derived from my personal bias in data analysis and interpretation, I relied on two common strategies employed to

enhance the credibility of qualitative research: analyst triangulation and expert audit review (Patton, 2002). Upon writing my initial draft of the portrait, I asked the person who transcribed the entire video-recording and part of the audio-recordings of the study to review and give me comments on it. She was a doctoral student and Journalism major in my school, the University of Texas at Austin. Because she watched all of the sessions of the movie project and listened to the interview recordings, I expected her to provide me useful feedback. Carefully reading the draft, she pointed out a number of areas in the writing not understandable to her.

The following are two examples of her comments she gave me. In a place, she commented, “Was it a girl playing this character? It gets a bit confusing. I went ahead and changed the pronouns and tried to make it understandable that is a girl playing a guy, but you might want to review this section to see it makes sense to you.” And in another session, she said, “If this topic was not based of occurrences of the Civil War, were these actual primary sources? They may be, but if they are not, perhaps you’d like to add something here to say that.”

After revising the first draft according to the transcriber’s comment, I asked my supervising professor to review my second draft of the portrait. She watched the entire 14 video-recordings and carefully examined my analysis and interpretation. In fact, reading the first draft, she pointed out that the weakest point in my portrait, at the time, was the perceived low level of engagement because it had an apparent lack of the narrative form and coherence.

Closing Remarks

By carefully reading and deliberating on Ms. Brady's story of teaching with technology, practitioners would gain some insight into how technology might be utilized effectively for active student learning in social studies classrooms. From her unique story, as I mentioned previously, they would vicariously experience the happenings in Ms. Brady's classroom teaching and draw their own conclusions which might be different from mine. I believe that the readers hold, as Stake (2000) suggested, "A certain *cognitive flexibility*, the readiness to assemble a situation-relative schema from the knowledge fragments of a new encounter" (Italics original) (p.443). For this purpose, I provided, to a certain degree, sufficient descriptive narrative about Ms. Brady's classroom teaching with technology.

In fact, social studies educators (Saye & Brush, 2006) indicate that the absence of a good teaching model for the meaningful, effective use of technology in social studies classrooms is a disincentive for teachers to accept constructivist and student-centered approaches to teaching social studies with technology. Ms. Brady's movie project, in this regard, would serve as a good model for other teachers who want to incorporate modern technology into their social studies teaching for the promotion of children's higher order thinking, not just because it achieved some success but also because it revealed potential pitfalls. Those who are interested in the integration of technology into social studies teaching would learn from her teaching story about the real prospect of technology for thought learning. At the same time, they could grasp an opportunity to ponder how they would meet the challenges that she faced in an attempt to adopt technology for higher order learning.

Since classroom teaching is a complex professional practice in which a number of contextual factors are involved and interacted in the course of its action, the findings of the study would be best understood in the particular context of the school. First of all, most of the students in Ms. Brady's social studies classroom came from relatively privileged socioeconomic backgrounds. They had high academic abilities in more than a particular subject area and a high level of motivation. They also might have, to a certain degree, previous experience of handling those technologies employed in the movie project out of school. These exceptional circumstances in turn suggest further lines of research that investigate other social studies classrooms whose populations are different from that of Ms. Brady classroom, specifically that the majority of students have low academic performance and motivation: What can be expected for those students when technology-based social studies projects like the movie project is practiced? What different kind of impediments to the promotion of higher order thinking might teachers encounter in implementing the project?

In addition to the distinctive characteristics of students, the findings of this study also should be understood in the particular context of technology infrastructure in the school. Ms. Brady's movie project required that the computer labs have a fairly high quality of equipment and software. It also needed a high-speed local area network (LAN) to access to the websites that provided primary sources on the Internet. Furthermore, in order to film the movies, students needed modern digital camcorders. At the present time, all of the technologies may not available in the vast majority of American middle schools. It is consequently impossible to expect the movie project to be undertaken widely. However, as schools more readily accept new hardware and software and are networked rapidly, the likelihood of implementing the ideas and teaching strategies highlighted by Ms. Brady's movie project will increase.

In fact, currently there is no existing research available on the instructional values of new digital movie-making technologies in the field of social studies education. More research is needed into the ways in which such technologies might contribute to the promotion of higher order thinking in social studies classrooms.

Appendices

Appendix A

A Site Letter

Address line 1
Address line 2
City, State/Province
Postal Code
Email address.com

August 5, 2004

Dr. Lisa Leiden, Ph.D.
Director, Office of Research Support and Compliance
P.O. Box 7426 Campus Mail
Austin, TX 78713
Lisa.leiden@mail.utexas.edu

Dear Dr. Leiden:

The purpose of this letter is to grant Mr. Yung-Min Bae, a graduate student at The University of Texas at Austin permission to conduct research at the [Name of school].

The project, "The Impact of Computer Technology on a Middle School Social Studies Teacher's Thinking and Teaching Regarding the Promotion of Students' Higher Order Thinking" entails interviews with a teacher, classroom observations, and document collection.

Between January 2005 and May 2005, Mr. Bae will visit the [Name of school] about twice a week to observe [Name of teacher]'s classroom. He will observe and video-record her normal class sessions approximately twice a week without any interruption of her classroom activities and without any interaction with her and her students. He will interview the teacher three times during the research time period. The first interview will take place in the beginning of this research. The second and third interviews will take place at mid-point and at the end of the study period. Each interview will take about an hour and half. All three interviews will be voice-recorded. The interviews sites will be [name of school] or another site convenient for her. Mr. Bae will also request for the teacher to provide him documents that were used for planning the curriculum and teaching her classes. The documents He will collect include the course syllabus, teacher lesson plans, student readings and worksheets, student written work, and the school district's social studies curriculum documents. In addition, He will communicate with the

teacher via electronic mail (email) periodically during the study. The email communication will be used to initiate and maintain a connection with her, and to make interview follow-ups.

The purpose of this study is to investigate how the use of emerging computer technology influences a middle school social studies teacher's conceptual understanding and practical strategy for teaching higher order thinking in her classroom. Mr. Bae will explore the teacher's personal experience in integrating computer technology into higher order thinking-centered teaching and learning.

[Name of school] was selected because it has an exemplary social studies classroom where the teacher uses computer technology frequently and emphasizes higher order thinking. The teacher was recommended by her supervisor as one who would offer insight into the use of computer technology in her social studies classroom.

[describe your relationship to organization].

I, William Bechtol do hereby grant permission for Mr. Yung-Min Bae to conduct his dissertation study at the [Name of school].

Sincerely,

Appendix B

IRB# _____
_

Informed Consent to Participate in Research

The University of Texas at Austin

You are being asked to participate in a research study. This form provides you with information about the study. The Principal Investigator (the person in charge of this research) or his/her representative will also describe this study to you and answer all of your questions. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.

Title of Research Study:

The Impact of Computer Technology on a Middle School Social Studies Teacher's Thinking and Teaching Regarding the Promotion of Students' Higher Order Thinking

Principal Investigator(s) (include faculty sponsor), UT affiliation, and Telephone Number(s):

My name is Yung-Min Bae. I am a doctoral student in the Department of Curriculum and Instruction at The University of Texas at Austin. You can reach me via telephone at (512) 693-2399 or via email at ymbae@mail.utexas.edu. Sherry Field is my supervising professor, and she can be reached at (512) 232-3346.

Funding source: N/A

What is the purpose of this study?

The purpose of my study is to investigate how the use of emerging computer technology influences a middle school social studies teacher's conceptual understanding and practical strategy for teaching higher order thinking in her classroom. I am interested in your personal experience in integrating computer technology into higher order thinking-centered teaching and learning. This study is conducted as a partial fulfillment of the requirements of the degree of Doctor of Philosophy in Education.

What will be done if you take part in this research study?

Between January 2005 and May 2005, I will visit your school about twice a week to observe your classroom instruction. I will observe and video-record your normal class sessions approximately twice a week without any interruption of your classroom activities and without any interaction with you or your students. I will interview you three times during the time period. The first interview will take place in the beginning of this research. The second and third interviews will take place at mid-point and the end of the study period. Each interview will take about an hour and half. All three interviews will be voice-recorded. The interviews site will be your school or other site convenient for you. I will also request that you provide me with documents you use for planning curriculum and teaching your classes. The documents I will collect include the course syllabus, teacher lesson plans, student readings and worksheets, student written work, the school district's social studies curriculum documents. In addition, I will communicate with you via electronic mail (email). The email communication will be served to initiate and maintain a connection with you, and to make interview follow-ups.

What are the possible discomforts and risks?

No discomforts or risks are foreseen.

What are the possible benefits to you or to others?

I believe that your participation will help teachers who want to foster students' higher order thinking in social studies classes better understand how computer technology should be employed meaningfully. The research also likely will have implications for policymakers who want to promote students' higher order thinking through computer technology.

If you choose to take part in this study, will it cost you anything?

You are requested to spend about 4 hours and a half for three interviews. In addition, you may also spend some time to reply to my emails weekly. Participation in this study will have no monetary reward.

Will you receive compensation for your participation in this study?
What if you are injured because of the study?

There is no compensation for your participation in this study. This study does not involve any physical risk.

If you do not want to take part in this study, what other options are available to you?

Participation in this study is entirely voluntary. You are free to refuse to be in the study, and your refusal will not influence current or future relationships with The University of Texas at Austin and Eanes Independent School District.

How can you withdraw from this research study and who should I call if I have questions?

If you wish to stop your participation in this research study for any reason, you should contact: Yung-Min Bae at (512) 693-2399. You are free to withdraw your consent and stop participation in this research study at any time without penalty or loss of benefits for which you may be entitled. Throughout the study, I will notify you of new information that may become available and that might affect your decision to remain in the study.

In addition, if you have questions about your rights as a research participant, please contact Clarke A. Burnham, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, 512/232-4383.

How will your privacy and the confidentiality of your research records be protected?

Authorized persons from The University of Texas at Austin and the Institutional Review Board have the legal right to review your research records and will protect the confidentiality of those records to the extent permitted by law. If the research project is sponsored then the sponsor also has the legal right to review your research records. Otherwise, your research records will not be released without your consent unless required by law or a court order.

If the results of this research are published or presented at scientific meetings, your identity will not be disclosed.

In order to protect the identity of both you and the school involved in my study, pseudonyms will be assigned during dissemination of my findings. If needed, I will change or make unknown descriptive characteristics of the research site and participant.

You are assured that no one other than specified persons (my dissertation readers) with whom I discuss results and conclusions will know of the specifics of what I see and hear. As I stated above, all three interviews will be audio recorded and several class sessions video recorded. I will code the audio recordings so that no personally identifying information is visible on them. The recordings will be kept in a locked cabinet in my home and they will be heard or viewed only for research purpose by myself and a transcriptionist, and professors supervising the study. They will be retained for possible future analysis.

Will the researchers benefit from your participation in this *study*?

The benefit to the researcher will be a greater understanding of the impact of computer technology on a middle school social studies teacher's thinking and teaching regarding the promotion of students' higher order thinking.

Signatures:

As a representative of this study, I have explained the purpose, the procedures, the benefits, and the risks that are involved in this research study:

Signature and printed name of person obtaining consent **Date**

You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this Form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights.

Printed Name of Subject **Date**

Signature of Subject **Date**

Signature of Principal Investigator **Date**

Appendix C

CONSENT FORM

Title of Project: The Impact of Computer Technology on a Middle School Social Studies Teacher's Thinking and Teaching regarding The Promotion of Students' Higher Order Thinking

Your child is invited to participate, by way of class sessions being videotaped, in a study of a middle school social studies teacher's experience in integrating computer technology into higher order thinking-centered teaching and learning. My name is Yung-min Bae and I am a graduate student at The University of Texas at Austin, Department of Curriculum and Instruction. This study is conducted as a partial fulfillment of the requirements of the degree of Doctor of Philosophy in Education. I am asking for permission to video-record your child's classroom. I expect to have about twenty five participants in the study.

If you allow your child to participate, between January 2005 and May 2005, I will visit your child's school about twice a week to observe his/her teacher's classroom instruction. I will observe and video-record the normal class sessions approximately twice a week without any interruption of the classroom activities and without any interaction with your child. I will not interact with the teacher or students during classroom sessions. If you choose for your child not to participate, he/she will not be video-recorded during class sessions.

Any information that is obtained in connection with this study and that can be identified with your child will remain confidential and will be disclosed only with your permission. His or her responses will not be linked to his or her name or your name in any written or verbal report of this research project. I will not seek access to any school records regarding your child.

Your decision to allow your child to participate will not affect your or his or her present or future relationship with The University of Texas at Austin or [Name of school] in [Name of School District]. If you have any questions about the study, please ask me. If you have any questions later, call me at 512-693-2399. If you have any questions or concerns about your child's participation in this study, call Professor Clarke Burnham, Chair of the University of Texas at Austin Institutional Review Board for the Protection of Human Research Participants at 512-232-4383.

You may keep one copy of this consent form. Please return the other copy to your child's teacher.

You are making a decision about allowing your child to be video-recorded. Your signature below indicates that you have read the information provided above and have decided to allow him or her to participate in the study. If you later decide that you wish to

withdraw your permission for your child to participate in the study, simply tell me. You may discontinue his or her participation at any time.

_____
Printed Name of Child

_____ _____
Signature of Parent(s) or Legal Guardian Date

"I have read the description of the study titled (give title) that is printed above, and I understand what the procedures are and what will happen to me in the study. I have received permission from my parent(s) to participate in the study, and I agree to participate in it. I know that I can quit the study at any time."

_____ _____
Signature of Minor
Date

_____ _____
Signature of Investigator Date

Appendix D

Sample Interview Questions

Interview One & Two

1) What is your experience as a teacher?
2) What is your background and preparation for becoming a teacher?
3) How do you use technology in your classroom?
4) How do you plan for using technology in your classroom?
5) How do you evaluate student work including a technology component?
6) What technology tools do you prefer using in your classroom and why?
7) How do you structure discussion in your class? How do you emphasize higher order thinking?
8) How do you believe that higher order thinking is fostered by the use of technology?
9) Con you elaborate on some of the technology-based projects in which your students have been engaged?
10) What do your students learn from using technology in social studies?
11) What social studies topics do you believe are most conducive to the use of technology?
12) Are there persons who support your use of technology for social studies teaching? If so, how do they support you?
13) Can you give me an overview of your units of instruction for the spring? Which units will be technology rich?

Interview Three

1) Would you describe your school?
2) Would you tell me about your students?
3) What were your instructional goals when you would use computer technology in your teaching?
4) How did you come up the movie project for your teaching?
5) Why did you have students create their own rubric for the movie project?
6) What were the positive aspects of the movie project for student learning in this spring?
7) What were the difficulties you have encountered during the movie project?
8) If you do the movie project next semester again, how could you improve it for better student learning?
9) How has the use of computer technology impacted on your overall social studies teaching ever since the beginning of teaching?
10) Has your teaching philosophy in student learning changed since you started to use computer technology in classroom? If so how?

Interview Four

1) Could you clarify the screen of Web sites for Civil War movie project?
2) Would you provide for me a list of technology objectives--District and personal?
3) Can you provide for me information about the infrastructure of the computer lab?
4) On May 13th, some of the groups revised their rubrics. What were the final rubrics like?
5) How did you evaluate each group's movie project?

Appendix E

Project of Linda's Group: Infomercial about Jacket

Among the six groups, only Linda's did not present their work in class. This group made a relatively short infomercial about 'a jacket'. Unlike the other groups, this group's topic was not an invention that occurred during the Civil War period. All of the other groups that presented info-mercials chose a type of technology invented during the Civil War period. It was a unique point in this group's project, since they did not strictly follow the project guidelines given by the teacher. Although their topic was not specifically listed on the guideline, she allowed Linda's group to use this topic because she thought that it was appropriate for their project.

According to their movie script, the historical background of the first scene was after the Battle of Jonesville, where Confederate General William E. Jones defeated the Union Army. Jonesville was a small town located in the Powell River Valley in Lee County, Virginia. The battle occurred in extremely cold weather, in January of 1864. The battle was referred to, by a man who participated in it, as 'the frozen fight.'

Scene 1

(Two Union soldiers were talking to each other outside the school buildings, next to the trees)

Soldier 1: Dang it, we almost had that battle won!

Soldier 2: Yea, good thing we got away. I don't think I could have handled a prisoner of war camp.

Soldier 1: If it wasn't so cold we could have won. This jacket does nothing for me. I'm freezing.

Soldier 2: Oh, really, my jacket is nice and toasty it has fur on the inside and rainproof material on the outside.

Soldier 1: Oh, really? Do you have another jacket for me?

Soldier 2: Nope, sorry.

Soldier 1: Do you know where I can get it?

Soldier 2: Not in any trading post, only from this special TV offer!

Students wrote this first scene based on the fact that the army was ill-equipped to cope with such horrible wintry weather. In scene two, a British man told the audience about the conditions of the Battle of Jonesville, providing the background for the dialogue on scene one:

Scene 2:

> "These two men just escaped being captured and sent to a Confederate prisoner of war camp. They surrendered at the Battle of Powell River Valley (the frozen fight) and made a daring escape but most likely in vain. This is mainly because of insufficient special winter clothing with the temperature dropping past the zero mark to negative six degrees. Lucky for one of these guys he is wearing a fur filled water proof jacket with nice thermal socks. But unfortunately the other guy is not. 250,152 soldiers died from diseases most likely caused by the harsh temperatures. These deaths could have been prevented only if the Union's commander Colonel W.C. Lemert had requested our foolproof jackets as standard clothing in the war."

In the final scene, two product promoters advertised the jacket, using historical primary sources. In the first half of the scene, directly citing a variety of historical

documents, the students attempted to show vividly the hostile weather environment of the battle fields during the Civil War period.

Scene 3

Promoter 1: During the Civil War one of these jackets would be very useful.

Promoter 2: The weather in battles can be horrible and these jackets are made specifically to make you warm and dry. Here are letters from soldiers who were cold and needed our help.

Promoter 1: (Reading the first letter) O.D. Chester wrote to his sister who lived near Chattahoochee that "we have a fine rain last night that was much needed. I had my oil cloth pitched for a tent but it leaks very badly. I got rather wet but the rain was very hard…" on July 15th, 1864.

Promoter 2: (Reading a diary) Dr. Bacon, a Civil War physician wrote in his diary on Tuesday, January 20th that "Early in the evening the rain begins to fall and now came up a wind storm and wind and rain the night through. [It] is a doleful night. I sleep with Dr. Jacquet in the ambulance. Plenty of blankets, but by morning they were quite heavy with damp. One of my shoes had partly filled with water…At 7 am are moving. My wet shoes make my foot cold but it is too muddy to walk… and then twas cold and the rain [was] still continuing."

Promoter 1: (Reading a newspaper article) In this Daily Missourian newspaper article, Edward Boos wrote that "We were wet, cold and hungry, and a more jaded set of men never existed."

Promoter 2: (Reading the last letter) Our final letter is from James R. Kelly to Mary Kelly in 1861. He wrote, "… This is a dreary wet day, it has been raining all day long so hard that we can't do anything but write to our friends… Most of the time it has been wet and cold, especially at night, a sick man has but little chance for his life here…."

Promoter 1: As you can see, the weather is one of the hardest battles that the Civil War soldiers fought ([A girl] holds up the jacket).

Promoter 2: This jacket is lined with warm, fuzzy fur and the outside is made of rain-resistant material so that you are neither wet nor cold.

Promoter 1: We know that you are suffering because of the terrible, torturing weather and this jacket was made exclusively to make your life better.

Promoter 2: As you travel from Atlanta to Savannah or from Cold Harbor to Petersburg you will be much better off wearing this jacket rather than an old fashioned one.

Promoter 1: If you buy this off this commercial number you will get this jacket for the LOW price of $2.15, not including shipping. (Flash address at bottom of screen)

Promoter 2: BUT WAIT, We have more, if you send us a letter requesting 2 jackets within the next 10 days you will get 2 pair of free snug socks.

Promoter 1: Just like the coat, the socks are made of rain-resistant material lined with warm cozy fur.

Promoter 2: You will never face frostbite again. SO DON'T WAIT , send your letter today!

This group's historical infomercial blended the historical facts and fiction, trying to persuade the audience to buy their imaginary product, the jacket. They created a convincing storyline, according to the historical events and facts of the Civil War, even though they had information that, in certain parts, conflicted with historical records. They selected an authentic setting for the story, and the movie was somewhat artfully folded in historical facts. Through various historical documents, they also attempted to provide accurate information.

Appendix F

Time Frame for the Civil War Movie Project

First Week
First Day (Monday, April 25, 2005) Designing a Rubric
Second Day (Tuesday, April 26, 2005) Researching a Topic
Third Day (Wednesday, April 27) Writing a Script Started
Forth Day (Thursday, April 28) No Observation
Fifth Day (Friday, April 29, 2005): Due for Script Writing

Second Week
Sixth Day (Monday, May 2, 2005) Placing Ideas on a Storyboard
Seventh Day (Tuesday, May 3, 2005) Filming Movies Started
Eighth Day (Wednesday, May 4, 2005)
Ninth Day (Thursday, May 5, 2005) Editing Movies Started
Tenth Day (Friday, May 6, 2005): Due for Filming Movies

Third Week
Eleventh Day (Monday, May 9, 2005)
Twelfth Day (Tuesday, May 10, 2005)
Wednesday and Thursday: No Class Due to Ms. Brady's Pre-AP Training
Thirteenth Day (Friday, May 13, 2005)

Forth Week
Monday and Tuesday: No Class Due to School Field Trip
Fourteenth Day (Wednesday, May 18, 2005): Due for Editing Movies
Fifteenth Day (Thursday, May 19, 2005) Presenting the (Un)Finished Projects Started
Sixteenth Day (Friday, May 20, 2005)

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