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Web-Based Case Studies Versus Text-Based Case Studies: A Comparative Study of Pre-service Teacher Engagement

Brianne Walsh Morettini[a],*; Kimberly Simpson Reddy[b]

[a]Assistant Professor, Ph.D.. Teacher Education, Rowan University, New Jersey, USA.
[b]Elementary Educator, Ph.D. The Key School, Annapolis, Maryland, USA.
*Corresponding author.

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Abstract

The study compares how the format of a text-based case and a web-based case impact students' engagement and learning; it represents an effort to document a comparative study of different formats of cases and their effectiveness in an undergraduate social studies methods teacher education course at UMCP. Participants are pre-service teachers enrolled in an undergraduate teacher education course. Each participant will experience both formats of a case over two course sessions so as to ensure instructional equity across groups. Overall, this study is an effort by the researchers to (a) document students' learning and engagement with written cases and web-based cases and (b) to assess students' own preferences for a case study format in an undergraduate teacher education course.

Key words: Teacher Preparation; Educational case studies; Pre-service teacher engagement

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1. CASE STUDIES AND STUDENT ENGAGEMENT

The purpose of this research is to compare how the format of a text-based case and a web-based case impact participants' engagement with a case study in a pre-service teacher education course. The research is exploratory in nature. It represents an effort to document a comparative study of different formats of pedagogical case studies and their effectiveness in an undergraduate social studies methods teacher education course at a large university. Twenty-two (22) pre-service teachers enrolled in a section of a social studies methods course will serve as the participants. Each participant experiences both formats of a pedagogical case study – web-based and text-based – over two course sessions to ensure instructional equity across groups.

These participants, while also completing all the normal course assignments and attending the lectures, were observed in the context of two of their regularly scheduled meetings of a social studies teaching methods course and were asked to complete an open-ended questionnaire after the presentation of both case studies, which will attempt to measure pre-service teachers' engagement with different formats of case studies. Participants' discussions of the two cases were audio taped and transcribed to serve as a source of data for analysis. Overall, this study is an effort by the researchers to (a) document participants' engagement with written cases and web-based cases and (b) to assess participants' own preferences for a pedagogical case study format in an undergraduate teacher education course.

2. LITERATURE REVIEW

2.1 A Brief History of the Case Study

The use of cases in teacher education borrows from a long tradition of other professional programs that use cases, particularly business, law, and medicine (Merseth, 1992). The first dean of the Harvard Law School in 1875, Christopher Columbus Langdell, purported that cases were the most powerful form of teaching theory. Further, Shulman (1992) states, "cases are occasions for offering theories to explain why certain actions are

appropriate. Once theoretical reasons are advanced, their utility is tested through new cases, accounts in which circumstances change and conditions alter" (p.3). The use of cases originated at the Harvard Law School circa 1870; by 1910, all the premier law schools in the United States were using what Kimball (1995) calls "case method teaching." The Harvard Business School was the next professional school to employ case method teaching during and after World War I. In the 1930s, case method teaching had become widespread in business education, and in the 1940s, schools of public administrations began to use case method teaching (Lynn, 1999).

At first glance, the idea of cases and case study pedagogy in teacher education could appear simple and straightforward. However, a closer investigation on the topic of cases and case studies in teacher education reveals several complexities. Indeed, debates exist over matters as foundational as what constitutes a case and what is the definition of a case (Carter, 1999; Grossman, 1992; Merseth, 1992). For instance, Carter (1999) claims that although "the idea of cases as educative tools is old and venerable," the field of teacher education has yet to capture the definition of a case in "precise terms" (p.165). Grossman (1992) acknowledges that cases offer a powerful pedagogy for teacher education and for the future of the field, but fundamental questions need to be answered such as, what is a case? And, what counts as a case? In response, several educational researchers offer definitions of cases.

2.2 Defining the Case Study

Carter (1999) defines a case as, "traditionally…an embodiment of propositional knowledge about teaching or a canvas for applying that knowledge to practical situations. From this perspective, a case is any description of an episode or incident that can be connected to the knowledge base for teaching, that can be interpreted, in other words, as a segment of the teacher preparation curriculum" (p.174). In L. Shulman's (1992) view, cases are narrative accounts that have been edited or written for the purposes of teaching. The narrative structure of cases implies that a case is a story with "a set of events that unfolds over time in a particular place" (p.21). In addition, L. Shulman argues that in order for something to be called a case, a set of theoretical assumptions must be met. Merseth (1992) supports L. Shulman's (1992) argument that to classify something as a case, certain theoretical assumptions ought to be met. Merseth (1992) claims that personal reflections cannot be classified as a case because of the inherent bias in personal accounts of teaching and learning situations.

In contrast to Merseth's (1992) and L. Shulman's (1992) conceptions of cases, Grossman (1992) maintains that powerful teaching lessons can be explored by expanding the definition of cases to include videotapes of teaching episodes and primary documents such as teachers' journals, lesson plans, participant work samples, and fictional as well as philosophical texts. Grossman further suggests that conceptualizing a genre of cases rather than a restrictive definition of a case would benefit teacher education. McAninch (1993) goes further with Grossman's (1992) argument for a more inclusive conceptualization of cases. McAninch asserts "any and all concrete phenomena of practice are potentially cases – not just narratives" (1993, p.97).

Debates over the fundamental definition of a case in teacher education reveal the ambiguity and complexity of teaching, and as such, support the idea that the field of teaching is an ill-structured domain in which "relevant prior knowledge is not already organized to fit a situation" (Spiro et al., 1987, p.2). When the field of teacher education is viewed as an ill-structured domain, the use of cases and case methods becomes more apropos for several reasons.

2.3 Benefits of Using the Case Study as a Teaching Tool

Educational research documents the benefits of using cases in teacher education programs. Case studies make it possible for pre-service teachers to try strategies of teaching in the classroom because case studies present a "controllable reality" (Shulman, 1992, p.xiv) that is more vivid and authentic than the generalizability of a textbook. Moreover, case studies are more manageable and less daunting than fieldwork where a novice or pre-service teacher may begin to feel helpless due to a lack of previous work or training for the complex situations that arise in classrooms. Case studies have received increased attention in the last few decades as a sensible way to bridge the gap between theory and practice (Shulman, 1992). Moreover, cases make the occasion for legitimizing the discussion of the "impact of teachers' manner and personality, the moral quality of their intentions, and the passions that they communicate" (Kleinfeld, 1992, p.41) in ways that more traditional or conventional approaches to teacher education do not.

The 1986 landmark publication *A Nation Prepared: Teachers in the 21st Century* by the Carnegie Task Force on Teaching as a Profession recommended that case studied should be used to illustrate a wide array of problems that pre-service teachers might encounter. From a professional perspective, cases may appear more immediately credible and relevant to pre-service teachers than textbooks (Shulman, 1992). Cases are powerful because of their verisimilitude and the principles of situated cognition. Specifically, cases are situated or embedded "in contexts of application and emotion, of place and time" (1992, p.23). Given their situatedness, the use of cases reduces problems with transfer abilities, because problems are being analyzed and discussed in relevant and applicable situations. In sum, cases "highlight the complexities of teaching and call teacher knowledge to the forefront in understanding teacher performance" (p.211). Therefore cases offer the occasion to develop

and refine critical thinking skills as they apply to the complexities of life inside classrooms.

Moreover, since Laboskey (1992) claims that "teaching must be both reasoned and reasonable" (p.177), teachers should be taught how to reason practically and ethically. L. Shulman (1992) claims that cases and case methods encourage the exploration of these aspects of teaching, which further supports the benefits of using cases and case methods in teacher education.

2.4 Case Studies and Teacher Education

One of the first historical attempts to implement the case method in teacher education occurred at New Jersey State Teachers College at Montclair State University (McAninch, 1993). Little evidence exists to suggest that an attempt to institutionalize the case method at any other site than NJSTC at Montclair State University was ever made. McAninch (1993) claims teacher educators have made little progress in reaching a consensus regarding the goals and purposes of case method pedagogy since the faculty at the Harvard Graduate School of Education rejected the implementation of case pedagogy in the 1920's on the grounds that was it inappropriate for the field of teacher education.

Since this rejection, schools of education and teacher education programs forged a pedagogy that did not include cases and case methods, which has become reified and institutionalized. Despite all the documented benefits of using cases, the widespread adoption of case method pedagogy has yet to pervade teacher education on an institutional and departmental level because it represents uncharted territory in a field that developed without the use of cases at all.

2.5 Challenges Associated With Case Studies

In addition to the relative lack of experience with cases in teacher education as compared with other professional schools, other drawbacks hinder the widespread adoption of cases. For example, cases are expensive and time-consuming to develop, particularly video, multimedia, and web-based cases (Naumes & Naumes, 1999). Cases are also difficult to teach well. Case method pedagogy requires particular techniques for discussion as well as instructor familiarity with the particulars of the case (McAninch, 1993; Shulman, 1992). In addition, teaching with cases takes considerable time.

Lynn (1999) speaks directly to the critique that teaching with cases is inefficient and takes too much time. Lynn counters this criticism that although teachers may think *they* are reaching their point quickly in a lecture, it is a teacher-centered method, and pre-service teachers might not actually get the instructor's point as the instructor intended. Cases provide a student-centered method for the development of ideas and perspectives and theories and teaching practices.

The documented benefits of using cases in teacher education programs are more compelling than the criticisms. When participants make personal connections to ideas they are being taught, participants develop understandings that last longer than decontextualized material (Wiggins & McTighe, 2005). Merseth (1992) claims that cases invite the occasion for role-playing or simulations "in order to provide vicarious experiences" for participants and the opportunities to "link diagnosis with action" (p.50). Cases highlight the importance of the wisdom of professional practice (Shulman, 1987), which is the knowledge, skills, beliefs, and values that wise practitioners have develop through years of practice and reflection.

Teacher educators operate with a common purpose – to prepare future teachers with the best possible preparation program and pedagogy so that children reap the benefits of highly effective teaching. From experience as classroom teachers and teacher educators, the best preparation for the classroom engages pre-service teachers in the real life challenges and dilemmas of working with young learners who are diverse in many ways. In a sense, cases allow participants the opportunities to authentically think and act like a teacher. Traditionally these experiences have been text-based, meaning participants read and respond to written cases. Recently however, a shift in case study delivery has begun to occur.

2.6 A New Case Study Format: The Web-based Case

From a teaching perspective, web-based cases are the newest format for cases, following video cases and multimedia cases. Organizations, including The University of Virginia, which has developed multicultural video cases that focus on diverse participant populations in U.S. public schools, and the Carnegie Academy for the Scholarship of Teaching and Learning, which has developed a catalog of cases based on a variety of teaching dilemmas, have created a vast network of web-based case tools for use in teacher education programs and professional development sessions. These multimedia cases allow participants to move at their own pace and to experience the many nuances associated with teaching dilemmas. Furthermore, Naumes and Naumes (1999) claim, "computer-based systems allow for more interaction between the participant and the material" (p.178).

From a research perspective, Wang and Hartley (2003) found that overall, video cases better helped develop the knowledge and skills of observation than written cases. Lee and Choi (2008) found a "notably positive influence of the web-based case instruction on the 23 participants' development in awareness of multiple perspectives, exploring diverse ways of problem solving, and articulating a justification for their positions based on a sense of moral responsibility and affective engagement" (p.497). On the other hand, a study conducted by Schrader et al. (2003) revealed no significant findings in terms of differences between the formats of the case. The research in this area is scant and contradictory, therefore creating an opportunity for further research.

Web-based cases hold the promise of benefits similar to those of multimedia cases and written cases. They represent the type of technology that participants are accustomed to in their daily lives. Participants are increasingly familiar with virtual communities as a way interacting and learning from one another. While research exists on the impact of the web-based case format, it is an area of teacher education research that needs richer and more detailed study. Richardson and Kile (1999) conclude, "comparative case studies of the use of video cases and other methods of teacher education would be useful…it would certainly be worth exploring further the potential of this approach to teacher education" (p.136). Additionally, Levin (1999) calls for further research with regard to case studies with specific attention to what kinds of cases (written, video, multimedia, or self-written cases) are most effective in helping pre-service teachers "continue to develop as critically reflective thinkers able to take multiple perspectives" (p.156). Levin states, "studying different case formats, such as cases that use commentaries or video or multimedia cases, is also important to pursue" (p.156).

The present study is predicated on questions posed by researchers such as Levin (1999) and Richardson and Kile (1999). With a focus on case formats, this study compares the engagement levels of pre-service teachers when using text-based cases versus web-based cases. The results of such a comparative inquiry add to the conversations surrounding the use of cases and offer researchers a new strand of study. Further, these results suggest to teacher educators an innovation for pedagogy. While the concept of case study as a tool for teaching and learning has been dissected at length, the main construct associated with the present study, student engagement, has yet to be defined. The section that follows offers a brief theoretical framework relating to the authors' conception of student engagement.

3. WHAT IS STUDENT ENGAGEMENT?

It is important to recognize that the meaning and justification of the term "student engagement" differs at times substantially from study to study. McMahon and Portelli (2004) argue that because the term "student engagement" has become so popular in educational research, it at times appears to be used as nothing more than a "superficial catch-phrase or slogan" rather than a tool for philosophical inquiry (p.60). After reviewing a number of definitions used by education researchers, McMahon and Portelli identified three major perspectives researchers associate with "student engagement".

The first they label as "Conservative or Traditional" (McMahon & Portelli, 2004). Under this perspective, student engagement is identifiable by "observable psychological dispositions," which discounts the role of participant involvement in the creation of the engagement (p.62). The second perspective, "Liberal or Participant Oriented," associates engagement with teacher qualities and strategies. For example, if a teacher does "x, y, and z" then the participant will do "1, 2, and 3". Finally, McMahon and Portelli define a third perspective of student engagement – the "Critical or Democratic" Conception. This perspective defines engagement as "generated through interactions of participants and teachers in a shared space for the purpose of democratic reconstruction through which personal transformation takes place" (p.70). Through this lens, engagement serves to empower participants and teachers and emphasizes "questioning and challenging authoritative discourses" (p.72). This study utilizes the critical or democratic definition of student engagement.

Newmann, Wehlage, and Lamborn (1992) claim, "levels of engagement must be estimated or inferred from indirect indicators" (p.13). The authors outline four such levels from which "student engagement" is observed and measured throughout the context of this study. These levels are oftentimes seen occurring simultaneously; therefore they are not required to be independent or mutually exclusive from one another.

Participation. The first factor used to measure "student engagement" is referred to as "participation". Participation is identifiable among participants in three different ways. Individuals may decide to participate by responding verbally to questions posed by other members within their groups. Individuals may choose to participate by responding verbally to questions posed by the case itself. Finally, individuals may choose to react generally to the case by making declarative statements or opinions about what has taken place.

Comprehension Monitoring. Newmann, Wehlage, and Lamborn (1992) use a second factor to identify student engagement, which can be referred to as "comprehension monitoring." Gunthrie (1996), in a study of engagement with literacy, found that participants used cognitive strategies such as summarizing and self-monitoring when they were engaged with their work. The authors measure "comprehension monitoring" in this study based on the occurrence of two characteristic behaviors. First, individuals may monitor their own comprehension by verbally summarizing. Instances where participants offered their own understandings of what was taking place, such as through re-capping or summarizing the content that had been presented, were categorized as being engaged in comprehension monitoring. Additionally, participants may choose to question for clarification as a means of self-monitoring. For example, a participant may ask the class, "So in that section, the students seemed to be confused. Do I understand that correctly?" Such questions, often provided to the entirety of the group, serve as a way for participants to verify that they are correctly interpreting the material.

Challenging. Newmann, Wehlage, and Lamborn (1992) use a third factor to define student engagement. This third factor may be referred to as "challenging." Herrenkohl and Guerra (1998) state,

Challenges raise questions about the plausibility of certain scientific arguments and begin debates about how one might think about a certain phenomenon. These practices index a high level of engagement in which participants can openly discuss and decide for themselves among different perspectives on the same topic. (p.440)

The present study defines "challenging" in a similar fashion. Challenging refers to the process by which participants question statements or utterances made by others. Participants may challenge questions and statements posed by class members, the teacher, or the case itself. Challenging questions are often used as a way to offer an alternative opinion or to get the group thinking about the content through a different perspective.

Social Interaction. A fourth and final factor used to define student engagement is "social interaction" (Newmann, Wehlage, & Lamborn, 1992). The authors of this study define social interaction as verbally engaging with other participants' observations. This may come by way of agreeing with, or expanding on, the observations or comments made by other participants.

A combination of these four factors defines the lens through which "student engagement" is both observed and measured throughout this study. The next section discusses the methodological approach taken to both conduct and analyze the components of this inquiry.

4. METHODOLOGY

4.1 Study Context

The setting for this study takes place within an East coast, research-intensive university located just outside of a major urban metropolis. The course targeted within the university was a senior-level undergraduate social studies methods course offered by the College of Education. The course, offered during the fall 2009 academic semester, was selected due to the content and relevancy of the two cases being studied. All undergraduate elementary education majors were required to take this course as a prerequisite to graduation and teacher certification. The class met once a week for 15 weeks. Each class session was approximately two hours in length.

4.2 Participants

The participants approached to partake in this study were senior elementary education majors who were self-enrolled in a section of a social studies methods course for pre-service teachers. All participants were initially identified by virtue of their enrollment in the course. Twenty-two participants consented to participate in the study. All participants were concurrently enrolled in three additional educational methods courses and all were currently teacher interns at local public schools. While 22 participants agreed to participate, the researchers were interested in studying only those participants who experienced both formats of cases. Due to participant mortality, only seven out of the 22 original participants experienced both case formats; four were members of Group A and three were members of Group B. The researchers were interested in comparable groups with equal sample sizes; therefore one of the remaining participants in Group A was randomly omitted from the observational portion of the study. Thus, the number of participants per group analyzed was n=3.

4.3 The Teaching Cases

The researchers developed two teaching case studies to serve as the units of analysis in the study. Four graduate students formerly enrolled in a masters program at the university wrote *A Lesson in Culture*. The case was edited and evaluated by the advising professor of these four participants; the advisor also taught at the university. The authors of *A Lesson in Culture* state that the case was created to "provide the space in which to develop a self-awareness and cultural competence, and to apply the fundamentals of culturally responsive teaching in an urban school environment."

The case study itself is broken down into five sections. At the end of each section, participants are prompted with a variety of questions that fall under three categories: Basic Perceptions, Connecting Theory with Practice, and Reflection and Application. The prompts under Basic Perceptions attempt to summarize and bring to the surface initial questions about a given section. Connecting Theory with Practice, brings the work of educational theorists to the case study as a way of bridging theory and practice. Finally, the section entitled Theory and Practice serves as a place for participants to reflect together about epistemologies and pedagogies.

According to the authors of *A Lesson in Culture,* the case attempts to capture ways for pre-service teachers to "address diversity in a meaningful, comprehensive and practical way." A short summary of *A Lesson in Culture* follows:

Ms. D. is a graduate of a large university located in the Mid-Atlantic, and she is excited to embark on her first classroom teaching experience, outside of participant teaching, in a large school with a diverse participant population, located right outside of the District of Columbia. Early on in the school year, Ms. D. realizes that most of her participants cannot read on grade level, but when an opportunity to teach a unit on Shakespeare presents itself, Ms. D. feels she can use her knowledge of Shakespearean sonnets to capture her participants' attention. Ms. D. runs into some challenges when she realizes that her participants do not share her love of Shakespeare, and her teaching is reduced to an endless cycle of classroom management techniques. Ms. D. knows that this is not conducive for participant learning or effective teaching, and she needs to table out how to make things better before she loses her participants' attention and respect for the rest of the year.

The authors of this study developed the second

case study, *Learning How to Think Historically*. The framework for the case mirrors *A Lesson in Culture*. There are seven total sections in *Learning How to Think Historically* and each section has accompanying prompts associated with Basic Perceptions, Connecting Theory and Practice, and Reflection and Application. This case was reviewed and revised by Chair of the Department of Social Studies Education at the university being studied.

This case study provides readers and viewers the opportunity to work through the dilemmas associated with traditional social studies pedagogy, and to provide a space where prospective educators can better understand how to teach participants to think like historical investigators and how to teach participants the disciplinary heuristics associated with "doing" history. A short summary of *Learning to Think Historically* follows:

Ms. Parker feels her undergraduate teacher education program prepared her to teach reading and math, she does feel prepared to teach social studies. Ms. Parker relies on her love of history to assure herself that she will be able to effectively teach socials studies to her participants. Ms. Parker decides to use the skill and drill method to teach her participants social studies so she could devote more planning time to reading and math in preparation for the state assessments in these subjects at the end of the school year.

In Ms. Parker's estimation, the beginning of the school year is going smoothly, and the participants are doing well in their weekly social studies quizzes, which ask participants to recall specific facts and dates. One day, Ms. Parker hears groans and complaints when she asks her participants to take out their social studies text books and write down the important points for the day's chapter. When Ms. Parker discusses this with one of her participants, she quickly realizes that the skill and drill method is not teaching her participants to make connections between important historical events or even to appreciate social studies as a content area.

4.4 Data Collection Procedures

Data collected during this study took place over the course of two class sessions. During the initial class session, participants were randomly assigned to one of two groups; Group A or Group B. The two researchers conducting this study served as Instructor 1 and Instructor 2 of each group respectively. The two groups separated into private classrooms.

Group A was assigned to the text-based version of *A Lesson in Culture*. The text-based case contained an exact transcript of what was presented on the web-based case version. Each member of this group received a copy of the text-based case and the accompanying prompts. During the session, the instructor asked a member of the group to read a section aloud as the rest of the group members followed along. After each section, the instructor would use the prompts as a way of initiating conversation amongst the members of the group. Each instructor was careful not to deviate from the prompts unless solicited by members of the group serving more so as a moderator than an instructor. The goal of the interaction was to allow the participants to engage with the case study and allow teaching and learning to result from this interaction.

Group B was assigned a web-based version of *A Lesson in Culture*. This group had access to an LCD projector through which the web-based version of the case could be viewed. Rather than reading the individual sections, Group B would watch and listen to a video montage, which illustrated the case text. After each section video came to an end, participants, with the aid of the instructor, could click on various sections to interact with prompts. As previously stated, the goal of the interaction was to allow the participants to engage with the case study and allow teaching and learning to result from this interaction.

This exact process was used during the next week's class period with *Learning to Think Historically* as the focal case. However, during this administration, Group A was assigned a web-based version of the case while Group B was assigned a text-based version. This is the opposite scenario used during the implementation of *A Lesson in Culture* and was purposefully imposed so that each participate had the opportunity to interact with a text-based case and a web-based case. After the completion of *Learning to Think Historically*, Groups A and B reconvened as a whole group. At this time an open-ended questionnaire was administered[1]. This questionnaire asked the pre-service teachers to reflect and react on their experiences with both formats, web-based and text-based, of the teaching case studies.

Data was gathered using two primary tools: audiotapes and videotapes. Since the researchers worked separately with two groups, both groups were videotaped and audiotaped to capture student engagement with the cases. To resolve any differences that might result from different researchers facilitating the case study, the researchers developed a script to read to the participants. After the conclusion of the study, both researchers watched each videotape with a checklist (see Appendix) to record the frequencies of certain aspects of student engagement. Tally marks were noted when any participant within a group exhibited evidence of student engagement. Upon completing these initial procedures, both researchers compared their results to ensure inter-rater reliability with regard to what was being accepted as student engagement. Resulting data were analyzed jointly.

5. RESULTS

The results of the study are discussed according to each group's interaction with each case study format. Then, a summation of results is offered following the detailed discussion.

Group A: Text-based Case

[1] This questionnaire was administered to the seven participants who were present for both case study formats.

Group A engaged with the text-based case mostly through general declarative statements, which occurred 29 times (see Table 1 for a breakdown of all frequencies) during the hour long taping of the class session. These statements often consisted of new thoughts about the topic being discussed, personal anecdotes, and opinions about the scenario presented. For example, one participant offered insight about culturally relevant teaching, which was seemingly sparked by the text-based case. For example, Julia stated, "When you don't have any experience working in an area with high poverty, high crime, or you know like low achievement, it's going to be really hard to relate to your students on that level." In another instance, a participant offered a personal anecdote as a way of engaging with the case. After discussing the decision to teach in a high poverty setting, Kristen stated, "I don't think I would want to teach in an area that was different from where I grew up because I would be completely ill prepared so I would need to have a placement like where I grew up." Finally, in response to a question relating to differing background between teachers and participants and the effects that might have on relationships, Marcy offered her opinion about what was being discussed:

> I think it depends...on how you interact with the students because if you like get along with the students...I think having a different background could really sway the way the students perceive you and tolerate you. If you are white and they are all black and they are not used to taking direction from a white person, that might be a big power struggle to negotiate."

These ways of engaging with the case made up the most frequent occurrences of engagement with the text-based case resulting from Group A.

There was also a moderate level (15 occurrences) of social interaction, which came by way of expanding on the ideas of one another and there was also a moderate level (9 occurrences) of verbal responses to questions posed by the case itself. There were two instances of challenging between participants where interpretation or opinions were questioned. Group A exhibited no evidence of comprehension monitoring during the class session.

Group A: Web-based case

Group A's engagement with the web-based case resembled their engagement with the text-based case in many ways. First, Group A participants engaged with the web-based case mostly through general declarative statements (32 occurrences) just as they had with the text-based case. Again these statements were generally new thoughts, anecdotes, or opinions about what the content presented. The second most frequently observed characteristic of engagement with the web-based case was social interaction, which was visible as participants expanded on one another's ideas (9 occurrences) and as they verbally agreed with the statements of one another (7 occurrences). In one instance during the participant discussion, an exchange took place exemplifying how participants engaged with the case as they built upon each other's thoughts and as they agreed with one another:

Julia: "You can read a book that has to do with history during your reading time so you can get the concept of history even though we don't have time. You know you can try to use the concept of reading to get social studies

Kristen: "Yes, yes, I agree with that I know what you are saying. Its like the content part of reading can be social studies.

Marcy: "Yeah and I was like actually looking at the planning guide and they like have the topics like what reading strategies can you use and what math strategies can you use so they know that you don't have time to teach this stuff.

Group A participants also chose to engage with the case by verbally responding to questions posed by the case (6 occurrences) and very minimally by challenging statements made by other participants (1 occurrence). Like their engagement with the text-based case, Group A did not exhibit evidence of comprehension monitoring when experiencing the web-based case.

Table 1
Group A Frequencies of Student Engagement

		Text-based case (*A lesson in culture)*	**Web-based case (*Learning to think historically)***
Participation	Verbal Response to Questions posed by others	0	0
	Verbal Response to Questions posed by the case	9	6
	General Declarative Statements	29	32
Comprehension Monitoring	Verbally Summarizing	0	0
	Questioning for Clarification	0	0
Challenging	Questioning Statements or Utterances by Others	2	1
Social Interaction	Agreeing with Others	2	7
	Expanding on Others' Ideas	15	9

Group B: Text-based case

Group B engaged with the text-based case most frequently through participation (28 occurrences; see Table 2 for a breakdown of frequencies). This was observed mostly through general declarative statements made by participants (23 occurrences). Like the statements made by Group A, these statements consisted of opinions, anecdotes and new thoughts. Likewise, Group B participants also engaged through participation by verbally responding to questions posed by the case (5 occurrences).

Additionally, Group B engaged with the text-based case frequently through social interaction (26 occurrences), which occurred both as participants expanded on one another's (16 occurrences) ideas and as they agreed with the utterances made within the group (10 occurrences). The following exchange attempts to illustrate one instance where Group B participants used social interaction as a way of engaging with the text-based case:

Lori: "It shouldn't just be about dates I mean have a general perspective about when the Civil War took place because it wasn't that long ago …so I feel like dates are important but it's just what you do with that information and how you make the children apply that knowledge."

Carey: "Right, I just can't see the value … I just hated when people are like so what day did the battle of such and such take place."

Keydra: "Like who the hell cares! That's the kind of information you open up a computer and Google. You can attain that information easily but how does the struggle. Our struggle for independence relate to France's. I mean there are so many ways to connect the stuff to what's actually happening today!"

From this scenario, we can see evidence of participants' engagement with the case content through social interaction, which helps them not only to clarify their own thoughts, but also assists them in the development and articulation of new thoughts about the content being presented. Finally, Group B also showed moderate engagement (4 occurrences) with the case through challenging or questioning the utterances made by other participants, and through comprehension monitoring which surfaced through participants' questioning for clarification (3 occurrences).

Group C: Web-based case

Group B's engagement with the web-based case came most frequently through social interactions (57 occurrences), again which is characterized as agreeing with one another (23 occurrences) and expanding on others' ideas
(34 occurrences). Interestingly, this category was the only category that showed any kind of substantial gain in frequencies and the increase was substantial at 46%. Both measures of social interaction more than doubled from the text-based case to the web-based case.

As previously noted, the other categories remained somewhat unchanged when compared with the results of the text-based case. Engagement through questioning remained exactly the same from text to web at four occurrences. Likewise, participation through verbal responses to questions posed by the case also stayed the same from text to web at five occurrences. Comprehension monitoring through questioning for clarification dropped slightly from three occurrences during the text-based case to one occurrence during the web-based case. General declarative statements from participants rose slightly occurring 27 times during the web-based case.

Table 2
Group B Frequencies of Student Engagement

		Text-based case (*Learning to Think Historically)*	Web-based case (*A Lesson in Culture)*
Participation	Verbal Response to Questions posed by others	0	0
	Verbal Response to Questions posed by the case	5	5
	General Declarative Statements	23	27
Comprehension Monitoring	Verbally Summarizing	0	0
	Questioning for Clarification	3	1
Challenging	Questioning Statements or Utterances by Others	4	4
Social Interaction	Agreeing with Others	10	23
	Expanding on Others' Ideas	16	34

DISCUSSION

The purpose of this research was to compare the formats of a text-based case study and a web-based case study with regard to their influence on student engagement. Engagement was defined through four different categories: participation, comprehension monitoring, challenging and social interaction. Each category was further broken down to specify certain actions taken by participants during their interactions with the different formats of the case study. With new technologies infiltrating classrooms around the world at an ever-increasing rate, this study adds to the conversation surrounding student engagement

and pedagogical approach and has implications for teacher education programs while also identifying the need for further area of scholarly study.

Looking specifically at Group A, the results indicate that there were no notable differences with regards to student engagement between the two formats of case studies. Neither case format seemed to motivate participants to question ideas put forth by the case or other participants more so than the other. While declarative statements were the most significant form of participation and thus represented the most frequent form of engagement with the case, a negligible difference exists between the two formats with the text-based case resulting in 29 frequencies versus the web-based case, which resulted in 32 frequencies. Likewise in the overall category of participation, both the text and web-based cases resulted in exactly the same number of frequencies (38 occurrences).

Group B, however, did evidence a change in engagement levels in connection with the different formats of cases. While the frequency with which participants engaged with the case did not substantially differ on three of four categories between text and web-based formats, Group B did see a significant increase in engagement through social interaction when working with the web-based case. Participants in Group B doubled the amount of times they both agreed with and expanded on the ideas of others. This has implications for teacher education programs. The usage of web-based cases seems to promote an atmosphere of group cohesiveness where participants can act as a community to bring about new and innovative ways to think about certain concepts. The web-based case study fostered an environment where the participants in Group B felt comfortable interacting as a group of learners who were educating one another. Additionally, the substance, as observed by the researchers, of the conversations among Group B participants was much richer during the class session where the web-based case study was used.

Overall, results indicate that the type of format used to deliver case study material to participants may have an impact on their level of engagement. After both groups had concluded their experiences with both versions of the case studies, the researchers gave each participant an open-ended questionnaire – including the one participant who experienced both case formats but was randomly omitted from the observational analysis – with regard to how they personally felt about the written versus text-based case study formats. Interestingly, the format they felt kept them more engaged was not the format they preferred. Forty-three percent of the participants felt that the web-based case study kept them more engaged, yet fifty-seven percent of the participants preferred to work with the written case study as opposed to the web-based case study. The most common explanation for preferring the written case study to the web-based case study was the ability to have the written text directly accessible for reference. This result is important for teacher educators because, given that we live and teach in an increasingly technological world, it is important for students to have written texts when working on assignments and other course activities.

LIMITATIONS

One of the limitations of this study is the small sample size that resulted from a high rate of attrition. The design of this study was to divide one class into two groups that would receive the same treatment – a teaching case study in two different formats. The first day of the study Group A received the text or written version of the case study while Group B received the web-based version of the case study. On the second day of the study, the same groups received the opposite treatment from the previous week. On the second day of this study, fewer participants came to class than on the first day of the study. In order to maintain a sense of reliability and rigor, the researchers decided to analyze only those participants who experienced both formats of the case study. The researchers were therefore limited to the number of participants whose engagement could be analyzed. The researchers also conducted a survey with participants as a way to triangulate their data, but given the small number of participants, the use of a survey as another data source would only produce deceiving percentages.

Along with the attrition that contributed to a small sample size, this study was bounded by the definition of engagement used to analyze participants' discussions about the cases. In the literature review, several definitions for student engagement were discussed. The researchers' definition of student engagement is anchored in traditionally accepted ways (Gunthrie, 1996; Herrenkohl & Guerra, 1998; McMahon & Portelli, 2004; Newmann, Wehlage & Lamborn, 1992). However, other dimensions of student engagement could be studied if a broader definition of student engagement was used.

Moreover, the researchers do not have prior experience with the participants in the study and have never before observed the participants in the regularly scheduled class with the assigned instructor of record. This hindered the researchers' ability to think about participants' engagement in relative terms. This study explored group engagement and compared it between the deliveries of two teaching case study formats but could make no assessments between participants' engagement in the regularly scheduled course with peers and the engagement the researchers observed during the days this study was administered.

Fifty-seven percent of the participants in the study wrote that they that they preferred the written version of the case study as opposed to the web-based version of the case study, even though there were data to support higher

levels of student engagement with the web-based case. One participant described her preference for the written case: "reading the case allowed me to take in information at my own pace". Every participant could refer back to the written case study since every participant had his/her own copy of the written case. Another participant wrote, "[the written case] allowed me to read at my own pace and reread certain passage". When the groups experienced the web-based version of the case, the group as a whole moved through the sections of the case study in a linear fashion. If participants were equipped with their own laptops, the participants could have moved through the web-based version of the case study at their own pace and refer back to it in much the same way they were able to refer back to the written version of the case study.

FUTURE DIRECTIONS

This study should be considered a first step in the study of pedagogical case studies and their formats in pre-service teacher education. In particular, this study examines the influence of a case study format on student engagement in a pre-service teacher education class at a large university. A study focused on ways to engage participants in learning is important because a growing body of research suggests that student engagement is a mediating factor in the academic achievement levels of participants (McMahon & Portelli, 2004).

Future studies should be conducted with larger numbers of participants so as to statistically analyze data and determine significance. In addition, with a larger number of participants, the survey that was originally developed for this study could be used as another means of data collection and analysis. While this study explored student engagement, future studies on the topic of case studies in teacher education programs could look more specifically at the ways in which the format of a case study impacts pre-service teachers' learning of the content in the teaching case.

Arguments have been made that much of the value of cases lies in the discussion that takes place surrounding the cases (Lundeberg, Matthews & Scheurman, 1996; McAninch, 1993; Shulman, 1992). Such discussions hinge on the instructor/facilitator's guidance and ability to synthesize participants' ideas and probe for further understanding of the dilemma within the case. This study was intended to explore the difference between the formats of two cases; a reduction in variability was necessary. In order to reduce instructor variability, the facilitators removed themselves from the discussions of the cases so that the focus could remain on student engagement without probes from the instructors. Therefore, the instructors did not facilitate discussion. Since discussion is such an important aspect of teaching case studies (Lundeberg, Matthews & Scheurman, 1996; McAninch, 1993; Shulman, 1992), this presents an avenue for further research. Facilitation is important because most of the comments were general declarative statements, and perhaps an instructor's facilitation could have probed participants to go deeper with their analysis.

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APPENDIX

Checklist Used to Analyze Videotape Sessions With Each Group.

		Group A		Group B	
		Text	**Web**	**Text**	**Web**
Participation	Verbal Response to Questions posed by others				
	Verbal Response to Questions posed by the case				
	General Declarative Statements				
Comprehension Monitoring	Verbally Summarizing				
	Questioning for Clarification				
Challenging	Questioning Statements or Utterances by Others				
Social Interaction	Agreeing with Others				
	Expanding on Others' Ideas				