Critical Thinking in a Gifted Education Blended Learning Environment

A dissertation presented to
the faculty of
The Patton College of Education of Ohio University

In partial fulfillment
of the requirements for the degree
Doctor of Philosophy

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December 2016

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This dissertation titled
Critical Thinking in a Gifted Education Blended Learning Environment

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Abstract

COPP, SUSAN E., Ph.D., December 2016, Instructional Technology

Critical Thinking in a Gifted Education Blended Learning Environment

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Critical thinking for profoundly gifted students in a blended learning environment is an area of research that has not been thoroughly explored. While the number of online and blended learning classrooms for gifted students has increased exponentially over the last decade, the scholarly literature in this area is limited, both by the small number of studies being done with gifted students and the limited research on higher order thinking in online blended learning environments.

This research used a holistic single case study method to examine critical thinking in the online component of a blended learning environment using the Newman et al. critical thinking content analysis model as a theoretical framework. It is noted here that the categories of Newman’s model are listed in italic bold throughout the dissertation in contradiction to APA style. The case study design was appropriate because it allowed the researcher to examine the phenomena of critical thinking taking place in various learning strategies using common asynchronous writing tools, through the lens of profoundly gifted high-school students.

Online tools (discussion forums, blogs, Google Docs) did not seem to influence critical thinking in this case study. The data within all three tools (discussion forums, blogs and Google Docs) showed that justification, linking ideas, ambiguities, and outside knowledge were the strongest areas of critical thought.
The data examining online strategies (structured, scaffolded, open-ended, debate/argument, role play, peer edits, and literary criticism) also showed that students were most comfortable using justification, linking ideas, ambiguities, and outside knowledge in their writing.

It is unclear how much of an impact the lack of teacher presence and social presence had on tools and strategies implemented in this study. However, the poststudy responses from the instructor and students seem to support Garrison’s theory of Community of Inquiry in supporting critical thinking in a blended learning environment.

While technology such as learning management systems, discussion forums, blogs, and online document editing may provide essential tools for blended learning classrooms, tools and strategies may not be enough to promote critical thinking across a broad model like the Newman et al. model of critical thinking. Further research should examine how online tools and strategies affect critical thinking when discourse is supported by the instructor and students are consistently providing each other with feedback within a Community of Inquiry model.
Dedication

To Sam, Tori, Ben, Travis and of course, Socrates.
Acknowledgments

While at times writing this dissertation has felt like a very lonely process, I have many people to thank for their time, their expertise, and their support. Dr. David Moore has spent countless hours helping me go through every detail of this study from the research design to the data analysis. I couldn’t have asked for a more brilliant committee chair, advisor, and professor; and I am eternally grateful that I have had the privilege of working with him.

Few of us are lucky enough to have two advisors while working on a dissertation, but to have Dr. Teresa Franklin as a mentor and advisor during my graduate program has been awe inspiring. As busy as she is, she never hesitated to offer her support and expertise. She has a way of making you feel like you are her only student, and she will gladly share her vast knowledge with you just when you need it most.

I am very grateful to my two other committee members, Dr. Linda Rice and Dr. Claudia Gonzalez-Vallejo for their time and willingness to bring their expertise to my research study. I am also extremely fortunate to have had the assistance of Allen Gattis and Mark Mace in creating the LMS used in this study. Additionally, I would also like to thank the case study school and the instructor and students for allowing me the opportunity to do research in your classroom.

Behind the scenes, I have had the most amazing support system. Travis, Sam, Tori, Ben, Bill and Sheila—all of you have done so much to make this possible. Wherever this journey takes me, you will always be at the center of my world.
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Chapter 1: Introduction

Technology in the classroom has shown itself to be a powerful tool in addressing the specific needs of gifted learners (Nugent, 2001). Through the integration of technology in the classroom, gifted students have opportunities to work at their own pace, explore varied topics of interest in greater depth, collaborate with other gifted students, and learn to think and write more critically about real-world situations (Dixon, Cassady, Cross, & Williams, 2005; Jones, 1990; Nugent, 2001). Additionally, recent reviews of best practices and empirical research in gifted education technology, have found that discussion forums and blogs can play a critical role in gifted online learning (Gadanidis, Hughes, & Cordy, 2011; Periathiruvadi & Rinn, 2012).

As high schools are moving toward blended learning environments to meet the needs of diverse learners such as the gifted (Rose, 2014), many educators and parents are excited about the blended learning environments and their potential to offer more diverse course options and more opportunities to access challenging material (Roy & Winkler, 2014). Ng and Nicholas (2007) suggest that online environments can create more positive options for gifted learners than face-to-face classrooms alone. Yet while many schools are using the technology of blogs and discussion forums in the classroom, their role in facilitating critical thinking for gifted high-school students is still unclear. To date, there has been little research done on the tools and strategies used within online learning environments that examines their impact on critical thinking in gifted high school populations.
The 2015 Horizon Report (New Media Consortium & Consortium for School Networking, 2015) points out, that critical thinking in online environments is a wicked problem that is “. . . complex to even define, and will require additional data and insights before solutions will be possible” (p. 24). It is the intent of this case study to provide some of the needed data and insights about online tools and strategies that may facilitate critical thinking in a blended learning critical theory course at a school for profoundly gifted high-school students.

As noted in the Horizon Report (2015), there are many definitions and ideas about what constitutes critical thinking, but within this case study it is defined as “a reasonable reflective thinking focused on deciding what to believe or do” (Ennis, 1989, p. 4). As well as “the propensity and skill to engage in an activity with reflective skepticism,” (McPeck, 1981, p. 8).

The term gifted is also defined in many ways and often includes talented in its definition. This study takes a more differentiated approach to giftedness and talent that was proposed by Gagné (1985). In this model a clear distinction is made between giftedness and talent, where giftedness is expressed through natural abilities or aptitudes and talent is designated through the mastery of developed skills. Within the giftedness model, Gagné (1985) includes five aptitude domains: intellectual, creative, socioaffective, sensorimotor and other. This study examined critical thinking specifically within the intellectual aptitude domain through the lens of profoundly gifted high-school students who score in the 99.9th percentile, with standard deviation of +3 or higher, on a standardized IQ test (Davidson Institute for Talent Development, 2015).
There are also many definitions of blended learning, as well. These multiple interpretations have caused significant confusion for students, teachers, administrators, and researchers. Beginning in 2014, the annual iNACOL report of online and blended learning made the decision to combine the terms online learning and blended learning and refer to it simply as digital learning (Powell, Rabbitt, & Kennedy, 2014). Their reasoning was that “blended learning implementations have infinite permutations, making it extremely difficult to identify and study these activities” (Watson, Pape, Murin, Gemin, & Vashaw, 2014, p. 4). By combining online learning and blended learning, they hoped to reduce some of the statistical confusion created by other definitions.

While iNACOL’s more global definition serves the purpose of research looking at the quantity of digital learning, it is too broad to be used in research examining the quality and accountability of learning in these environments (Watson et al., 2014). This research examined the online component of blended learning as defined by Horn and Staker (2011).

Blended learning is any time a student learns at least in part at a supervised brick-and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path and/or pace. (p. 4)

**Statement of the Problem**

Gifted students by definition are rare, which means that they are widely dispersed geographically throughout the U.S. In 2004, a national study found that, since its inception in the 1990s, over 34,500 academically gifted students have participated in a distance learning education program at one of four talent search centers in the U.S. (Lee,
Matthews, & Olszewski-Kubilius, 2008). The number of students participating in these online programs is so high because they are often the only opportunities that gifted students have available in their own communities that allow for centralized gifted education and the opportunity for students to connect with other gifted learners. Yet, according to the 2013 iNACOL Annual Report of Online and Blended Learning, across all student learning populations, online and blended learning activity has expanded so quickly that there are mounting concerns about how to ensure the quality and accountability of these programs (Watson, Murin, Vashaw, Gemin, & Rapp, 2013).

A 2012 survey of empirical research on technology in gifted education echoes these concerns (Periathiruvadi & Rinn, 2012). A review of the literature shows that fewer than five research articles were published on digital or online high school learning environments from 2000-2012 (Böhmová & Roštějnská, 2009; Dixon et al., 2005; Ng & Nicholas, 2010; Olszewski-Kubilius & Lee, 2004; Periathiruvadi & Rinn, 2012). Only two studies, Dixon et al., (2005) and Ng and Nicholas (2010), examined critical thinking in gifted high-school students. The Dixon study was from a digital perspective only and did not take place in an online learning environment. However, she found that critical thinking was more evident in male student’s writing using digital technology. Ng and Nicholas’s study looked at critical thinking online only as it relates to participation in gifted adolescents, but they found a dialogical environment contributes to participation and critical thinking in online environments.

Given the lack of research in this area, it remains unclear how critical thinking transfers to online environments. Dixon et al. (2005) warn that while the term critical
thinking is a common topic of discussion in gifted education literature, the limited number of studies that examine critical thinking in gifted digital environments is a threat to the overall quality of these courses.

While this case study focused on critical thinking and blended learning within a profoundly gifted high school, it is noted that more research is needed in all populations of learners. Additionally, one key challenge in researching blended environments is isolating factors that may be affecting learning. To address this challenge, this case study takes a closer look at the design of the blended course, by isolating the tools and strategies that are used in its online component and examining how they influence critical thinking through the lens of profoundly gifted high-school students enrolled in a critical theory literature course. As blended learning environments expand, the effective integration of technology will be heavily influenced by these types of course design decisions that go beyond simply providing computers to students in the classroom and requiring that they do their work online.

The link between the promise of technology, particularly in digital learning, and its actual implications for the type of deep learning required in critical thinking has yet to be determined (Njenga & Fourie, 2010). Of great concern among researchers of digital learning is that “current and future research on new technologies is tied to their speed of development,” (Guri-Rosenblit, 2005, p. 18). Case studies and design-based research on the tools and strategies used in digital learning and their impact on deep learning offer great promise in understanding how technology can be used to facilitate critical thinking in the classroom (Saadé, Morin, & Thomas, 2012). In essence, it has become quite clear
over the last decade that the technology needed to create digital learning courses is readily available. Now, educational researchers need to focus on how to facilitate higher order skills such as critical thought within these environments, particularly for diverse populations like the profoundly gifted.

**Critical Thinking**

Perhaps one of the biggest obstacles to determining how critical thinking can be facilitated in the classroom, or in the case of blended learning in the classroom and online, is that there are so many definitions of critical thinking coming from multiple disciplines. The theories on critical thinking typically come from three prominent disciplines: psychology, philosophy, and education (Munix, 2012).

This case study focused on two concepts of critical thinking, both of which come from the education perspective, but it should be noted that they have been strongly influenced by the fields of psychology and philosophy. In her discussion of critical theory literature, Lai (2011) points out that the critical thinking frameworks developed in education have not been researched as thoroughly as those developed in philosophy or psychology. Yet, they benefit from their foundation of classroom experience and observations of student learning.

The two concepts of critical thinking that serve as a way to define critical thinking in the context of this research are listed below. The rationale for selecting these definitions of critical thinking is that they create an overall definition that is broad enough to allow them to fit into the theoretical framework of the critical thinking model used in this research.
1. “Critical thinking is a reasonable reflective thinking focused on deciding what to believe or do,” (Ennis, 1989 p. 4).


This case study used the Newman Model of Critical Thinking and content analysis to evaluate critical thinking in the case classroom. It is a theoretical framework that has been used in several empirical studies examining critical thinking (De Wever, Schellens, Valcke, & Van Keer, 2006; Marra, Moore, & Klimczak, 2004; Perkins & Murphy, 2006; Smith, 2008). It has not, however, been used in profoundly gifted populations, thus there is not a well-developed body of empirical and theoretical research on critical thinking in profoundly gifted, blended learning environments that can be used to inform and guide the researcher using this model.

Purpose of Study

This case study examined how critical thinking can be facilitated in a literature course for profoundly gifted high-school students within the online component of a blended learning environment. Specifically, it examined the tools and strategies used in the online portion of a critical theory course to see how the interaction of these tools and strategies may influence elements of critical thinking. The research is guided by two main questions: What critical thinking skills are profoundly gifted high-school students using in their online writing and how can online tools and strategies facilitate critical thinking in a literature course for profoundly gifted high-school students in a blended learning environment.
Research Questions

To answer the broad questions posed above, this study is guided by the following research questions:

1. What critical thinking skills are profoundly gifted high-school students using in their online writing?
   a. What critical thinking skills are they missing?

2. How can online tools and strategies facilitate critical thinking in a literature course for profoundly gifted high-school students in a blended learning environment?
   a. How do online tools (discussion forums, blogs, Google Docs) influence critical thinking?
   b. How do instructional strategies (structured, scaffolded, open-ended, debate/argument, role play, peer edits, literary criticism) influence critical thinking?

Significance of Study

Nugent, (2001) suggests that learner centered environments both online and in a blended learning format, encourage the type of independence and innovation that gifted students thrive in. For students without sufficient gifted resources at their home school, online courses may be their only option for enriching, educational opportunities. While online and blended learning environments have the potential to offer these students the best of both worlds in the form of a structured classroom environment and the independence and flexibility of learning online, more research needs to done to ensure
that deep learning processes like critical thinking are occurring (Dixon et al., 2005; Garrison, Cleveland-Innes, & Fung, 2010; Mayes, 1995; Ng & Nicholas, 2010; Saadé et al., 2012; Webb, Newman, & Cochrane, 1997).

The Partnership for 21st Century Skills identifies critical thinking as a learning and innovation skill that prepares students for “increasingly complex life and work environments in today’s world” (Partnership for 21st Century Skills, 2011, para. 7). Additionally, the Common Core State Standards cite critical thinking as one of the skills “required for success in college, career and life” (National Governor’s Association for Best Practices & Council of Chief State School Officers, 2015, para. 2). Yet, despite these clear endorsements that critical thinking is an essential skill for a student’s success in higher education and future employment, there is often a disconnect between the intent of the instruction and what actually happens in the online or blended learning classroom.

This study contributes to the literature of designing online and blended learning environments for gifted students that facilitate critical thought by focusing on the tools (discussion forums, blogs, Google Docs) and the instructional strategies used in their implementation (open ended, structured prompts, scaffolded, debate/argument, role play, peer edits and literary criticism).

**Research Approach**

This research uses a holistic single case-study approach to investigate a high-school literature course for profoundly gifted students in a blended learning environment. A case study is “not a methodological choice,” but a choice made by the researcher to study a phenomenon such as a course, a school, or a process (Stake, 1994, p. 236).
Cresswell, (2014) points out that a case study must have a focus and a purpose. They “are bounded by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time,” (p. 14).

A case study approach is particularly appropriate for this research because it provides an opportunity to examine how to facilitate critical thinking in a blended learning literature class through the lens of profoundly gifted high-school students.

Specifically, this six-week holistic single case study examined how critical thinking can be facilitated in the online component of a blended learning literature course through the lens of seven profoundly gifted high-school students. These seven students are enrolled in the course and all of them are in the final year of their core English requirement.

The collection procedures used in this case study include qualitative analysis of student and instructor comments posted online, and summative content analysis (Hsieh & Shannon, 2005) of discussion questions, blog posts, peer reviews and literary analysis using Newman’s Model of Critical Thinking (Newman, Webb, & Cochrane, 1995). The Newman et al. (1995) model was chosen because it provides a measurement of essential critical thinking skills that should be taking place in group learning within electronic discourse.

According to Hsieh and Shannon, (2005) content analysis is typically classified as a qualitative research method even though analytic procedures can produce quantitative data. This “quantitative-based qualitative approach” is still examining verbal data but looking at the frequency of the codes quantitatively (Chi, 1997, p. 7). Both qualitative
analysis and summative content analysis was used within this case study to examine critical thinking in a profoundly gifted classroom.

**Scope of Study**

This is a case study of the online component of a literature course exclusively for profoundly gifted high-school students working in a blended learning environment. It describes and analyzes dimensions of critical thinking in the course using content analysis and Newman’s Model of Critical Thinking as a theoretical framework. Critical thinking was examined using asynchronous learning strategies and writing tools with a focus on how these tools and strategies facilitate critical thinking in a blended learning environment. A detailed description of the research site and the reasons for its selection are described in chapter 3.

**Limitations and Delimitations**

This study is limited in that it is not generalizable to all online learning environments and is only reflective of the situation of a critical theory course at a profoundly gifted high school and the students that participated in this study. There are also several delimitations of this study. It is not this study’s intent to examine critical thinking in the general population of students participating in online or blended learning courses and it is assumed that the data is not generalizable. However, it is possible that the reader could extrapolate certain elements of this study to be applicable to other populations. Additionally, it is the intention of this case study to assess critical thinking in the course, but rather to examine how online tools and strategies help to facilitate critical thinking in a blended learning environment. It is also acknowledged that there is research
to indicate that social interaction plays a role in online critical thinking, this study placed its focus on the demonstration of critical thinking in student’s online written work (Garrison & Cleveland-Innes, 2005; Ng & Nicholas, 2007; Webb et al., 1997).

From the perspective of this research, it was intended that several procedures would be implemented to promote reliability, including a cross check of codes for one week of data and a final member check. The diagnosis of a terminal illness and subsequent death of the instructor prevented the cross check from ever taking place, resulting in an additional unexpected limitation. While this cross check could have potentially provided some interesting analysis as well as additional triangulation, the instructor and the researcher were able to meet weekly during the course of the study to share analysis. This weekly analysis proved to offer an accurate and timely method of not only checking for inter-rater reliability but also serving as an informal member check of the weekly data. If the instructor had had the opportunity to review the coded data, it is possible that she could have provided additional insights. While this is certainly a limitation, the weekly analysis meetings between the instructor and the researcher allowed for consistent cross checking and member checking throughout the course of the study.

Definitions of Key Terms

There has been a significant amount of confusion about how to define many of the parameters used in this research study. Blended learning, the term gifted, and critical thinking have all been the topic of much discussion within the educational community.
For the purposes of this research it is essential that they be clearly defined, leaving little room for ambiguity.

**Asynchronous discussions.** Asynchronous discussions as defined in this research are online posts to a discussion forum that do not take place in real time. They can be advantageous from a pedagogical perspective because they give students an opportunity to engage in class discussion outside of the classroom, students have more time to reflect on information, and they provide students who aren't interactive in classroom discussion, another venue for discourse (De Wever et al., 2006; Ko & Rossen, 2010).

**Blended learning.** As digital learning increases in K-12 schools, the term has come to hold many definitions (Ko & Rossen, 2010). For the purpose of this research, Horn and Staker’s (2011) definition is most appropriate. “Blended learning is any time a student learns at least in part at a supervised brick-and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path and/or pace” (p. 4).

**Blogs.** A blog (short for web log) is a web-based application that allows students to post journal entries or commentary on readings and course content (Ko & Rossen, 2010). It is typically arranged in reverse chronological order with the most recent posting being viewed first. In a blended learning environment, it provides students with a venue where they can independently write about their own ideas and receive feedback from peers and the instructor (Miyazoe & Anderson, 2010).
**Content analysis.** Krippendorff, (1989) defines content analysis as “a research technique for making replicable and valid inferences from data to their context,” (p. 403). This study used directed content analysis (Hsieh & Shannon, 2005) guided by Newman, Webb and Cochrane’s Critical Thinking Model to analyze student created online content (Newman et al., 1995).

**Critical thinking.** Critical thinking was defined for the purposes of this research as:

1. “A reasonable reflective thinking focused on deciding what to believe or do,” (Ennis, 1989, p. 4).

**Critical thinking model.** A single definition of critical thinking is inadequate in delineating the specific skills required for critical thought. “A model of critical thinking skills seems to be the more appropriate venue to list and define critical thinking skills and competences” (McLean, 2005, p. 2). For the purposes of this research, the Newman, Webb and Cochrane content analysis model designed, to serve as an indicator for critical thinking skills, was used to evaluate the critical thought process (Newman et al., 1995).

**Google apps for education.** Google Apps for Education is a suite of Google Applications available to schools that includes Email, Google Drive, Google Docs, Google Calendar and Google Site. Unlike the consumer product that is administered by Google, Google Apps for Education is administered and password protected by the school. Any data created within Google Apps for Education is owned by the school and
protects the privacy of students and their work (“Google apps for education: Security and privacy first,” n.d.).

**Learning management system (LMS).** While there is some confusion in terms such as virtual learning environment (VLE), course management system (CMS) and learning management system (LMS), Ko and Rosen (2010), group them into one category defined as “a software program that contains a number of integrated functions” (p. 399). The learning management system used in this research was designed in Google Sites specifically this case study and is referred to in this document as the LMS.

**Online discussion forum.** Online discussion forums provide an asynchronous online venue for class members to discuss coursework. In a blended learning environment it is used as an additional medium for the students and instructor to collaborate and exchange of ideas (Ko & Rossen, 2010; Miyazoe & Anderson, 2010). For the purposes of this research it was used as a medium to pose and answer questions related to the readings and course content.

**Profoundly gifted.** Franoys Gagné (1998) proposed a set of subgroups for identifying gifted populations. For the purposes of this research we define profoundly gifted as individuals that score in the 99.9th percentile, with standard deviation of +3 or higher, on a standardized IQ test (Davidson Institute for Talent Development, 2015).

**Summary**

This research used a holistic single case study method to examine critical thinking in the online component of a blended learning environment using a critical thinking content analysis model as a theoretical framework. The case study design is appropriate
because it allows the researcher to examine the phenomena of critical thinking taking
place in various learning strategies using common asynchronous writing tools, through
the lens of profoundly gifted high-school students.
Chapter 2: Literature Review

Critical thinking for profoundly gifted students in a blended learning environment is an area of research that has not been thoroughly explored. While the number of online and blended learning classrooms for gifted students has increased exponentially over the last decade (S. Lee et al., 2008; Roy & Winkler, 2014), the scholarly literature in this area is limited, both by the small number of studies being done with gifted students and the limited research on higher order thinking in online blended learning environments. This case study used the Newman’s Model of Critical Thinking and content analysis to evaluate critical thinking in the case classroom. It is a theoretical framework that has been used in several empirical studies examining critical thinking (De Wever et al., 2006; Marra et al., 2004; Perkins & Murphy, 2006; Smith, 2008). It has not, however, been used in profoundly gifted populations, thus there is not a well-developed body of empirical and theoretical research on critical thinking in profoundly gifted, blended learning environments that can be used to inform and guide the researcher using this model.

As online and blended learning have evolved, the debate over design vs. media has continued. Richard Clark (1983) argued that the form of media does not change learning, rather it is the instruction itself that makes the difference. According to Clark, the emphasis should be placed on the quality of the instruction and not how it is delivered. He even goes so far as to say that online instruction is often designed with more purpose and intent and that any significant learning benefits seen within online instruction are the result of superior design.
While this research focused on design by examining the tools and strategies that facilitate critical thinking in the online environment; the case study examines blended learning where face-to-face and online components are two distinctly separate parts that are combined to make a cohesive critical theory course for profoundly gifted high school students. Clark makes an excellent point that good instructional design is a key component in successful learning. However, the idea that the medium has little impact on learning seems like a narrow view of the blended learning environment. As argued by Kozma (1991)

The capabilities of a particular medium, in conjunction with methods that take advantage of these capabilities, interact with and influence the ways learners represent and process information and may result in more or different learning when one medium is compared to another for certain learners and tasks. (p. 179)

This research in no way tries to address the debate between Clark and Kozma, however it should be noted that this literature review is an analysis of the empirical and theoretical research that directly informs the unique characteristics of the media as well as the design in examining critical thinking in the online component of the course. In doing so, the literature review is divided into four main sections. The first section addressed various interpretations of critical thinking, the theoretical framework behind content analysis and the Newman, Webb, Cochrane model of critical thinking, as well as strategies for its facilitation in the classroom. The second section reviews the literature on the attributes and instructional design approaches of the online component of blended learning in a gifted classroom. These approaches include:
• Tools: discussion forums, blogs, peer edits

• Strategies: structured questions, and scaffolded questions, argument, role play

The third and fourth sections addressed the medium of the online component of the course by examining the literature on how the role of the instructor and the role of the students can facilitate critical thinking in an online learning environment.

In keeping with Kozmo’s argument, the last two sections are included because while not actually tools or strategies that facilitate critical thinking, they are unique characteristics of the medium and help to inform the way that tools and strategies are implemented to facilitate critical thinking in the online component of the critical theory course.

As noted previously, there is not a well-developed body of empirical and theoretical research on critical thinking in profoundly gifted, blended learning environments. Therefore, there has been careful consideration to insure that the literature presented here is viewed through the lens of profoundly gifted students. Whenever possible, research within the discipline of gifted education has been included in each section.

**Critical Thinking**

Perhaps one of the biggest obstacles to determining how critical thinking can be facilitated in the classroom, or in the case of blended learning in the classroom and online, is that there are so many definitions of critical thinking coming from multiple disciplines: psychology, philosophy, and education (Mulnix, 2012). While there seems to
be little argument about the value of critical thinking, there is not much agreement among scholars about what the concept of critical thinking actually is.

Each academic strand (psychology, philosophy and education) has developed different approaches to defining critical thinking, often with a bent toward their own discipline’s concerns (Lewis & Smith, 1993). Of particular debate among scholars are the philosophical and psychological perspectives on critical thinking. These differences reflect both the humanities (philosophy) and the sciences (psychology) and both have made significant contributions to the field of higher order thinking or more specifically, critical thinking (Lewis & Smith, 1993). However, along the way these differences have created a great deal of confusion. In citing the difficulties in defining critical thinking for both scientists and philosophers, Larry Cuban (1984) referred to critical thinking as troublesome, saying: “Troublesome is a polite word; the area is a conceptual swamp” (p. 676). For practitioners in the classroom, defining critical thinking using both a psychology definition and a philosophical definition has led to educational definitions that embrace both. This is exemplified in the writings of the modern-day founder of the critical thinking movement—John Dewey, educator, philosopher, and psychologist (Sternberg, 1986).

Historically, the philosophical approach has garnered the most attention with the writings of Socrates, Plato, Aristotle, Descartes, Russell; and more recently Richard Paul, Linda Elder and Michael Scriven. Their writings focus on the qualities, characteristics, and behaviors that critical thinker’s exhibit. “Critical thinking is the art of analyzing and evaluating thinking with a view to improving it” (Paul & Elder, 2014, p. 1). A
philosophical approach to critical thinking focuses on the following characteristics and behaviors:

- raises vital questions and problems, formulating them clearly and precisely;
- gathers and assesses relevant information, using abstract ideas to interpret it effectively;
- comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards;
- thinks open-mindedly within alternative systems of thought, recognizing and assessing as need be, their assumptions, implications, and practical consequences; and
- communicates effectively with others in figuring out solutions to complex problems (Paul & Elder, 2014, p. 2).

Psychology takes a different approach to critical thinking that contrasts with the philosophical definition in two ways. First, psychologists are much more interested in placing the focus on how people actually think as opposed to how they should think in an ideal environment (Sternberg, 1986). Second, psychologists tend to define critical thinking as a list of skills or procedures performed by critical thinkers (Lewis & Smith, 1993). Psychologists are particularly concerned with ensuring that critical thinking takes place within the limitations of the person and the environment.

Regardless of the discipline defining critical thinking, there is little disagreement that critical thinking is a complex process where the individual engages in an inner dialogue to contemplate ideas and abstract concepts. There is a difference between purposeful thinking and critical thinking, yet there is really no generalized skill called
critical thinking. McPeck (1981) points out that skepticism is perhaps the most notable difference between the two, in defining critical thinking as “the propensity and skill to engage in an activity with reflective skepticism” (p. 8). Here McPeck (1981) sets himself apart from philosophers that view critical thinking from an analysis of an argument perspective. He argues that analysis of argument and logic are evaluative and not productive dimensions of critical thinking. While analysis and logic are certainly helpful in eliminating hypothesis and proposed solutions, they do not create them. Skepticism however, allows critical thinkers to use problem solving techniques and previous knowledge to create hypothesis, and alternate ideas that are worth pursuing or trying out.

Robert Ennis defined critical thinking in 1962 as “the correct assessing of statements” (Ennis, 1962, p. 82). It was narrowly defined and many scholars took issue with the idea that there was a “correct” way of assessing statements. He later revised his definition to critical thinking is “reasonable and reflective thinking about what to believe or do” (Ennis, 1989). Within this definition, Ennis rather eloquently defines four key component of critical thinking: reasonable thinking, reflective thinking, focused thinking and the ability to make decisions about what to believe or do. Reasonable thinking is not arbitrary. It is open-minded and mindful of alternatives that lead to conclusions that are supported in reason. Reflective thinking judges the credibility of sources and identifies conclusions, reasons and assumptions of a problem or argument. It also examines the quality of the argument including its reasons, assumptions and evidence. Focused thinking is purposeful. It is not as Dewey (1910) described, “a random coursing of things through the mind” (p. 3). But rather, thinking that defines
terms in an appropriate way, formulates plausible hypothesis and draws conclusions based on reason. Finally, the critical thinker integrates these thought processes into making a decision about what to believe or do.

The definitions of critical thinking as defined by Ennis and McPeck have been used in the context of this research:

1. Critical thinking is a reasonable, reflective thinking focused on deciding what to believe or do” (Ennis, 1989, p. 4).

2. Critical thinking is the propensity and skill to engage in an activity with reflective skepticism (McPeck, 1981).

While there is little agreement among scholars about how to define critical thinking, there seems to be a general consensus that critical thinking is “a purposeful mental process that involves a variety of cognitive and metacognitive skills” (Bullen, 1997, p. 34). This case study adopts McPeck and Ennis’ definitions of critical thinking because they create an overall definition that is broad enough to allow them to fit into the analytical framework of the critical thinking model used in this research. McLean, (2005) notes that a definition of critical thinking is inadequate in delineating the specific skills required for critical thought. “A model of critical thinking skills seems to be the more appropriate venue to list and define critical thinking skills and competences” (p. 2).

In all disciplines, the types of questions asked by the instructor influence critical thinking. When thought-provoking questions are presented to students that go beyond factual statements, more questions tend to be generated by both the responder and the peers who read their responses. This technique used to teach critical thinking is designed
to place the ownership of responsibly modeling critical thinking on the instructor with students accepting more responsibility as they become more proficient in their own critical thinking (MacKnight, 2000).

While some scholars argue that critical thinking should be explicitly taught as formal instruction in argumentation and the philosophy of logic (Paul, Elder, Nosich, & Cosgrove, 2013), this model of critical thinking instruction did not conform with the structure of the course in this case study. As a consequence, students were not informed of the specific areas of critical thinking that are represented in the data, but questions and strategies were designed to specifically address instances of critical thinking within the critical thinking model used in this case study.

**Critical thinking skills model.** Sternberg (1986), cites two concerns in evaluating critical thinking theories. The theories are often tested in laboratories and not in classrooms; and critical thinking is difficult to empirically test. This often leads to scientific analysis that is oversimplified or overly broad in an attempt to gather any meaningful data. In this section I show the development of a framework that leads up to Newman et al. (1995) Critical Thinking Model used in this study.

The idea of taking empirical studies in critical thinking out of the laboratory and into real-life scenarios led several researchers in the 1990s to look at content analysis as a way of doing empirical studies in real-life situations. At the time, computers were beginning to be used in distance learning, and researchers like Henri (1991) viewed content analysis in computer-mediated conferencing (CMC) as a “gold mine” of information in developing theories on learning strategies such as critical thinking. This
led to several researchers, including Henri, Garrison (1991), and Newman et al. (1995), to create methodological frameworks for examining critical thinking in CMC.

While encouraged by its potential, Henri (1991) was very concerned with the problems associated with analysis of CMC and worked to create an analytical framework to assist in evaluating its content. Five dimensions of the CMC were identified within this framework illustrated in Table 1, below.

It is the cognitive and metacognitive dimensions of Henri’s framework that this research focuses on, and that the works of Garrison (1991) and Newman et al. (1995) have placed their emphasis on as well. Within the cognitive dimension of Henri’s framework, she lays out five skills for critical thinking: elementary clarification, in-depth clarification, inference, judgement, and strategies. It is notable that Henri’s framework closely aligns with Ennis’s abilities of the ideal critical thinker grouped into the following categories: clarification; basis for the decision; inference; and supposition and integration (Ennis, 1991).
Table 1

*Henri’s Analytical Framework for CMC Evaluation*

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Definition</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participative</td>
<td>Compilation of the number of messages or statements transmitted by one person or group</td>
<td>Number of messages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of statements</td>
</tr>
<tr>
<td>Social</td>
<td>Statement or part of statement not related to formal content of subject matter</td>
<td>Self-introduction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Verbal support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“I’m feeling great...”</td>
</tr>
<tr>
<td>Interactive</td>
<td>Chain of connected messages</td>
<td>“In response to Celine...”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“As we said earlier”</td>
</tr>
<tr>
<td>Cognitive</td>
<td>Statement exhibiting knowledge and skills related to the learning process</td>
<td>Asking questions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Making inferences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Formulating hypotheses</td>
</tr>
<tr>
<td>Metacognitive</td>
<td>Statement related to general knowledge and skills and showing awareness, self-control, and self-regulation of learning</td>
<td>“I understand”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“I wonder”</td>
</tr>
</tbody>
</table>

*Note.* Definitions and indicators for Henri’s Analytical Framework for CMC Evaluation from [Henri, 1991](#).

About the same time, Garrison (1991) developed a theory of critical thinking inspired by the problem-solving process that critical thinkers move through in their attempts at reasoning. According to Garrison, critical thinkers move through five stages: identifying the problem, defining the problem, exploring the problem and its possible solutions, evaluating the applicability of those solutions, and integrating their understanding of the problem into their existing knowledge.
Keeping in mind Sternberg’s (1986) concerns about evaluating critical thinking, Newman et al. (1995) worked to create a model that looked for signs of critical thinking in a social context like CMC. They are careful to point out that the model is a measure of the learning process and not intended as a method of assessing students. In its role of assessing the quality of the learning process, it is noted that the emphasis is on the quality of the discourse and not about the quantity. There have been many studies that address the quantity of responses and system usability (Mason, 1992), however, the Newman et al. (1995) model is designed to specifically address the quality of critical thinking in CMC.

It is Henri’s cognitive and metacognitive dimensions and Garrison’s theory of critical thinking that Newman et al. use in their content analysis method of evaluating critical thinking online (Newman, Johnson, Webb, & Cochrane, 1997). While Henri’s first three dimensions (participative, social, and interactive) reflect the participation and social elements of CMC, the cognitive and metacognitive dimensions hone in specifically on critical thinking in online discourse. It is readily acknowledged that there are many aspects to CMC including participation and motivation that influence the success of online discourse, however, this content analysis model focuses solely on the cognitive and metacognitive dimensions as defined by Henri.

To evaluate the cognitive and metacognitive dimensions of online discourse, Newman et al. (1995) cite the Garrison model of critical thinking as “the most relevant to the evaluation of critical thinking” (p. 4) and base their own analytical framework of critical thinking on the model. In looking at the similarities between both Henri’s model
and Garrison’s model of critical thinking, it is helpful to compare them side-by-side as shown in Table 2.

Table 2

*A Comparison of Critical Thinking Models: Garrison’s Stages and Henri’s Skills*

<table>
<thead>
<tr>
<th>Garrison’s Critical Thinking Stages</th>
<th>Henri’s Critical Thinking Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1: Problem identification</strong></td>
<td><strong>Elementary clarification</strong></td>
</tr>
<tr>
<td>A triggering event arouses and sustains interest</td>
<td>Observing a problem</td>
</tr>
<tr>
<td><strong>Stage 2: Problem definition</strong></td>
<td><strong>In-depth clarification</strong></td>
</tr>
<tr>
<td>The problems boundaries are framed and it is analyzed for an approach to a solution</td>
<td>Analyzing the problem</td>
</tr>
<tr>
<td><strong>Stage 3: Problem exploration</strong></td>
<td><strong>Inference</strong></td>
</tr>
<tr>
<td>Gaining insight and understanding about the problem</td>
<td>Proposing ideas based on true propositions</td>
</tr>
<tr>
<td><strong>Stage 4: Problem applicability</strong></td>
<td><strong>Judgment</strong></td>
</tr>
<tr>
<td>Evaluating alternative solutions to the problem</td>
<td>Making decisions or critiquing the problem</td>
</tr>
<tr>
<td><strong>Stage 5: Problem integration based on previous knowledge.</strong></td>
<td><strong>Strategy formation</strong></td>
</tr>
<tr>
<td></td>
<td>Making decisions or choices about a solution to the problem</td>
</tr>
</tbody>
</table>

*Note.* A comparison of Garrison’s and Henri’s critical thinking models (Garrison, 1991)

Garrison (1991) takes his critical thinking model a bit further than Henri by suggesting that critical thinking is cyclical. He goes on to describe his five critical thinking stages as represented by Figure 1 below as the critical thinking/learning style.
Figure 1. Garrison’s Critical Thinking/Learning Cycle represents the cyclical process of critical thinking (Garrison, 1991, p. 293).

According to Garrison, as students begin the critical thinking process in stages one and two, they identify the problem and then analyze it for an approach or solution. Through this process they select information from outside sources and from their own knowledge base. In stage 3 students begin to explore the problem and gain insight and understanding into its issues. It is during stage 3 that students begin to form a general conceptualization of the problem. In stage 4 students use deduction to determine the applicability of an idea in resolving the problem. During stage 4 students begin to form a hypothesis. In stage 5 students begin to test their hypothesis using concrete information.
from the real world. In pointing out the cyclical nature of critical thinking, Garrison is clear to emphasize that critical thinking is not linear and that often these stages merge together as the process of critically examining problems continues through the cycles.

Newman et al. (1995) designed the Newman Model of Critical Thinking based on the work of Henri (Henri, 1991), and Garrison (Garrison, 1991). They published a series of papers studies using their content analysis critical thinking model in face-to-face and online asynchronous discussions (Newman, Johnson, Cochrane, & Webb, 1996; Newman et al., 1997, 1995; Webb et al., 1997). Their model has been used and cited in many studies examining critical thinking in online asynchronous discussions (Bullen, 1998; De Wever et al., 2006; Donnelly & Gardner, 2011; Garrison, Anderson, & Archer, 2000a; Garrison & Arbaugh, 2007; Klisc & Mcgill, 2004; Landis, Swain, Frihe, & Coufal, 2007; Mackinnon, 2003; Marra et al., 2004; Pena-Shaff & Nicholls, 2004; Perkins & Murphy, 2006; Rourke, Anderson, Garrison, & Archer, 2001; Smith, 2008; Williams & Lahman, 2011; Xin & Feenberg, 2006; Yang, Richardson, French, & Lehman, 2010).

The definitions provided by McPeck (1981) and Ennis provide the ground work for applying Newman’s Model of Critical Thinking to ascertain the presence of meaningful thinking in online discourse. The model was chosen for this research for several reasons:

- Codes are explicit and broken down into ten elements of critical thinking making data easier to categorize.
- Codes are more focused and easier to interpret.
• Codes are designed to reflect Community of Inquiry (cognitive presence, instructor presence, and social presence).

Analysis procedures using the Newman Model are performed by applying codes to sentences, thoughts, or phrases based upon evidence of Relevance, Importance, Novelty, Ambiguity, Outside Knowledge, Linking Ideas, Justification, Critical Assessment, Practical Utility, and Width of Understanding.

Despite the advantages of the Newman Model of Critical Thinking there are also several difficulties that occur in using the content analysis model:

• The ten elements of critical thinking within the model make it difficult for the coder to remember to use all of the applicable codes.

• Inter-rater reliability is not possible because Newman et al. (1995) do not define a unit of analysis.

• As noted by Newman et al. (1995), the context of the material presented in class is essential to accurate coding, thus preventing raters who are not participatory observers in the course from accurately coding data. This also puts constraints on inter-rater reliability.

The Newman et al. Critical Thinking Model (1995) is explained in-depth in Chapter 3 and can be referred to in its entirety in Appendix B.

Blended Learning Instructional Approaches in a Gifted Classroom: Tools and Strategies

Considerable research has been done in comparing face-to-face and blended learning environments (Cavanaugh, Barbour, & Clark, 2009; Garrison & Kanuka, 2004;
Newman et al., 1995; Thomson, 2010). For gifted learners, blended learning can provide students with more opportunities for advanced learning in a less structured environment, with fewer time constraints. Cavanaugh et al. (2009) suggest that the online component of a blended learning course can improve critical thinking, independent learning, decision-making and time management skills. One key difference that allows students to reap the benefits of blended learning is the implementation of tools and strategies within the online component of the course that can be used to facilitate thoughtful, critical responses from students.

**Synchronous vs. asynchronous.** Before addressing tools and strategies a decision needs to be made about whether discussions are synchronous or asynchronous. For gifted students, asynchronous discussions (discussions that do not occur in real time) can offer several advantages over the traditional face-to-face discussion. Asynchronous discussions give students the flexibility to log in and participate in discussions when it is convenient and they give students more opportunity to read and reflect on other student postings; as well as allowing students to take their time in composing their own responses (Cavanaugh et al., 2009; Christopher, Thomas, & Tallent-Runnels, 2004; Thomson, 2010). Within a blended learning environment where students are meeting face-to-face and also participating in an online component of the course, asynchronous discussions often provide gifted students with the best of both worlds by allowing them to participate synchronously in the face-to-face sessions and asynchronously in their online discussions.
**Tools and strategies.** It should not be the intent of the online component of a blended learning course to recreate the face-to-face environment. Rather, it is a unique opportunity for instructors to offer gifted students an environment that opens new channels of learning and potential for critical thought that may not be taking place in the face-to-face classroom (Thomson, 2010). While a learning management system provides a place to house the online component of the course, it is the tools within that LMS that provide the means for learning and communication to take place.

**Discussion forums and blogs.** Discussion forums and blogs are essentially online conversation tools that are the backbone of the online component of a blended learning environment. They are typically used as a way for discussions to take place between the instructor and the other students in the course.

The problem often encountered in discussion forums and blogs is that these conversations are often not structured. Instead of facilitating a critical thinking environment where learners are creating intellectually stimulating discourse, students are often writing responses to meet a course requirement, not expecting to learn much from their peers, and seeking approval from authority figures that their answers are correct (Marra, 2002).

Frequently, discussion forums and blogs in the online component of blended learning environments do not use pre-structured strategies. This often ends up causing frustration for instructors and frames the online discussions as a completion task that stifles discourse, particularly in gifted populations (Thomson, 2010). The objective becomes to complete a posting for a grade, with little motivation for the student to back
up his or her claims with evidentiary support or call into question another student’s epistemic beliefs (Gunawardena, Lowe, & Anderson, 1997).

Strategies built into discussion forums and blogs are one way to constrain the conversation by pre-structuring the discussion. Two effective strategies that can be employed within the discussion forum and blog tools are the use of structured and scaffolded questions. Within these two strategies, the instructor uses structured or scaffolded questions to impose a conversational structure to the discussion that force students to participate in the forum according to a predefined set of rules or constraints (Marra, 2002). While structured questions can help keep students on the correct path as they post their discussions, scaffolded questions can help to guide students through the process of argument support, clarification, refinement and rebuttal in a step-by-step process that helps build confidence and independence.

Once students have begun to develop a more critical approach to their discussion forum and blog postings, the incorporation of argument can coax students to go beyond opinion-based responses by encouraging them to analyze their arguments, determine how they fit within their current knowledge structure, and challenge their current beliefs about a topic (Marra, 2002). Role play also provides a form of argument construction by creating a discussion structure where students can present multiple perspectives on a single topic. Writing from multiple perspectives prompts students to search for evidentiary support instead of relying on opinion and gives the instructor the opportunity to encourage the evaluation of the argument without bias (de Bono, 1999; Marra, 2002).
Despite the suggestion by many researchers that pre-structured discussion forums and blogs create order out of chaos, some research suggests that particularly for gifted learners, open discussion forums and blogs that are not pre-structured and allow for student initiations of dialogue can set the stage for the emergence of strong dialogic discourse. Student initiated questions and responses trigger teacher responses as well as additional student initiated questions that may not have occurred in a more pre-structured discussion forum environment (Netz, 2014; Thomson, 2010).

Based upon the research, instructors in gifted classrooms may want to employ multiple pre-structured strategies as well as open discussion forums as a way of encouraging as many stages of critical thinking as possible in the online component of a blended learning environment.

**Google Docs.** The use of Google Docs as a learning environment where students can create and share their work with the instructor and with other students has allowed for teacher feedback and peer reviews to take place in the online component of the course. Students can create a word processing document within Google Docs where the document and all revisions are stored in the cloud. The instructor for the course as well as peers can access the document from any computer with Internet. Google Docs provides students with an opportunity to keep portfolios of their work, share documents with the instructor and other students, view student and instructor comments, as well as the capability to do peer editing outside of the face-to-face classroom.

Siegle (2010) cites four major advantages to cloud computing in the gifted classroom. First, software does not need to be installed on multiple computers. The
application is available for free and can be installed on any computer with Internet, saving time and money previously spent on site licenses. Second, documents that are created in the cloud can be accessed from any computer connected to the Internet eliminating the need for flash drives. Third, the author of the document can invite peers and instructors to view and edit the document. The document can be viewed and edited by multiple people at one time. Finally, the most recent version of the document and all previous versions of the document are easily accessed by anyone with permission to view or edit the document.

Peer reviews are easily implemented within Google Docs and other cloud applications. After a student shares their work with the student assigned to do the peer edits, the reviewer can easily open the draft and add comments. These comments are available to the author in real-time, and allow for both synchronous and asynchronous peer evaluations. Peer edits can serve a variety of purposes in a blended learning environment. They allow students to learn from peer feedback. They encourage quality writing from the student by making their work and their feedback available to their peers. They also allow for the instructor to see the student’s work evolve as they receive peer edits and make changes to their work based upon the feedback they have received.

Another blended learning strategy that can be implemented within cloud computing applications is literary analysis. Just like the face-to-face classroom, the strategies used within a blended learning environment are often most effective when they are purposefully employed as a way of scaffolding the learning process. By implementing tools and strategies in a systematic manner, students are more likely to be able to
implement critical thinking skills as they move through the course (Garrison & Cleveland-Innes, 2005; Webb et al., 1997).

Within a blended learning literature course, literary analysis can be an effective way for students to take the work that they have done in discussion forums, blogs and peer edits to create a culminating assignment that allows them to substantiate their ideas and thoughts through well-reasoned arguments that exhibit multiple elements of critical thinking.

These critical thinking skills enable the student of literature not only to analyze but also to integrate knowledge by showing the interrelationship of various themes and motifs within the work. The applications of these skills also teaches the student to evaluate multiple viewpoints and promotes the transference and application of knowledge from and to different disciplines. (Esplugas, 1996)

Cloud computing applications like Google Docs provide a tool within the blended learning environment where collaborative (peer edits) and individual learning (literary analysis) can be effective strategies for gifted students in a critical theory literature course.

The focus of this case study is to examine how critical thinking can be facilitated in a blended learning environment through the tools and strategies implemented in the online component of the critical theory course for profoundly gifted high school students. However, the role of the instructor and social presence online remain key components in how these tools and strategies should be designed and implemented (Garrison & Cleveland-Innes, 2005; Newman et al., 1995; Ng & Nicholas, 2010; Swan, 2003).
Profoundly Gifted Students

As mentioned in Chapter 1, we define profoundly gifted as individuals that score in the 99.9th percentile, with standard deviation of +3 or higher, on a standardized IQ test. As this definition would indicate, this is a very unique population with highly individual traits that are difficult to categorize (Gagné, 1998). Many profoundly gifted students find a great deal of dissonance between their own perceptions and understandings and those of most other people they interact with. For this reason, they are often less social and and choose to work in isolation whenever possible (Clark, B, n.d.). According to the Davidson Institute for Talent Development (2015), a private foundation supporting profoundly gifted youth, some of the most common characteristics of profoundly gifted students are:

- Processing information at a highly accelerated rate.
- Rapid comprehension of ideas and concepts.
- An ability to quickly perceive patterns and structures.
- Perfectionistic desire for precision and the need to correct errors.
- An ability to link ideas and synthesize commonalities.
- An ability to think abstractly at an early age.
- An ability to find alternative solutions or meanings.
- Intellectual curiosity
- Excellent long term memory
- An ability to concentrate for long periods of time.
- An extensive vocabulary
- An ability to understand multiple sides of an issue.
- Argumentativeness.
- An ability to think in metaphors and symbols.

Many of these traits lend themselves well to the case study critical theory literature course in this research. They also align nicely with several of Newman et al.'s elements of critical thinking (1995), including linking ideas, width of understanding, outside knowledge, novelty, critical assessment, and practical utility. While many of the findings in this study may be generalizable to a broader population, it is expected that given the traits of profoundly gifted students, some elements of critical thinking came naturally to the case subjects in this research.

**Instructor Role in Facilitating Critical Thinking in a Blended Learning Gifted Classroom**

Yet, despite these exceptional traits, scholars that view critical thinking from the perspective of educators and practitioners caution that critical thinking is not a natural occurrence even in the gifted classroom. John Dewey in discussing the training of thought said “one may have to learn to think well, but not to think” (1910, p. 30). There has been a significant amount written about whether critical thinking should be taught as a subject of its own or infused into a curriculum. This argument is outside of the scope of this case study and was not addressed. Instead, this study attempted to examine how critical thinking can be facilitated within the curriculum of a literature course for profoundly gifted high-school students in a blended learning environment. Thus the literature reviewed in this section examined the research on the optimal conditions and
strategies for facilitating critical thinking for profoundly gifted students and did not focus on how to teach students specific critical thinking skills.

Interaction and discourse between the instructor and the students, as well as among the students in the class, has been a consistent theme in the literature as a strategy for facilitating critical thinking in online environments. As Garrison and his colleagues continued to examine critical thinking in the classroom they developed their “community of inquiry” framework designed to facilitate this type of interaction in the classroom (Garrison, Anderson, & Archer, 2000b). Within this type of environment, discussions are encouraged over lectures and demonstration and implementation should be the goals of the instructor.

One issue that seems to be prevalent in online learning is that lectures and readings are still used as the primary methods of instruction and students are given few opportunities to discuss, interact with, process, and challenge information through discussions with peers or instructors. This didactic approach is consistent throughout K-12 and higher education. It is teacher-centered and places the instructor in the role of the expert and the students as the receivers of the knowledge. In these situations, an online learning management system often functions simply as a storehouse of materials and information and a portfolio system for student work.

Sternberg, Grigorenko, and Zhang, (2008) in discussing learning styles in online environments suggest that a dialogical approach to online teaching is much more effective at facilitating critical thinking. Dialogic learning is learning that takes place through dialogue. The Socratic method of teaching is one example of encouraging
dialogic learning in the classroom. It is typically egalitarian in nature, and encourages argument and discussion based on validity and not on power claims.

Dialogic learning is not without its critics. Many instructors find it difficult to implement and many cite their frustration in its tendency to devolve into pseudoteaching where the instructor facilitates open-ended and unchallenging questions instead of deep, meaningful discussions with multiple viewpoints. Reznitskaya et al. (2009) suggest that “the apparent resistance to embracing dialogue in education may, at least partially, be attributed to the inherent complexity, inconsistency, and uncertainty associated with its actual classroom implementation” (p.30).

While using a dialogic method in the classroom is not an easy process, research suggests that persistence pays off and it takes time for the instructor and the students to adjust to the new environment (Paul, 1993; Reznitskaya et al., 2009; Sternberg et al., 2008). Reznitskaya et al. (2009) suggest several strategies that can help facilitate the transition:

- Questions should not be answered by the instructor.
- The instructor should fill the role of a facilitator of the discussion.
- The focus of the discussion should not be on finding a correct answer.
- Students should be encouraged and supported to express their views.

Online environments hold great potential for adding a dialogic component to the classroom and there is research to support that critical thinking is facilitated in classroom environments where students are encouraged to have productive discussions about course materials (Smith, 2008). Their study using discussions as a means of assessing critical
thinking showed that a successful dialogic environment can “afford learners the opportunity to reflect, share ideas, learn through observing and interacting with others, and create their own view of the topic” (p. 26).

Other strategies that help facilitate critical thinking focus on the design of the classroom discussion. Clarke (1988) suggests that a “good discussion is an investigation, conducted by a group of people who see the importance of seeking answers to an important problem” (p. 140). He proposes that classroom discussion should be viewed as a “cycle of inquiry” in which the following elements must be present:

- **Concept Development**—write a guiding question that defines the guiding question and ask students to try initial answers (Clarke, 1988, p. 141).
- **Concept Clarification**—describe in writing the problem students face during the class, emphasizing its origins and its implications (Clarke, 1988, p. 141).
- **Verification**—ask students to search the text for factual evidence that helps clarify the concepts or problem (Clarke, 1988, p. 141).
- **Analysis**—ask students to free-write conclusions that reconcile what they have thought and what they have heard (post-writing) (Clarke, 1988, p. 142).

Clarke argues that by using the “cycle of inquiry” in designing a dialogic classroom environment, we allow students to build upon their own knowledge and practice inquiry. Personal involvement, according to Clarke, may be the key to higher order thinking.

Clarke’s cycle of inquiry is essentially an applied version of Garrison (Garrison, 1991) and Henri’s (Henri, 1991) models of critical thinking discussed earlier, yet Clarke makes the strong point that the design of the instruction plays a significant role in
facilitating critical thinking. It should also be noted that blended learning environments provide an excellent venue for dialogic learning to take place because students have the opportunity to have both face-to-face and online discussions.

Another perspective on facilitating critical thinking in the classroom is that of John Freie. Freie (1987) suggests that in order for critical thinking to take place, it is essential that students be able to participate in the process of developing a thesis from multiple perspectives. From this, Freie hypothesizes that students have an opportunity to see how the critiquing of these alternatives allows for the formation of a strong thesis. One way to facilitate this process in the classroom is referred to as methodological believing (Elbow, 2008). Elbow describes methodological believing as “the disciplined practice of trying to be as welcoming or accepting as possible to every idea we encounter: not just listing to views different from our own and holding back from arguing with them; not just trying to restate them without bias; but actually trying to believe them” (Elbow, 2008, p. 1).

While Freie and Elbow’s ideas of methodological believing may seem to contrast McPeck’s definition of critical thinking “the propensity and skill to engage in an activity with reflective skepticism” (McPeck, 1981), Freie argues that the challenge with critical thinking in the classroom is to design instruction that allows students to try out multiple perspectives in a “rigorous and systematic way”, without the pressure of determining whether their answers are right or wrong (Freie, 1987, p. 89).

For methodological believing to take place in the classroom Freie suggests that there are several conditions that should be present:
• Issues should be concrete, but still allow for higher levels of abstraction. The topic should in some way be relatable to the student’s previous experiences.

• Issues should allow for two or more perspectives so that students become aware of the “complexities and ambiguities” associated with the issue through their examination of the arguments.

• Ensure that expert opinions are available to students. Ideally this would include bringing in an expert with the opportunity for the children to question them, but it can also be done through the writings or lectures of experts on the topic being discussed (Freie, 1987, p. 91).

• Encourage a dialogic environment in the classroom. Students learn to examine critically when they are allowed to communicate their ideas and have the opportunity to listen to their peer’s ideas as well (Freie, 1987, p. 91).

• Create an environment where students feel to express even the most “off the wall” ideas and interpretations (Freie, 1987, p. 91).

• Design the course to provide students with the opportunity to understand the dimensions of the issue and allow them to make their own judgments after they have examined the logic behind the issue and the evidence created by it (Freie, 1987, p. 91).

• Place an emphasis on conclusions being tentative. Point out to students that there are many different truths to be found in any issue (Freie, 1987, p. 91).

Teaching presence in the classroom is another essential element to facilitating critical thinking in an online environment. Teaching presence is particularly important in
online situations where the students are not always physically interacting with the instructor. Online components like course readings, discussion forums, and blogs are all directly tied to teaching presence. Anderson, Rourke, Garrison, and Archer (2001) describe three categories of teaching presence that should be represented in online courses to facilitate critical thinking.

The first category involves the design and organization of the course. Anderson et al. (2001), suggest that building a course online can be very helpful in helping the instructor think through the organizational structure and design of the course. It is also interesting to note that in the online portion of the course, the course becomes more transparent to both the instructor and the students, putting everyone on a more level playing field and removing some of the power that the instructor has in a face-to-face environment where the course design is not as evident.

The second category is facilitating discourse. As discussed at length previously (Clarke, 1988; Freie, 1987; Garrison, 1991; Reznitskaya et al., 2009; Smith, 2008), discourse is “critical to maintaining the interest, motivation and engagement of students in active learning” (Anderson et al., 2001, p. 7). Examples of indicators for facilitating discourse are listed by Anderson et al. (2001, p.8).

- Identifying areas of agreement/disagreement
- Seeking to reach consensus/understanding
- Encouraging, acknowledging, or reinforcing student contribution
- Setting a climate for learning
- Drawing in participants, promoting discussion
Assess the efficacy of the process

The third category is direct instruction in which the teacher provides leadership and shares their knowledge about the subject matter with their students. Direct instruction provides the “intellectual climate” for the course and a model for the quality of work that the students are expected to produce. Anderson et al. (2001) caution that while there is significant debate among educators about whether instructors should fulfill the guide on the side or the sage on the stage role, the instructor’s ability to scaffold learning plays a critical role in social cognition models like Community of Inquiry (Garrison & Cleveland-Innes, 2005).

Garrison (1991) refers to the dialogue and discussion between the student and the instructor as a “learning conversation”. Yet he stresses that for this conversation to be an interactive enquiry, the teacher must adopt a critical manner that showcases the teacher’s commitment to subject all beliefs to skepticism and allow students the opportunity to justify or reject those beliefs based on reasonable, reflective thinking focused on deciding what to believe or do (Ennis, 1991; Garrison, 1991; McPeck, 1981). This idea of interactive inquiry, ties in nicely with the philosophies that this case study uses in defining critical thinking. Additionally, the Newman et al. Model of Critical Thinking (1995) Critical Assessment code is designed to indicate the presence of Community of Inquiry (cognitive presence, instructor presence, and social presence) by documenting comments by peers or the instructor that provide meaningful assessments of student work.
As with dialogic teaching, modeling critical thinking is not always an easy task for instructors. Particularly when teachers are used to a more didactic role in the classroom, it is often difficult for them to subject their own beliefs, values, and ideas to critical analysis by their students. Brookfield (1990) states the process eloquently when he writes: “The ideological outcome of a critical dialogue must always be open, and educators must always be open to the possibility that engaging in this dialogue may cause them to alter some of their most strongly held, fundamental assumptions. Critical teachers must be seen to be critical learners” (p. 30).

How the instructor responds to students can also help to facilitate critical thinking in face-to-face and online environments. Flanders (1970) analyzed teacher response behaviors in the classroom and categorized their responses to students as either terminal (closed responses) or open (extending responses). Terminal responses involved criticism or praise; and open responses included silence (wait time), acceptance (passive, active or emphatic), clarification, and the facilitation of data acquisition.

While the impact of criticism in clearly obvious, it is interesting that Flanders also cites praise as being a terminating factor in classroom discussion. Many teachers and parents view praise a positive way to reinforce a particular behavior, but in reality it often has the opposite effect when it comes to critical thinking. Garrison (1991) suggests that where critical thinking in the classroom is the ultimate goal, praise often encourages the class or group to conform to the ideas or viewpoints of the student being praised and does not encourage independent, outside of the box thinking.
Most K-12 and higher education institutions still predominately use didactic or fact-based lecture-style instruction. However, research suggests that dialogic instruction promotes critical thinking in both face-to-face and online environments (Paul, 1993; Reznitskaya et al., 2009; Sternberg et al., 2008). Research has also shown that the presence of the instructor also has a significant impact on critical thinking. Ensuring that teacher responses are open extending responses as defined by Flanders (1970) helps facilitate critical thinking in the classroom.

**Social Elements that Facilitate Critical Thinking in a Blended Learning Gifted Classroom**

Social presence also plays a role in facilitating critical thinking in a blended learning environment. In designing online learning, the impact that social presence has on critical thinking cannot be ignored. Pena-Shaff and Nicholls (2004) found that over 90% of students participating in online discourse frequently checked to see if other students had replied to their posts. They suggest that their expectancy of feedback not only motivates students to participate, but also encourages critical feedback that they believe is useful to their peers.

Social presence is seen as being particularly important in blended learning environments where learner interactions are highly intellectual as well socially and emotionally connected (Lee & Bonk, 2016). This is often the case in gifted classrooms. Ng and Nicholas (2007) suggest that this phenomenon may be the constructionism theory in which learning is facilitated when students are constructing a public artifact to be viewed, critiqued and perhaps used by others.
As discussed previously, asynchronous discussions that occur within blog and discussion forums are a critical factor in a successful blended learning environment. Swan (2003) found that social presence in an online environment supports both reflection and collaboration and correlates significantly not only with students’ perceptions of satisfaction but also with learning from online courses. Peer edits are another way that students can benefit from social presence in the online component of a course. Cloud-based tools such as Google Docs can give students the opportunity to reflect on their peer’s work as well as collaborate with them in real time. Peer edits can provide students with more immediate feedback and suggestions as they continue to develop their final writing assignments.

In their research on developing a framework for developing and implementing an online community, Khoo, Forret and Cowie (2009) found that online communities form when peers engage in asking each other questions, reflecting and elaborating on topics of discussion, and providing high levels of feedback. Given the elements of critical thinking within the Newman et al. (1995) model, it seems evident that the formation of an online community would facilitate many aspects of critical thinking including but not limited to: **relevance, novelty, ambiguities, linking ideas, critical assessment, and width of understanding**. Several studies examining the effects of social presence in online learning have found that when instruction is designed to facilitate the formation of online communities critical thinking and higher levels of learning are more prevalent than they are in online courses that do not foster social presence (Anderson et al., 2001; Elaine Khoo & Cowie, 2011; Newman et al., 1997; Ng & Nicholas, 2010; Swan, 2003).
Summary

The intent of this case study is to examine how critical thinking can be facilitated in a literature course for profoundly gifted high-school students within the online component of a blended learning environment. The data obtained from this study focuses on the tools and strategies that can be used to facilitate critical thinking. This focus on higher order thinking and critical thought is referred to by Garrison et al. (2001b) as cognitive presence.

The Newman Model of Critical Thinking used as the theoretical framework for this study is based in part on the work of Garrison et al. (1991). As Garrison continued his research on critical thinking the idea that while critical thinking or cognitive presence is facilitated by appropriate tools and strategies, it is supported by teaching and social presence (Garrison et al., 2001a). Garrison calls this model where online learning is designed around cognitive presence, teaching presence and social presence—Community of Inquiry.

While this study is focused on the cognitive presence, specifically looking at strategies and tools that facilitate critical thinking, the literature review includes teaching and social presence because they both play a critical role in the design of the strategies and tools that are implemented in this case study.
Chapter 3 Methodology

This research used a case study method to examine critical thinking in the online component of a blended learning environment. The case study design was selected because it provides an opportunity to examine the phenomenology of critical thinking taking place in various discussion strategies using common asynchronous writing tools, through the lens of profoundly gifted high school students. By definition, the case study design of this research allows the phenomenon of critical thinking in a gifted high school blended learning environment to be investigated in depth and in the context of a real-world classroom.

Research Context

The purpose of this research project is to examine how critical thinking can be facilitated in a literature course for profoundly gifted high-school students within the online component of a blended learning environment. From a reflexivity standpoint, this research began from personal experiences with meeting the needs of gifted students and participating as a student in online blogs and discussion forums. The researcher was interested in investigating critical thinking in an online context particularly with gifted students. Two of her children were identified as profoundly gifted and both were homeschooled for several years to provide them with an educational experience that met their needs. During that time, the researcher worked with several gifted organizations in an effort to meet the needs of the children at home and at school. The facilitation of critical thinking in writing became an area of interest for the researcher in an effort to encourage
children with a propensity for math and science to understand the value of logic and thought in writing.

As a graduate student the researcher participated in several online and blended college level courses noticing a lack of critical thought in many of the online discussion responses from students. It was also clear that there was an underlying dissatisfaction in their usefulness by both students and instructors.

The researcher became interested in how critical thinking could be facilitated in a course for profoundly gifted students after a visit to the case school. During that visit, a conversation with the instructor for the course used in this case study revealed that while the school was very interested in including blended learning courses in their curriculum, there was concern that the students, while all proficient writers, might have difficulty incorporating critical thought into their written work if class discussions were moved online. This conversation led to the research presented in this case study.

Certainly the researcher’s background provided many opportunities for reflexive bracketing in designing this case study. A bachelor’s degree in journalism prompted an interest and logical, critical, writing; a professional background in literary analysis; experience with gifted populations from both an academic and social lens; and contacts and informational resources within the gifted community helped to inform this research but also reflect the researcher’s values and areas of interest. As the case study design began to develop there was subjectivity from both the researcher’s experiences, the instructor’s experiences, and the case school’s expectations of student participant performance.
• The bar would be set higher for students at a school for profoundly gifted students.
• Profoundly gifted students may struggle more with social interaction online.
• Profoundly gifted students are already good at implementing critical thinking into their writing.
• The instructor’s concerns that moving the students to a blended environment would compromise the objectives of the course.
• Researcher’s concerns that the study could be cancelled if the school or the instructor felt the objectives of the course would be compromised.
• Careful design of the blended environment could compensate for Community of Inquiry.

**Defining the Case**

The case study was carried out at a free public day school for profoundly gifted middle and high school students, located on the campus of a state university in the Western United States. To be eligible for admission, the student must have scores in the top one-tenth of one percent on a standardized IQ test and be working at the middle school or high school level. During the 2014-2015 academic year, the school had an enrollment of 137 students. The class of 2015 had 17 students.

The case study was carried out using one section of the course, Critical Theory. This is a year-long course being offered for the 2014-2015 academic year. The official course description is as follows:
This course will explore critical theory as it specifically applies to literary criticism. Works of fiction will be thoroughly explicated each semester. Along with the fiction texts, students will read a wide variety of literary criticism. The course will primarily consist of reading – discussion components with formal writing components becoming the primary focus... although reading and discussion will obviously continue to accompany these efforts. The primary lens we will apply to our analytical endeavors will be a modified and updated form of literary criticism known as formalism and the primary historical and aesthetic focus will be on the Victorian Gothic. (Case school course catalog)

The course objectives are as follows:

I would like to introduce students to Formalism, which is an older model of literary analysis that predates the current fascination with theorists like Derrida and Foucault. Formalism does not privilege exterior voices of authority, such as post structuralism, Marxism, gender theory etc. where literary analysis is concerned. A formalist approach is one that adheres to a close reading of the text and attempts to explain, describe, or gain insight from the various features contained in the text itself. Along with the basics of formalism we will also explore the adjunct concept of psychoanalytical interpretation as we grapple with the Victorian Gothic. I have observed student writing as DA English students move through the various levels of our HS English program and I have noted that while students in the upper level classes have a keen sense of how to produce formal essays that are structurally sound there is still a kind of breathless listing
quality that continues to pervade even the best pieces of student writing. In the interest of breaking away from this breathless listing I will banish the essay from this course and replace it with smaller pieces of explication that require you to linger over a narrow scope and drill down for deeper thinking and greater attention to detail. In the spirit of explication, we will formally explore multiple motifs, narrative stances, themes etc. within the same novel rather than producing thesis statements and defending a single argument or position for a given text.

(Case school course catalog)

The case school is unique in that at the high school level it does not classify students by grade, but rather categorizes the course work into Phases 1-4. The Critical Theory course fulfills a core English requirement in Phase 3 or Phase 4 of the high school curriculum. The section used in this case study are students completing their Phase 4 English requirement. The objective for the course is to promote “deeper thinking and greater attention to detail” by critically analyzing text from a formalist perspective.

Seven students were registered for the Phase 4 section of the course, and all of the students in the course had completed Phases 1-3 of the Core English requirement before enrolling. At the high school level, there were no other blended learning classes offered and students spent their day on the school campus in face-to-face learning environments. The exception to this would be students who were registered for individual college-level courses on the adjacent university campus. All seven students registered for the Phase 4 section of the Critical Theory course were participants in the study, thus making course registration the criteria for inclusion in the study. The Institutional Research Board has
approved this research based on Category 1—research conducted in established or commonly accepted educational settings, involving normal educational practices. An amendment to the study was also been approved to wave consent based on the course registration as the criteria for inclusion in the study.

As part of the piloted needs analysis that took place fall semester, the instructor of the course discussed her decision to use Blackboard as a repository for materials and assignments. The intent was to move the class toward a more blended learning environment, a long-term goal for the design of the course. Assignments were posted by the week and PDFs of reading materials were attached. As the course progressed, the instructor found it to be cumbersome to use Blackboard in a discussion-based course where assignments and materials evolved quickly with the progress of the students. With the dynamics of the course, the instructor found printed paper weekly schedules and handouts of materials to be the most efficient way to manage the class and beginning second semester, Blackboard was no longer updated.

Critical Theory is a writing intensive course, with weekly writing assignments. Peer edits and/or instructor feedback were provided for most assignments. Students were responsible for determining the logistics in how to peer edit work—with some opting to share documents, exchange printed copies, or work in Google Docs. The instructor chose to use Turn-it-In for all assignments (including peer edits) in an effort to create an electronic portfolio system where all student course work was housed. As previously stated, the actual peer edits occur in several different formats, but all student work was submitted to Turn-it-In. The instructor also used this format to provide feedback to
students on assessed assignments. This process seemed to work well for both the student and instructor and they consistently used Turn-it-In throughout the school year before this study began. It should be noted that Turn-it-In was being used in this context as an electronic portfolio system. While Turn-it-In is often thought of as a plagiarism checker, this feature was not used in the Critical Theory course.

The focus of this course is critical theory in literature. Students read several books throughout the course, along with literary criticisms for each book. The course materials included *Case Studies in Contemporary Criticism: Turn of the Screw* by Henry James, edited by Peter G. Beidler; *Heart of Darkness: A Norton Critical Edition* by Joseph Conrad, edited by Paul B. Armstrong; and *Carmilla: A Critical Edition* by Joseph Sheridan Le Fanu, edited by Kathleen Costello-Sullivan. *Turn of the Screw* and *Heart of Darkness* were taught exclusively in a face-to-face environment. *Carmilla* was taught in a blended learning environment with face-to-face meetings four days of the week and an asynchronous online component that included discussion forums, blogs, and online writing assignments in Google Docs. This portion of the course comprised the six-week case study examining how critical thinking can be facilitated in a literature course for profoundly gifted high school students in a blended learning environment.

**Selection of the Case**

The choice to use the case school in this study was significantly influenced by the narrow admission criteria used in creating a school exclusively for profoundly gifted students. There are less than 20 high schools in the United States that have similar admissions criteria (“Schools for the gifted child,” 2015). For this study, the selection of
the case school provided the opportunity for extreme purposeful sampling of the phenomenon (Patton, 2014).

The Critical Theory course was selected for several reasons. First, the course is offered at a school for profoundly gifted students. As mentioned in Chapter 2, there is research to indicate that blended learning can be quite beneficial in creating positive learning environments for gifted students, yet very little research has been done on facilitating critical thinking with this population in a blended learning environment (Dai, Swanson, & Cheng, 2011; Periathiruvadi & Rinn, 2012). Second, the school and the instructor for the course were enthusiastic about creating blended learning courses but were concerned about compromising the quality of discussion in the online portion of the course. Third, the instructor’s assessment of the student’s work indicated that while they were all proficient writers, they had difficulty incorporating critical thought into their written work. This caused concern in moving the course to a blended learning design until it could be demonstrated that critical thinking was taking place in the student’s online writing.

A number of difficulties arose in trying to find an appropriate case for this study. There are very few case studies examining blended learning in gifted populations in part because most gifted students in the U.S. attend classes where gifted students are not differentiated from the student population, particularly at the high school level. Defining gifted and talented populations for a case study can be difficult, and the criteria for admission to most gifted programs in the U.S. is designed to include as wide of a range of gifted and talented students as possible. While a broad definition of gifted has been
shown to have merit, for the purposes of this study a narrower definition helps to standardize the data. The unit of analysis chosen for this case study avoided many of these difficulties and provides an excellent lens from which to look at critical thinking in a profoundly gifted high school blended learning environment.

**Case Study Design**

This case study was a single, holistic study that examined the blended learning environment in one section of a Critical Theory course at a high school for profoundly gifted students. Newman’s Model of Critical Thinking (Newman et al., 1995) provided the theoretical framework for examining critical thinking in the online component of the course.

Five sources of data were analyzed as part of this case study. Their relationships to the elements of the study are shown in Table 3, below.

- Direct observation of the face-to-face and online portions of the course.
- Document analysis of emails with the instructor and student written pre and post answers to questions about the study.
- Participant observation in which the researcher participated as an observer and facilitator of the online discussion forums, blog postings, and Google Docs.
- Physical artifacts in the form of student written responses to forum questions, blog assignments, and Google Docs assignments.
- Non-structured interviews with the instructor.

A significant portion of data collected for this study was obtained from physical artifacts using summative content analysis within the theoretical framework of Newman’s model
to assess critical thinking in the student’s work. Direct observation, document analysis, participant observation, and non-structured interviews provide triangulation for the physical artifact data and were analyzed from an emergent design perspective and used as a way of establishing the convergence of evidence from different data sources.

Table 3

*Case Study Design*

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Elements of the Study</th>
</tr>
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<tbody>
<tr>
<td>Observation (direct)</td>
<td>Meet with instructor (weekly)</td>
</tr>
<tr>
<td>Documents</td>
<td>✓</td>
</tr>
<tr>
<td>Observation (participant)</td>
<td></td>
</tr>
<tr>
<td>Artifacts</td>
<td></td>
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<tr>
<td>Interview</td>
<td>✓</td>
</tr>
</tbody>
</table>

*The Learning Management System.* The platform for the discussion questions, blog posts and Google Doc assignments is a learning management system (LMS) designed by the researcher specifically for this Critical Theory course using Sites in Google Apps for Education (see Appendix A for complete documentation, including rationale and implementation). In preparation for the conversion to a blended learning environment a needs analysis of the face-to-face critical theory course was piloted.
During this two-week period, the class was observed, and informal discussions took place with the instructor about her vision for the implementation of a blended learning course. The technology coordinator of the school was also interviewed to determine specific technology issues that could be encountered in implementing an online component to the course. Brief informal discussions also took place with the students in the course.

Through this process, the following needs were determined:

- An LMS that allows the course to evolve with student learning.
- An LMS that can be modified quickly and efficiently.
- A secure and stable mail system for the course that is included as part of the LMS.
- A calendar as part of the LMS for quick access to the course schedule.
- A component of the LMS that allows students to peer edit documents electronically at school and at home on computers and mobile devices.
- A component of the LMS that allows the instructor to comment on and grade student work.
- A discussion forum that allows students and the instructor to post comments and answers to questions.
- A blog that allows students to post their ideas and opinions on the readings.

Based upon these requirements, it was determined that Google Apps for Education, a suite of productivity tools that can be used with a school’s .edu domain, was the most appropriate platform for the LMS. The following Google applications have been used in the design of the LMS, and the Home page of the Critical Theory course is shown in Figure 2.
• Google Sites—a shared workspace where the Learning Management System for the course was housed.

• Gmail—a mail system with unique user names and passwords created specifically for communication between the students and the instructor of the course.

• Google Calendar—a calendar that integrates with other applications within the Google Apps suite.

• Google Drive—a cloud-based storage application that allows the student and the instructor to access files from any device with Internet.

• Google Docs—a platform for creating documents, spreadsheets, and presentations within a browser allowing for synchronous and asynchronous group collaboration.

Based upon the results of the pilot and the applications available within Google Apps for Education, the LMS was designed to support the online portion of the blended
learning Critical Theory course in the case study. During the pilot of this study, Blackboard 9.1 was used and both the instructor and students expressed frustration that it did not lend itself well to a course that evolved on a week-to-week basis. According the instructor, the LMS was time consuming to update and hard copies of assignments and course schedules were more efficient. In creating a blended learning environment, it is essential that the instructor and students have a learning management system in place that meets the needs of the course. The online portion of the course was implemented through the LMS platform and in order to create a cohesive blended learning course.

Elements of the LMS and their functions are listed below:

- **Home**—the home page lists course announcements listed by date with the most recent announcement appearing first. The instructor and the researcher had permission to enter new announcements.

- **Calendar**—the calendar page provided students with the course schedule and gave them a quick view of when assignments and projects were due. It was updated in the Calendar App of Google Apps for Education and not in the LMS itself. While not ideal, it was the only option for this design. As part of the research project, the calendar was maintained by the researcher based on updates from the instructor.

- **Assignments**—the assignment page allowed the instructor to add assignments quickly and efficient. Its design was catered to the dynamic elements of the course. Students were able to quickly view assignments on any computer or mobile device. The pull-down of the Assignments page allowed students and the
instructor to access assignments for each week of the course. Assignments remained on the website for the length of the study.

- **Resources**—the resource page housed all of the readings and course materials for the course. Students had the ability to download documents or materials or read them online. Resources were organized by week to allow students and the instructor to find documents and materials quickly and efficiently.

- **Discussion Forum**—the discussion forum page was used to promote online discussions. Students responded to prompts using specific strategies designed for the study. They also had the capability to respond to other student posts to promote social presence.

- **Blog**—the blog page was used to replace class “rants” that had been assigned to the class throughout the course. Students posted on the blog page in response to instructor prompts and had the capability to respond to other students to promote social presence.

- **Peer Edits**—the peer edits provided students with access to the Google Drive where their documents were stored. Students only had access to their own folder based upon their log-in ID. Once in their folder they could share documents with a peer or the instructor for editing.

- **Portfolio**—the portfolio page gave students access to the Google Drive where all of their documents were stored. The portfolio folder within Google Drive housed all of the student’s documents and served as an archive of their course work. The instructor had permissions to access student work and to make comments.
A detailed description of the LMS with documentation can be found in Appendix A.

**Case Study Protocol**

This case study took place at a free public day school for profoundly gifted students located in the Western United States. It was carried out using one section of the course, Critical Theory. The following questions were addressed while collecting the data for this case study.

1. What critical thinking skills are profoundly gifted high school students using in their online writing?
   a. What critical thinking skills are they missing?

2. How can online tools and strategies facilitate critical thinking in a literature course for profoundly gifted high-school students in a blended learning environment?
   a. How do online tools (discussion forums, blogs, Google Docs) influence critical thinking?
   b. How do instructional strategies (structured, scaffolded, open-ended, debate/argument, role play, peer edits, literary criticism) influence critical thinking?

This is a year-long course being offered for the 2014-2015 academic year. The study took place over the course of 6 weeks, during which time the class read *Carmilla*, by Joseph Sheridan Le Fanu. They used an edition of the book edited by Kathleen Costello-Sullivan, which contains several of the literary criticism readings for the unit.
The course met face-to-face, four times a week, Monday through Thursday, for the duration of the case study. As part of the piloted needs analysis, it was determined that the face-to-face meetings work well for group discussions, but both the instructor and the researcher felt that the discussion was often dominated by two or three students. It was hoped that online discussions would allow time and space to foster more critical thinking and provide a platform for all students to participate. Table 4 represents the components of the case study and a rationale for their inclusion. The six-week study consisted of the following protocol.

Week 1

- 1 discussion forum posting (pre study practice using LMS)
- 1 blog posting postings (pre study document analysis and participant observation data collection)
- 1 prestudy discussion question posting (pre study)
- 1 movie—in class (direct observation data collection)
- Non structured interview with instructor

Week 2

- 3 discussion forum postings—structured questions (content analysis of artifact and participant observation data collection)
- 1 blog posting—open (content analysis of artifact and participant observation data collection)
- 4 in-class discussions (direct observation data collection)
- 3 assigned readings (participant observation data collection)
- Non structured interview with instructor

Week 3

- 3 discussion forum postings—scaffolded questions (content analysis of artifact and participant observation data collection)
- 1 blog posting—create an argument (content analysis of artifact and participant observation data collection)
- 4 in-class discussions (teacher non-structured interview data collection)
- 2 assigned readings (participant observation data collection)

Week 4

- 3 discussion forum postings—scaffolded questions (content analysis of artifact and participant observation data collection)
— 1 blog posting—role play (content analysis of artifact and participant observation data collection)
— 4 in-class discussions (teacher non-structured interview data collection)
— 2 assigned readings (participant observation data collection)

Week 5
— Write literary critique for peer edit (content analysis of artifact and participant observation data collection)
— Peer edit literary critique (content analysis of artifact and participant observation data collection)
— Re-write literary critique (content analysis of artifact and participant observation data collection)
— 4 in-class discussions (teacher non-structured interview data collection)

Week 6
— Write draft of literary analysis (content analysis of artifact and participant observation data collection)
— Write final version of literary analysis (content analysis of artifact and participant observation data collection)
— Post study online survey (participant observation data collection)
— 4 in-class discussions
— Teacher non-structured interview data collection
Table 4

*Components of the Critical Theory Case Study*

<table>
<thead>
<tr>
<th>Face-to Face</th>
<th>Online Component</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Observation (weeks 1 and 2)</td>
<td>Classroom Observation (weeks 3, 4, 5, 6)</td>
<td>Direct observation</td>
</tr>
<tr>
<td>Classroom Discussion with students about study and LMS (weeks 1 - 2)</td>
<td>Participant observation</td>
<td>Member check Pilot LMS</td>
</tr>
<tr>
<td>Classroom Discussion with students and instructor (weeks 1-6)</td>
<td>Forum — pre data collection (week 1)</td>
<td>Member check Pre study data</td>
</tr>
<tr>
<td></td>
<td>Forum (weeks 2, 3, 4)</td>
<td>Content analysis of critical thinking</td>
</tr>
<tr>
<td></td>
<td>Blog — pre data collection (week 1)</td>
<td>Member check Pre study data</td>
</tr>
<tr>
<td></td>
<td>Blog (weeks 2, 3, 4)</td>
<td>Content analysis of critical thinking</td>
</tr>
<tr>
<td></td>
<td>Pre-data collection test document (week 1)</td>
<td>LMS practice</td>
</tr>
<tr>
<td>Meeting with Instructor (weeks 1 and 2)</td>
<td>Peer Edits—Group and Independent writing (weeks 5 and 6)</td>
<td>Content analysis of critical thinking</td>
</tr>
<tr>
<td></td>
<td>Meeting with Instructor (weeks 3, 4, 5, 6)</td>
<td>Member check Inform Design</td>
</tr>
<tr>
<td></td>
<td>Poststudy-Instructor</td>
<td>Member check</td>
</tr>
<tr>
<td></td>
<td>Poststudy-Students</td>
<td>Member check</td>
</tr>
</tbody>
</table>
Analyzing Data

For this research, the Newman, Webb, and Cochrane Critical Thinking Model (Newman et al., 1995) was used as part of the holistic single case study. As previously mentioned, validity strategies such as triangulation and member checking was used as part of the research protocol. Several methods have been used by researchers in the past to evaluate critical thinking. Content analysis is one method that many researchers have found to be useful when evaluating online learning for evidence of critical thought (Garrison et al., 2000b; Newman et al., 1995; Ng & Nicholas, 2007; Wickersham & Dooley, 2006).

The use of content analysis to analyze text-based content can present some issues with validity and reliability and the Newman, Cochrane, Webb model is no exception. It is suggested that some of these issues present themselves due to the “quantitative-based qualitative approach” of examining verbal data but looking at the frequency of the codes quantitatively (Chi, 1997, p. 7).

This study used the Newman et al. (1995) content analysis method to measure critical thinking in the online component of the case study Critical Theory course. The method was chosen because it specifically addresses the concerns of critical thinking in group learning through the process of using content analysis within electronic discourse. Additionally, Newman et al. (1995) provide a detailed description of their analysis method in an effort to encourage other researchers to replicate and improve upon the method.
As class sizes increase, and underrepresented populations like the gifted seek educational opportunities outside of the traditional classroom, computer-supported co-operative work (CSCW) has become an increasingly viable option. Since the 1990s, many researchers have tried to address whether the quality of work can be maintained in an online environment. Newman et al. (1995) propose that content analysis is one of the few ways to analyze content and draw conclusions about the critical thinking that takes place in online discourse. The strong theoretical framework described below emphasizes Newman et al.’s (1995) focus on construct validity.

It should be noted here that in all disciplines, the types of questions asked by the instructor influence critical thinking. When thought-provoking questions are presented to students that go beyond factual statements, more questions tend to be generated by both the responder and the peers who read their responses. This technique used to teach critical thinking is designed to place the ownership of responsibly modeling critical thinking on the instructor with students accepting more responsibility as they become more proficient in their own critical thinking (MacKnight, 2000).

While some scholars argue that critical thinking should be explicitly taught as formal instruction in argumentation and the philosophy of logic (Paul et al., 2013), this model of critical thinking instruction did not conform with the structure of the course in this case study. As a consequence, students were not informed of the specific areas of critical thinking that are represented in the data, but questions and strategies were designed to specifically address instances of critical thinking within the critical thinking model used in this case study.
Newman et al.’s (1995) content analysis model for examining critical thinking in online environments is based on the theoretical framework of two earlier models. Henri’s (1991) framework, that included five dimensions: participative, social, interactive, cognitive, and metacognitive; and Garrison’s (1991) critical thinking and problem solving model that included clarification, in-depth clarification, inference, judgment, and strategy formation. In creating a new content analysis method to evaluate critical thinking online, Newman et al. (1995) attempted to address three issues that they saw with Henri and Garrison’s work.

- Henri’s cognitive skills were broad and could be difficult to define clearly in online writing.
- Garrison’s model address stages of critical thinking that may be more reflective of an individual’s critical thinking process than the actual critical thought going on in computer mediated discourse.
- Neither model differentiates between positive indicators of critical thinking or a clear example where critical thought is not taking place.

The design of the Newman et al. (1995) model defines ten categories of critical thought (see Table 5). The entire model with all subcategories can be found in Appendix B.
Table 5

*Newman et al. Model of Content Analysis for Critical Thinking Online*

<table>
<thead>
<tr>
<th>Categories</th>
<th>Code</th>
<th>Subcategories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance (relevant statements)</td>
<td>R±</td>
<td>2</td>
</tr>
<tr>
<td>Importance (important points/issues)</td>
<td>I±</td>
<td>2</td>
</tr>
<tr>
<td>Novelty (new information, ideas, or solutions)</td>
<td>N±</td>
<td>10</td>
</tr>
<tr>
<td>Outside knowledge or experience</td>
<td>O±</td>
<td>8</td>
</tr>
<tr>
<td>Ambiguities (clarified or confused)</td>
<td>A±</td>
<td>4</td>
</tr>
<tr>
<td>Linking ideas or interpretations</td>
<td>L±</td>
<td>4</td>
</tr>
<tr>
<td>Justification (justifying solutions or judgements)</td>
<td>J±</td>
<td>6</td>
</tr>
<tr>
<td>Critical Assessment (assessment of contribution)</td>
<td>C±</td>
<td>4</td>
</tr>
<tr>
<td>Practical Utility (grounding)</td>
<td>P±</td>
<td>4</td>
</tr>
<tr>
<td>Width of Understanding (complete picture)</td>
<td>W±</td>
<td>2</td>
</tr>
</tbody>
</table>

*Note.* Categories of critical thinking with code and number of subcategories. From (Newman et al., 1995).

The Newman et al. (1995) model codes are focused in definition, straightforward and relatively easy to apply. In interpreting the codes, the following expanded definitions for each category of critical thinking were helpful when ambiguity was present. Typically, one code deemed most relevant to the thought or phrase was used, however in some cases, more than one element of critical thinking was exhibited in the coded sentence or phrase resulting in multiple codes. It should be noted that these expanded definitions are interpretations made by the researcher specifically for the critical theory
literature course in this case study. They provide a foundation for interpreting any ambiguity that may be present in the Newman et al. (1995) model as applied specifically to this study.

- **Relevance**—related to or connected to the course material.
- **Importance**—points that bring great significance or value to the course material.
- **Novelty**—new or original thoughts or ideas that have not been mentioned previously in class or by other students.
- **Outside Knowledge or Experience**—bringing new information or insights from outside readings or experiences. These were often insights or knowledge from previous novels and a developing understanding of critical theory in literature.
- **Ambiguities**—students address uncertainty of meaning often offering plausible interpretations.
- **Linking Ideas**—Ideas that connect with other ideas that can be used to develop a coherent understanding of the themes and motifs of the novel.
- **Justification**—providing an acceptable reason for making a statement or claim often exhibited by citing a supporting passage or quote from the book.
- **Critical Assessment**—making a judgement based on careful consideration of the evidence provided (allows for instructor and peer assessment).
- **Practical Utility**—putting information into a useful context that allows for further interpretation of the novel.
- **Width of Understanding**—exhibiting the ability to reflect on the themes and motifs of the novel across disciplines in a coherent and productive way.
In this case study, Newman et al.’s (1995) Critical Thinking Model was applied to online discussion posts, blog posts, and Google Docs. The transcripts from these writing tools were coded using MAXQDA for OS X, a qualitative data analysis software package. According to the model, statements that are evaluated (referred to as units of analysis) can be phrases, sentences, paragraphs or messages but should contain one unit of meaning that is an example of a category within the model. It is possible for indicators to overlap.

Once the transcripts had been coded, the number of plus or minus subcategory indicators were counted separately and sorted into the ten categories of the critical thinking model. The absence of a significant number of negative subcategories was an unexpected finding in this case study that eliminated the need to use the critical thinking ratio however the specifics are detailed here to provide a context for how the critical thinking ratio is used in the Newman et al. (1995) Critical Thinking model.

The depth of critical thinking is calculated based on the coded critical thinking indicators. The critical thinking ratio varies from a -1 where an uncritical statement is made to a +1 where a critical statement is made. The ratio is calculated for each category using the following formula:

\[
\text{Depth of critical thinking ratio} = \frac{(x^+ - x^-)}{(x^+ + x^-)}.
\]

Where \(x\) is the variable for one of the critical thinking indicators in the model; \(x^+\) is equal to the count of positive critical thinking statements; and \(x^-\) is equal to the count of negative critical thinking statements. By using a critical thinking ratio, the data is independent of the quantity of participation and only reflects the quality of critical
thinking taking place in the writing (Newman et al., 1995). Table 6 below shows sample data with a calculated critical thinking ratio.

Table 6

*How to Calculate Critical Thinking Ratios (sample data)*

<table>
<thead>
<tr>
<th>Code</th>
<th>+</th>
<th>-</th>
<th>Critical Thinking Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>R±</td>
<td>48</td>
<td>3</td>
<td>(48 - 3) / (48 + 3) = .88</td>
</tr>
<tr>
<td>l±</td>
<td>33</td>
<td>2</td>
<td>(33 - 2) / (33 + 2) = .89</td>
</tr>
<tr>
<td>N±</td>
<td>24</td>
<td>11</td>
<td>(24 - 11) / (24 + 11) = .37</td>
</tr>
<tr>
<td>O±</td>
<td>2</td>
<td>2</td>
<td>(2 - 2) / (2 + 2) = *</td>
</tr>
<tr>
<td>A±</td>
<td>35</td>
<td>0</td>
<td>(35 - 0) / (35 + 0) = 1.0</td>
</tr>
<tr>
<td>L±</td>
<td>18</td>
<td>2</td>
<td>(18 - 2) / (18 + 2) = .80</td>
</tr>
<tr>
<td>J±</td>
<td>27</td>
<td>5</td>
<td>(27 - 5) / (27 + 5) = .69</td>
</tr>
<tr>
<td>C±</td>
<td>35</td>
<td>2</td>
<td>(35 - 2) / (35 + 2) = .89</td>
</tr>
<tr>
<td>P±</td>
<td>1</td>
<td>0</td>
<td>(1 - 0) / (1 + 0) = *</td>
</tr>
<tr>
<td>W±</td>
<td>1</td>
<td>0</td>
<td>(1 - 0) / (1 + 0) = *</td>
</tr>
</tbody>
</table>

*Note.* Sample data illustrating how to calculate the critical thinking ratio. *Not calculated—sample too small. From (Newman et al., 1995).

Like other content analysis models, the Newman et al. (1995) model brings up concerns about validity, yet many of these concerns are raised when examining the model from a quantitative analysis perspective (Marra, 2006). Concerns about the variability in the unit of analysis and its effect on the critical thinking ratio, as well as the numerous
codes used in the model are validity concerns that required the use of validity strategies such as triangulation and member checking in this case study.

Reliability in a case study refers to the consistency and repeatability of the researcher’s approach with other research done in the field (Cresswell, 2014; Yin, 2014). Newman et al., (1995) were careful to document the model, saying, “This paper elaborates on the content analysis method we used to measure critical thinking in CSCL, in sufficient detail to enable others to replicate (and improve upon) it” (p. 1). This has allowed for some repeatability of the model in several other studies (Landis et al., 2007; Marra et al., 2004; Wickersham & Dooley, 2006).

Within content analysis models, there is some argument about the specificity of definitions and how that affects reliability. Newman et al. (1995), were very focused on definitions in their model and suggest that the “superficial results” obtained by both Henri (1991) and Garrison (1991) were influenced by their broad definitions of cognitive skills. Marra, Moore, and Klimczak (2004), on the other hand, point out that Newman, Webb and Cochrane create a significant reliability issue in creating a model that requires 46 separate codes, with no defined unit of analysis and the potential for multiple codes in a single unit.

Inter-rater reliability is another significant issue. Since Newman et al. (1995) chose not to define a unit of analysis, inter-rater reliability is almost impossible. Newman et al. point out inter-rater reliability is a practical problem with the model. They find that some of the indicators in the model need to be marked by a person with knowledge of the content and suggest that the instructor for the course is the most appropriate assessor. “So
getting multiple evaluators to control for subjective scoring is not usually possible. Instead, just as in an expert system, one relies on the experience and expertise of the tutor” (Newman et al., 1995, p. 11).

From the perspective of this research, several procedures were implemented to promote reliability. The researcher as a participant observer in the course coded all of the transcripts using the Newman et al. (1995) Critical Thinking Model. While the coding system was complicated, the codes have been clearly defined by the model. It was intended that the instructor would do a cross-check of codes on one week of discussion forums, one week of blog entries, and one Google Docs assignment. The death of the instructor prevented the cross check from ever taking place, resulting in an additional unexpected limitation. While this cross check could have potentially provided some interesting analysis as well as additional triangulation, the instructor and the researcher were able to meet weekly during the course of the study to share analysis. This weekly analysis proved to offer an accurate and timely method of not only checking for inter-rater reliability but also serving as an informal member check of the weekly data.

The design of this case study provided a significant amount of data and it is not lost on the researcher that analyzing the data is a daunting task. However, the strong theoretical orientation that the Newman et al. (1995) model provides served as a guide to organizing the data, determining relevant contextual conditions, and providing explanations during the analysis process (Yin, 2014).
Limitations

Many researchers view a holistic single case study as a methodological design with little to no generalizability. It is argued that a case only represents a sampling point and cannot be generalized to a larger population. Yin, (2014) points out that there are two types of generalization; statistical and analytic. Analytic generalization is more appropriate to case study design and depends on the “study’s theoretical framework to establish a logic that might be applicable to other situations,” (Yin, 2012, p. 18). Content analysis using the Newman et al. (1995) Critical Thinking Model provides a strong theoretical framework for this study. While case studies are unlikely to be generalizable to a population, the data from this study has been used to inform the design of future Critical Theory courses at a free public day school for profoundly gifted students, making a strong case for a holistic single case study as a design methodology that can be generalizable to a situation.

Additionally, while it is acknowledged that there is research to indicate that social interaction plays a role in online critical thinking, it is not within the scope of this case study (Garrison et al., 2010; Ng & Nicholas, 2007; Webb et al., 1997). This study focused on the demonstration of critical thinking in student’s online written work in an attempt to examine how critical thinking can be facilitated in a literature course for the profoundly gifted high school students in a blended learning environment. As specified in the study protocol, direct observation, participant observation and pre and post online discussion was analyzed as part of the emergent design component of the study.
If the instructor had had the opportunity to review the coded data, it is possible that she could have provided additional insights. While this is certainly a limitation, the weekly analysis meetings between the instructor and the researcher allowed for consistent cross checking and member checking throughout the course of the study.

Summary

As outlined in this chapter, this research used a holistic single case study method to examine critical thinking in the online component of a blended learning environment using the Newman’s Model of Critical Thinking as a theoretical framework. The case study design is appropriate because it allows the researcher to examine the phenomenology of critical thinking taking place in various discussion strategies using common asynchronous writing tools, through the lens of profoundly gifted high school students. The data was not used to assess critical thinking or to make global generalizations about critical thinking in the gifted classroom. Rather, this case study is intended to inform the design of the online components of a Critical Theory course as a first step to developing a blended learning environment and perhaps long-term to inform other hybrid course designs at the case school.
Chapter 4: Data Analysis

Case study research provides an analysis of the context and processes used to illuminate theoretical issues (Hartley, 2004). This chapter contains a detailed description of the context in which this study took place; the students and instructor and their situational and dispositional characteristics; as well as the design and facilitation of the course; and the technology used to deliver the course material. Chapter 3 has already provided a detailed description of the institutional context and course content. After laying out the context of this case study, the findings related to using tools and strategies to facilitate critical thinking in a blended learning environment for profoundly gifted high-school students are presented. In Chapter 5, the impact of these tools and strategies on critical thinking are discussed.

The Students

The case study was carried out at a free public day school for profoundly gifted middle and high- school students. To be eligible for admission, the student must have scores in the top one-tenth of one percent on a standardized IQ test and be working at the middle school or high-school level. During the 2014-2015 academic year, the school had an enrollment of 137 students. The class of 2015 had 17 students. Seven students participated in this case study. Of those seven students, six identified themselves as National Merit Finalists. It should be noted that student names within this document are pseudonyms to protect the privacy of the study participants.
**Age and gender.** The students ranged in age from 15 to 17 years old. While grade level is not a determinant for course placement at the school, only two of the student participants were classified as graduating seniors.

There were four males and three females in the course. During the face-to-face classes it was common for the students to self-segregate by gender. With seven students participating in the study, the four male students worked together in pairs; two of the female students worked together; and one student typically worked by herself. This self-segregation was also evident during the peer review process during the fifth week of the study.

**Computer experience.** All seven students viewed themselves as experienced computer users and generally seemed excited about working in a blended learning environment. One student commented, “I’ve been homeschooled for a while, so I’m very used to an online learning environment, and the design of this one seems well suited to the class” (Levi, prestudy survey, March 2015). The first week of the study was spent introducing the students to the LMS. They were very excited about reading *Carmilla*, a novella about a female vampire, and many of them were familiar with the *Carmilla* Web series. To get the discussion forum started the students were asked to post thoughts about their favorite vampire, and on the last day of the first week they were asked to create a prestudy blog posting about the LMS. While there was some initial confusion on where to post assignments, no students expressed anxiety or concern about using the LMS during the six weeks of the study.
Pre/post surveys. The data on the situational and dispositional characteristics of the students was gathered during informal conversations, class discussions, and from prestudy discussion forum entries and a poststudy questionnaire given the first and sixth week of the study, respectively. Five of the seven students responded to the prestudy discussion forum and six out of seven students responded to the poststudy questionnaire.

Precourse attitudes toward the LMS were gathered during the first week of the study. Students were asked to respond to the following question in the Week 1 blog section of the LMS. The results of this survey have been interwoven into the situational context of the study.

Ask me any questions that you might have or express any concerns about the study. If something isn’t working in the LMS or you aren’t sure about something, this is a great place to let me know about it. If you don’t have questions or concerns, then tell me how you feel about a portion of your class being moved online. (Prestudy survey, March 2015)

The poststudy questionnaire provided data on the post-course attitudes and dispositions toward the LMS and the experience of working in a blended class designed to facilitate critical thinking using the following tools: discussion forums, blogs, and Google Docs, as well as face-to-face discussions. The postsurvey consisted of six open-response questions and the results of this survey have been interwoven into the situational context of the study:

- What did you like about the online portion of the course?
- What could be improved in the online portion of the course?
• How did adding the online component change the class?

• If given the choice, tell me why you would prefer this class with or without an online component?

• How did the forums, blogs and Google Docs help inform your final Literary Criticism paper?

• Tell me anything else you think would be useful in improving the design of the hybrid course.

Completion and participation. All seven students in the class completed the six-week study. Students had “homework passes” that had been earned throughout the semester and could be used for missing assignments. In most instances where a student did not participate in an assignment, a homework pass was redeemed, and the student’s grade was not penalized. The charts below indicate student participation sorted by discussion forums (Figure 3), blogs (Figure 4), and Google Docs (Figure 5). It should be noted that Week 1 data served as an introduction to the LMS and prestudy survey, and is not analyzed as part of this study’s critical thinking data.
Figure 3. Number of students participating in discussion forums sorted by week and entry number. N=7.

Blogs

Figure 4. Number of students participating in blogs sorted by week. N=7.
Computer access. Each student was provided with a laptop in the classroom and all students had computers available to them at home. Classes were often flipped and students did reading in class and worked in the LMS at home. This became particularly common when students were reading difficult outside source material where face-to-face discussions with the instructor were helpful in guiding them through the readings.

Access to Internet and a computer were concerns expressed by one student in the poststudy questionnaire.

I was very fortunate to have always had both Internet access and a computer readily available to me. While it was not an issue for me, pretty much any online course relies upon the assumption that its participants were able to reach the site out of which it is based. If I had not owned a personal computer at home, or had I lacked backups for either Internet connection or said computer I likely would...
have given a more negative review of the online format. (Jack, post survey, May 2015)

While this particular student expressed a potential concern, accessibility to a computer or Internet were not factors in the students’ participation in the online portion of the course. No other students expressed concerns about access to computers or Internet during the prestudy responses or the poststudy responses.

**Motivation.** Students at the beginning of the course seemed motivated to participate in the study. One student expressed his excitement about the freedom that the discussion board would provide in the discussion component of the course. “I have no idea why you let us loose at discussion boards, but I’d like to thank you for that, ‘cause it should be pretty fun” (Bryan, prestudy, March 2015).

During the third and fourth week of the study, there appeared to be waning responses to both discussion and blog postings. Missing homework assignments by week are illustrated in Figure 6, below. When asked about student motivation during this time, the instructor mentioned four factors that she felt were relevant to student motivation to participate in the blended learning environment.

1. **End of the year fatigue:** The students are always very burnt out this time of year and for this reason the wide-open responses are likely too much freedom and also a bit alien to them since they generally don't do their best work when things are too free but even if they had more direction I imagine they would have gone way down in quality anyway. (Instructor, status report, April 2015)
2. **Required number of posts too high.** I typically don't have them doing small bits of writing every night and they haven't been in that position in any other English class for several years so the number of required posts is definitely also contributing here. (Instructor, status report, April 2015)

3. **More outside resources needed.** If I were to do this one again I think I would have them read more outside resources and then write brief posts that reflect on these outside materials . . .. (Instructor, postsurvey, May 2015)

4. **Homework passes.** Please note that [Stephanie] was the only one truly missing/late work as all of the others were using their exemptions. (Instructor, status report, April 2015)

![Figure 6. Number of missing assignments each week of the study.](image-url)
The Course

The course content, its design and the instructor’s role in the course are discussed in Chapter 3. Here a more detailed description of the course design and the efforts that the instructor made to promote online discussion are discussed. The data presented here was obtained through observations of the face-to-face class during the first two weeks of the study, online assignments, student questionnaires, and status emails with the instructor.

Course design. The blended learning portion of the course was organized around the Gothic novella, *Carmilla*, (Le Fanu, 2013). Below is a short description of the book.

*Carmilla* is a Gothic novella by Joseph Sheridan Le Fanu and one of the early works of vampire fiction, predating Bram Stoker's Dracula (1897) by 26 years. First published as a serial in The Dark Blue (1871–72), the story is narrated by a young woman preyed upon by a female vampire named Carmilla, later revealed to be Mircalla, Countess Karnstein, Carmilla is an anagram of Mircalla. (Wikipedia Contributors, 2016)

The following supplemental readings were also assigned: *The Uncanny*, (Freud, 1919); *Abstract : Katherine Byrne, Tuberculosis and the Victorian Literary Imagination*, (Talairach-Vielmas, 2011); Chapter 3 of *The Victorian Frame of Mind: Anxiety*, (Houghton, 1963); Chapter 4 of *Tuberculosis and the Victorian Imagination: There is Beauty in Woman’s Decay’: The Rise of the Tubercular Aesthetic*, (Byrne, 2013); Chapter 5 of *Tuberculosis and the Victorian Imagination: Consumption and the Count: The Pathological origins of vampirism and Bram Stoker’s Dracula*, (Byrne, 2011); and
Reading Pointers for Carmilla, written by the instructor of the course, which can be found in Appendix D. All supplemental resources were posted by assigned week under the Resources tab in the LMS.

This portion of the course took place over six weeks, met face-to-face Monday through Thursday, and all assignments were completed online using an LMS platform designed for the study in Google Sites as part of Google Apps for Education. The first week was spent acclimating the students and the instructor to the LMS and watching a movie version of Carmilla in the classroom. Weeks two through six were implemented using the following course design: (A detailed description of each assignment can be found in Appendix C.)

Week 2: (4 assignments)
- 3 discussion forum responses (structured questions)
- 1 blog posting (open-ended)

Week 3 (4 assignments)
- 3 discussion forum responses (scaffolded questions)
- 1 blog posting (role play)

Week 4 (4 assignments)
- 3 discussion forum responses (open-ended)
- 1 blog posting (argument/debate)

Week 5 (3 assignments)
- 1 draft of literature analysis
- 1 peer edit of literature analysis (peer edit)
1 final version of literature analysis (peer edit)

Week 6 (1 assignment)

1 final paper (literary critique)

**The role of the instructor in the course.** The instructor for the course was an English teacher as well as the Curriculum Director for the school. Her role as Curriculum Director put her in a unique position to have a broad understanding of courses taught at the school and the importance of curriculum design in moving her Critical Theory course to a blended learning format. As previously mentioned, the instructor passed away shortly after the case study ended and was not able to participate in the cross checking of codes or provide member checking after the study concluded. The instructor was able to participate in a poststudy interview during week six of the study. She prefaced her comments with a reminder that she had not had time to review the data and her statements were only her initial impressions. If she had had the opportunity to review the data obtained during the six-week study, she could have provided many invaluable insights from the perspective of the instructor of the course.

Initially, this case study started out with a request from the instructor to add a blended learning component to her Critical Theory course. Her comfort level with technology in the classroom was tentative and she was not sure how to “convert its brick-and-mortar iteration without sacrificing the quality of the content.” After sharing her course materials and expressing concerns about the students’ ability to think and write critically about the assigned books, it was decided that the final book for the course
would be presented in a blended-learning format as long as it did not “unduly interrupt the flow of the class or change the direction of [the] intended instruction.”

As a way of transitioning to a blended learning environment, the instructor initially began the course at the beginning of the school year using Blackboard to post assignments. She experienced considerable frustration loading assignments into Blackboard and after the sixth week of the course, stopped using Blackboard and began providing paper copies of the weekly assignments to students instead of posting them electronically. Students were also asked to use Turn-it-In, a web-based writing assessment and plagiarism tool in which students can check their writing for grammar and spelling and the instructor can provide feedback. The instructor reported that it worked well for the students to submit their final assignments in Turn-it-In and she was comfortable using the technology.

The LMS and user documentation used in this study were sent to the instructor for review four months before the study was scheduled to begin. The instructor had some initial problems logging in to the LMS, but IT personnel at the school were able to help address her concerns. Her previous experiences using Google had been frustrating and she was uncomfortable posting assignments and maintaining the discussion board and blog sections of the LMS. It was agreed that as part of the study protocol, the researcher would maintain the LMS and post assignments. Prompts for the discussion forum and blog postings were written by the instructor and posted by the researcher to the LMS.

It was initially determined that students would respond to four discussion forum questions and make one blog posting in weeks two through four. After meeting with the
instructor during the first week of the study, the instructor made the determination that three discussion forum questions and one blog response during those weeks created a more reasonable workload for the students. In order to facilitate a consistency in learning objectives throughout the entire course, all of the discussion forum questions and blog questions were written by the instructor. They were written during the first week of the course after the planning meeting with the researcher and the instructor. The instructor’s intent in writing the questions was to address the same material that would have been covered in a face-to-face course in a way that would be facilitated by the online discussion forum and blog tools. A detailed description of all assignments can be found in Appendix X.

The Learning Management System

The LMS was designed as a platform to move a face-to-face high school critical theory course to a blended learning environment. It was intended to serve as a platform to facilitate the online portion of the course.

In converting this course to a blended learning environment, it was determined by the researcher and instructor that the LMS would entail the following initial requirements.

- Facilitate the design of an online platform that allows for student/instructor interaction in an asynchronous classroom environment.
- Allow for in-house administration of user accounts in compliance with FERPA, the Institutional Research Board and the school’s privacy protection guidelines.
• Provide a stable platform that requires minimal maintenance and minimal downtime.

• Allow for shared access among instructor/students.

• Facilitate a design within the LMS platform that is easily navigated by students and the instructor to access and update course materials.

• Provide a forum for students and the instructor to initiate and contribute to online discussions.

• Allow students to write and share documents to facilitate peer editing.

• Allow students to submit their work to the instructor.

• Allow the instructor to provide feedback and comments to the student within the LMS.

• Serve as a portfolio to archive the student’s work.

• Provide a calendar and a space for students to access upcoming assignments.

**Google Apps for Education.** Based upon this needs analysis, it was determined that the LMS would be created in Site, a website design application within Google Apps for Education. The Google Site application provided a platform to create an LMS for the course, and allowed for the incorporation of the following additional Google applications within the website.

• Gmail—a mail system with unique user names and passwords created specifically for communication between students and the instructor of the course.

• Google Calendar—a calendar that integrates with other applications within the Google Apps suite.
• Google Drive—a cloud-based storage application that allows the student and the instructor to access files from any device.

• Google Docs—a platform for creating documents, spreadsheets, and presentations within a browser that allows for group collaboration.

**Components of the LMS.** A needs analysis determined that the following components would be included in the Critical Theory LMS. A detailed description of each LMS component can be found in Appendix A. Figure 7 is a screen shot of the home screen showing each of the component tabs.

• Home

• Calendar

• Assignments

• Resources

• Discussion Forum

• Blog

• Peer Edits

• Portfolio
Overall the design of the LMS seemed to work well for the students and the instructor. “I must say that the LMS is well-designed and easily navigable” (Bryan, poststudy, May 2015). The instructor, who was initially concerned about using Google for the LMS platform found the LMS to be “highly functional and excellent overall” (Instructor, poststudy, May 2015).

Two students expressed usability concerns in their prestudy Blog posts about the drop-down menus used in the LMS to categorize information by week. However, by the end of the study all of the students that responded to the poststudy had positive things to say about the organization and usability of the LMS.

I enjoyed how easy it was to access my assignments, and appreciated the availability of an online schedule when I had trouble recalling what they were.

Figure 7. The Home page for the Critical Theory LMS showing the online components of the course as tabs across the top of the page.
The organization of the site was grade A, and apart from some issues that I had on day one, I never experienced difficulty using it” (Jack, poststudy, May 2015).

The Attributes of Blended Learning

Initially, this study began because the instructor wanted to move her critical theory course to a blended learning environment, but was concerned that “converting it from brick-and-mortar to a blended learning iteration could sacrifice the quality of the content” (Instructor, pilot study, October 2014). This study represents the first blended learning course at this school for profoundly gifted students. However, it is the goal of the case school’s curriculum committee to begin to move more courses over to a blended learning model in an effort to offer more flexibility for students and instructors with the potential added benefit of providing more course options for students.

It is also noteworthy that as the blended learning component evolved in the course, the teacher was able to flip the classroom. Students seemed to benefit greatly from the opportunity to work on new material in class where the instructor was available to assist with questions that arose from the assignments in real-time. According to the instructor, “Much of the reading material that we cover is difficult. It seems to take some of the stress off when [students] know that they can stop and ask questions. That just doesn’t happen when they do the reading at home” (Instructor, poststudy, May 2015). The instructor also found it “...beneficial to be able to “plant the seeds” of critical analysis before the students began their online discussions. It really gives them the opportunity to think about what they are going to write about and develop their ideas before the [online] discussion begins” (Instructor, poststudy, May 2015).
Critical Thinking

This study used a holistic single case study method to examine critical thinking in the online component of a blended learning environment using the Newman Model of Critical Thinking as a theoretical framework. The data presented here examines the phenomenology of critical thinking taking place in various discussion strategies using common asynchronous writing tools, through the lens of profoundly gifted high school students. The data is not intended to assess critical thinking or to make global generalizations about critical thinking in the gifted classroom. Rather, this case study data is intended to inform the design of the online components of a Critical Theory course as a first step to developing a blended learning environment that facilitates critical theory and perhaps long-term to inform other blended course designs at the case school.

Overview of critical thinking within the online component of the course. This study uses the Newman et al. (1995) content analysis method to measure critical thinking in the online component of the case study Critical Theory course. The method was chosen because it specifically addresses the concerns of critical thinking within group learning environments through the process of using content analysis in electronic discourse. A sample of the coding can be found in Appendix E. The chart below (Figure 8) illustrates the percentage of instances of critical thinking in each category of Newman’s Critical Thinking Model as categorized by the researcher. Categorization was not meant to be definitive, but indicative, to generate a sense of the predominate critical thinking actions encountered. The reader should note that the following categorization is
reflective of the unique content and technology used in this particular case. Nonetheless, the reader may be able to usefully transfer these results to similar circumstances.

Figure 8. A summary of all instances of online critical thinking (N=1389) taking place during the study. Sorted by category by the researcher, using Newman et al. Method of Content Analysis for Critical Thinking Online (1995).

In analyzing the data using the Newman et al. Method of Content Analysis for Critical Thinking Online (1995), three categories of critical thinking made up 79 percent of all analyzed data from the study.

- **Justification**: Setting out advantages and disadvantages; justifying solutions or judgments (JS+); providing proof or examples (JP+).
• **Linking Ideas**: Generating new data from information collected; linking facts, ideas and notions (L+).

• **Outside Knowledge**: Course related problems brought in from lectures and texts (OP+); evidence of using previous knowledge (OK+); use relevant outside material (OC+); drawing on personal experience (OE+).

Students demonstrated a strong ability to bring *justification, linking ideas* and *outside knowledge* into their writing in the discussion forum, blogs, and Google Docs. For reference, a copy of the Newman et al. (1995) Method of Content Analysis for Critical Thinking used in the content analysis can be found in Appendix B.

*Justification* was the most frequently exhibited category of critical thinking with instances of JP+ (providing proof or examples) occurring 297 times and JS+ (justifying solutions or setting out advantages/disadvantages) occurring 162 times throughout the six-week study.

Students also demonstrated a strong ability to link facts, ideas and notions to support their arguments as well as generate new data from the information they had received, with 375 instances of L+ demonstrated.

The effective use of *outside knowledge* was also exhibited through the students’ ability to welcome *outside knowledge*, OQ+ (12 instances); bring in course related problems from lecture and texts, OP+ (96 instances); use previous knowledge, OK+ (27 instances); use relevant outside material, OM+ (11 instances); refer to course material, OC+ (115 instances); and draw on personal experiences, OE+ (13 instances).
The remaining seven categories (ambiguities, width of understanding, importance, novelty, practical utility, critical assessment and relevance) comprised 21% of all instances of critical thinking analyzed in the study. A pie chart illustrating the percentages of each category is presented in Figure 9 below.

- **Ambiguity** (A+), in which students discussed ambiguities to clear them up, occurred 116 times. AC+, described by Newman et al. (1995) as clear, unambiguous statements proved to be impractical to code because students did not write unclear ambiguous statements.

- **Width of understanding** (W+), or widening discussion within a larger perspective, occurred 81 times.

- **Importance** (I+) demonstrating the occurrence of important points/issues occurred 51 times, however, this category was only used when the important points or issues were original thinking and not points/issues discussed in class or provided in class materials or outside sources.

- **Novelty** (NI+, NQ+) providing new ideas, information or solutions, is divided into five positive critical thinking categories. Because the tools used in this study were largely discussion and blog related, all instances of Novelty fit into two of these categories, NI+ (new ideas for discussion) with 15 instances and NQ+ (welcoming new ideas) with 9 instances.

- **Practical Utility** (P+), or demonstrating the practical utility of new ideas or relating possible solutions of familiar situations occurred 13 times in the data analysis.
• **Critical Assessment** (C+) occurred 10 times. There were no instances of CT+ in which the instructor prompted for critical evaluation.

• **Relevance** (R+) demonstrated by relevant statements that had not been discussed in class or provided by class materials occurred 4 times.

![Pie chart](image)

**Figure 9.** The pie chart illustrates that 79% of all instances of critical thinking were coded in three of the ten categories. The other seven categories comprise only 21% of the instances of critical thinking.

**Critical thinking index.** A negative subcategory of critical thinking only occurred three times within all 10 categories in the 1389 instances of critical thinking that were documented throughout the course of the study. All three of these instances occurred within the *justification* category (JP-), where irrelevant or obscuring questions or examples were provided during a blog posting. In all cases, intentional sarcasm
appeared to be the intent of the writer and all three instances occurred during the role play strategy where students were asked to assume a viewpoint contrary to their own.

The absence of a significant number of negative subcategories was an unexpected finding that eliminated the need to use the critical thinking ratio referenced in Chapter 3 as part of the study methodology. It was intended that the depth of critical thinking would be calculated based on the coded critical thinking indicators. The critical thinking ratio varies from a -1 where an uncritical statement is made to a +1 where a critical statement is made. The ratio would have been calculated for each category using the following formula:

\[
\text{Depth of critical thinking ratio} = \frac{L^+ - L^-}{L^+ + L^-}.
\]

However, the lack of uncritical statements in the data make the critical thinking ratio of little practical importance in interpreting the actual data from this case study and therefore, it has not been included in the data presented in this chapter. To illustrate its small impact on the study data, when applying the ratio to the justification category, where there were three instances of uncritical thinking, the ratio is .90, which illustrates an extremely high instance of positive critical thinking over negative critical thinking.

\[
J^+ = 63, J^- = 3
\]

\[
(63 - 3) / (63 + 3) = .90
\]

With all other instances of critical thinking having a ratio of 1, there is essentially no context with which to compare critical thinking ratios and therefore, the critical thinking ratio is inconsequential in this case study.
Critical thinking in the blended learning classroom. In examining the following research questions, a clearer picture starts to evolve:

1. What critical thinking skills are profoundly gifted high school students using in their online writing?
2. What critical thinking skills are they missing?

As evidenced by the data, student participants in this case study were most proficient in three areas of critical thinking (outside knowledge, 20%; linking ideas and interpretations, 26%; and justification, 33%). Ambiguities clarified and a widening of the discussion were both seen in less than 10% of the data analyzed. The least frequently used categories of relevance, importance, novelty, critical assessment, and practical utility all fell below 5% of the critical thinking exhibited by the data in this study.

Critical thinking using instructional tools and strategies. This study contributes to the literature of designing online and blended learning environments for gifted students that facilitate critical thought by focusing on the delivery mechanisms, or tools (discussion forums, blogs, Google Docs) and the instructional strategies used in their implementation (open--ended, structured prompts, scaffolded, debate/argument, role play, peer edits, literary criticism). Specifically, it looks at:

1. How can online tools and strategies facilitate critical thinking in a literature course for profoundly gifted high-school students in a blended learning environment?
2. How do online tools (discussion forums, blogs, Google Docs) influence critical thinking?
3. How do instructional strategies (structured, scaffolded, open-ended, debate/argument, role play, peer edits, literary criticism) influence critical thinking?

**Case Study Data Analysis**

The following is a discussion and data analysis of each tool and the strategies that were implemented during the six-week study. It should be noted that in order to avoid bias all student identifiers were removed before coding.

**Discussion forum (tool).** One aspect of this study was to examine critical thinking in a discussion forum online environment using following three strategies: structured questions, scaffolded questions and open response questions. The discussion forum was designed to allow profoundly gifted high school students and their instructor to have in-depth discussions about the novella *Carmilla* by J. Sheridan LeFanu, using these strategies. Each strategy was implemented three consecutive times during one full week of class. See Table 7 below.
Table 7

**Discussion Forum Tool and Strategies**

<table>
<thead>
<tr>
<th>Week</th>
<th>Question</th>
<th>Day of Week</th>
<th>Tool</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>Monday</td>
<td>Discussion Forum</td>
<td>Structured</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Tuesday</td>
<td>Discussion Forum</td>
<td>Structured</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>Wednesday</td>
<td>Discussion Forum</td>
<td>Structured</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>Monday</td>
<td>Discussion Forum</td>
<td>Scaffolded</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Tuesday</td>
<td>Discussion Forum</td>
<td>Scaffolded</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Wednesday</td>
<td>Discussion Forum</td>
<td>Scaffolded</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>Monday</td>
<td>Discussion Forum</td>
<td>Open-ended</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>Tuesday</td>
<td>Discussion Forum</td>
<td>Open-ended</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>Wednesday</td>
<td>Discussion Forum</td>
<td>Open-ended</td>
</tr>
</tbody>
</table>

**Structured questions (strategy).** The structured questions were designed to provide specific information to students in order to illicit correct and meaningful responses. Specific references were provided, and students were asked to respond to questions using knowledge they had from previous novels assigned in the course.

- **Question 1:** In Chp.1 (pgs. 6-8) and Chp.3 (pgs. 23-25) you will note a very striking instance of our old friend the “mirror” motif. Compare these two passages as parts of a single motif. The first bit is given from perspective of our heroine and the second (albeit duplicitously) through the eyes of the vampire. Why do you think this pivotal event was portrayed as a dream or dream–like recollection? What aesthetic and/or thematic ends might be achieved by using this iteration of
the mirror [+ dream] motif with these two particular characters? At this point you are being asked to predict a bit about where you think things are heading in this novel...so feel free to confront the risk of speculation fearlessly! If you need a bit of structure to get yourself started you might fall back upon the recent reading from Freud and speculate about how and why the reader may have been invited to view this dramatic reversal in a Freudian light.

This was the student’s first attempt at participating in the online component of the course. As illustrated in Figure 10, only four of the ten categories of critical thinking were exhibited. Initially, the students relied heavily on outside knowledge in their discussion One example of outside knowledge is presented below:

[Outside Knowledge: O+] “These parallel dreams are a manifestation of the mirror motif, and they both create uncanniness for Laura and suspicion for the reader” (Discussion Forum: Week 2, Question 1).

In analyzing the data in Question 1 of the discussion forum (tool) using the structured question (strategy) instances of critical thinking were recorded in the following categories:

- **Outside Knowledge** 33%
- **Justification** 27%
- **Linking Ideas** 25%
- **Ambiguities** 15%
Question 1: The pie chart above illustrates the coded data in each category of critical thinking. Tool: Discussion Forum; Strategy: Structured; Question 1

Figure 10. The pie chart above illustrates the coded data in each category of critical thinking. Tool: Discussion Forum; Strategy: Structured; Question 1.

- Question 2.: In Chapter 4 we again encounter the mirror motif but in this instance it has been relocated from the dream sphere to waking life and the reflective traits have been obscured or perhaps even “darkened” in terms of the two very different characters that are mirrored. In chapter 4 the dramatic reversal is accomplished by means of an imperfect “mirroring” via a minor male character and we might roughly describe him as an approximate foil to the character of Carmilla. How does the first instance of mirroring (from Chp.1 & 3) compare and contrast with this imperfect and approximate mirroring in (Chapter 4). You don’t have to post
your thoughts here just think it over as you prepare to answer and then post your response to this question: In your opinion, what aesthetic or thematic impact does this particular male/female binary accomplish in a novel that will ultimately explore the notion of transgressive sexuality via the lens of lesbian attraction? Perhaps you may also want to consider the Victorian literary conceits of vison and beauty, which often accompany “mirrored” scenes since you have a good measure of experience in that vein ala Henry James.

In the second question using the structured strategy in the Discussion Forum, students once again easily use **justification**, **linking ideas**, and **outside knowledge** as well as show some propensity for clarifying **ambiguities**. Important points are also addressed as a way of beginning to discuss some of the themes relevant to the discussion forum question. See Figure 11 below for a graphic representation of the data. Below is one example of the **importance** element of critical thinking being addressed in a student’s posting to the discussion forum.

[Importance: 1+] I view this threat as a symbolic criticism of the homosexuality that the fang represents, and the fact that this threat comes from the Wanderer give it a very specific meaning that it wouldn’t have just coming from a normal member of Victorian society. (Discussion Forum: Week 2, Question 2)

In analyzing the data in Question 2 of the discussion forum (tool) using the structured question (strategy) instances of critical thinking were recorded in the following categories:

- **Justification** 45%
- **Linking Ideas** 27%
- **Outside Knowledge** 17%
- **Importance** 7%
- **Ambiguities** 4%

*Figure 11.* The pie chart above illustrates the coded data in each category of critical thinking. Tool: Discussion Forum; Strategy: Structured; Question 2.
- Question 3: Angela Bourke suggests that cultures undergoing rapid modernization tend to "polarize" aspects that make up the social landscape: "tradition against law; country against town; men against women". Where do you see these polarizing forces at work in "Carmilla"?

The third question in the discussion forum that uses a structured strategy shows similar data to the first two questions, as well as two examples of width of understanding. Students still consistently demonstrate their ability to easily use justification, linking ideas, and outside knowledge as well as a few instances of ambiguities and importance. See Figure 12 below for a representation of the data. Not surprisingly it seems to be common for linking ideas and justification to be used together. Students often use a linking idea and then offer several justifications to support their idea. An example of a student using a linking idea and justification is illustrated below.

[Linking Idea: L+] This kind of complicates the relationship between religion and nature/science and the characters we choose to represent each—even though Carmilla is a creation of God, she’s not what we imagine to be a part of God’s kingdom. (Discussion Forum: Week 2, Question 3)

[Justification: J+] She lives off of death and pushes the boundaries of what women are permitted to do with regards to their sexuality, both by having on and by having same-attractions, and she seems to hate religion, expressing her distaste at the hymns she hears and asking Laura how she can tell their religions are the
same if Laura’s religious expressions hurt Carmilla. (Discussion Forum: Week 2, Question 3)

In analyzing the data in Question 3 of the discussion forum (tool) using the structured question (strategy) instances of critical thinking were recorded in the following categories:

- **Justification** 35%
- **Outside Knowledge** 37%
- **Linking Ideas** 17%
- **Ambiguities** 6%
- **Importance** 4%
- **Width of Understanding** 1%
Tool: Discussion Forum  Strategy: Structured  Question 3  n=109

Student participants = 6

Figure 12. The pie chart above illustrates the coded data in each category of critical thinking. Tool: Discussion Forum; Strategy: Structured; Question 3.

**Scaffolded questions (strategy).** The intent of using scaffolding in this study was to examine how scaffolding questions online can help facilitate learning for profoundly gifted students in an online environment. Typically, scaffolded questions involve some interaction between the teacher and instructor. This is one area of the study that was impacted by the instructor’s comfort level with using online tools such as Google Site.

While there was a great deal of interaction between students and the instructor in the face-to-face classes, the instructor only responded to one post in the discussion forum.
over the course of the week where the scaffolding strategy was used. This issue had a profound effect on the critical assessment category. In addition to the instructor not responding to posts, students did not seem interested in responding to one another’s posts either, and so the collaborative feature of the scaffolding strategy was not present.

In implementing the scaffolding strategy for the discussion forum, the instructor started with the learner’s current level of knowledge and through questioning encouraged them to extend that knowledge. The initial scaffolded question for the week provided support and guidance from the Carmilla Handout (Appendix D), and students were then asked to build on that information in subsequent posts.

- Question 1: Post to the discussion forum. Select any question or topic from the Reading Pointers for Carmilla Handout but restrict your range to those questions that are contained under the heading of … “Important Questions to Clarify a Position”, adapt it to fit your interests (without utterly demolishing the original spirit of the question as it has been written) and respond to whatever question or prompt you create. Or you can leave the question exactly as it was written and go from there.

In the first discussion question using the scaffolded strategy there appears to be very little difference between the structured strategy and the scaffolded strategy. Students are strong in the same areas of critical thinking, and are still exhibiting little or no critical thinking in the areas of critical assessment, practical utility, novelty, importance, relevance, and width of understanding. See Figure 13 below. Ambiguity while not as commonly addressed in writing as justification, linking ideas, and outside knowledge,
has remained consistently around 10%. Below is an example of *ambiguity* used in a discussion forum response.

[Ambiguity: A+] Laura is also interesting in this regard: if we view her as a hapless victim of Carmilla’s advances, then she is the least effective of all; but if we see Laura as an active and willing participant then Carmilla’s ‘infatuations’ get her exactly what she wants. This is once again, a manifestation of the central ambivalence of the novel. (Discussion Forum: Week 3, Question 1)

In analyzing the data in Question 1 of the discussion forum (tool) using the scaffolded question (strategy) instances of critical thinking were recorded in the following categories:

- **Justification** 34%
- **Linking Ideas** 34%
- **Outside Knowledge** 20%
- **Ambiguities** 11%
- **Width of Understanding** 1%
Figure 13. The pie chart above illustrates the coded data in each category of critical thinking. Tool: Discussion Forum; Strategy: Scaffolded; Question 1.

- Question 2: Post to the discussion forum. Repeat the same process as above for this post or if you would like to continue by expanding the prompt/topic you created for your Monday post to fit with the additional reading then you may do that to guide this post.

The second discussion forum question using a scaffolding strategy indicated that students were beginning to rely less on linking ideas and outside knowledge in their writing. Width of understanding and addressing ambiguities increased. Relevance was
an element of critical thinking only addressed four times throughout the course of the case study. See Figure 14 below for a data representation. **Relevance** was addressed three times in the discussion forum question 2 using the scaffolded strategy. Below is an example of *relevance* used in a student’s response.

*[Relevance: R+] “Okay, so I already discussed this, but I think that with the new character that have come to light in chapters IX-XI, it is a valid question to come back to” (Discussion Forum: Week 3, Question 2).*

In analyzing the data in Question 2 of the discussion forum (tool) using the scaffolded question (strategy) instances of critical thinking were recorded in the following categories:

- **Justification** 36%
- **Linking Ideas** 25%
- **Outside Knowledge** 16%
- **Width of Understanding** 11%
- **Relevance** 3%
- **Ambiguities** 8%
- **Importance** 1%
Figure 14. The pie chart above illustrates the coded data in each category of critical thinking. Tool: Discussion Forum; Strategy: Scaffolded; Question 2.

- Question 3: Post to the discussion forum…follow the same pattern as above.

The data for Question 3 of the discussion forum using the scaffolded strategy shows a shift from *justification* and *linking ideas* to using *outside knowledge*. *Width of understanding* and *relevance* remained consistent. While *ambiguity* was close to 10% in the first two discussion forum questions using a scaffolding strategy, it was not present in Question 3. *Novelty* or bringing new information and solutions as well as important points or issues was also not evident in the responses. See Figure 15 below. Additionally,
for the first time, we see a response from the instructor which added the *critical assessment* component. Below is an example of *critical assessment* from the instructor.

[Critical Assessment Tutor Prompt: CT+] “Nice catch [Stephanie]! I was hoping someone would catch the whole spin on love as a possibly dangerous and not utterly “sweet” experience in the wording of that question and I see [Stephanie] mentioned it. . . cool.” (Instructor, Discussion Forum: Week 3, Question 3)

In analyzing the data in Question 3 of the discussion forum (tool) using the scaffolded question (strategy) instances of critical thinking were recorded in the following categories:

- **Outside Knowledge** 39%
- **Justification** 19%
- **Linking Ideas** 19%
- **Width of Understanding** 14%
- **Practical Utility** 3%
- **Critical Assessment** 3%
- **Relevance** 3%
Open-ended questions (strategy). The open-ended strategy was used in this study to increase divergent thinking, promote open-mindedness, and invite answers from the students that may have helped facilitate further critical thinking. While open-ended questions are often used in working with gifted populations, the instructor had concerns that the broad choices created from an open-ended response question would prove overwhelming for the students. It is noteworthy that the instructor’s first question using the open-response strategy goes to great lengths to provide the students with resources to
help initiate ideas for their writing. Nonetheless, students still seemed overwhelmed by the assignment, and spent a great deal of time in the face-to-face class working one-on-one with the instructor to determine what they should write about. From an observational perspective the students seemed to have much higher levels of writing anxiety with the open-ended strategy than they had using the structured and scaffolded strategies.

• Question 1: Post to the discussion forum… only this time you will have completed the novel and the choice of topic or question for this post will be entirely up to you. You may come up with your own idea and post about anything that you find interesting. If this is too unstructured then you may utilize any portion of the Reading Pointers for Carmilla handout to get yourself started. If you find that beginning an entirely new strand of discussion for this week’s forum seems too daunting or less fruitful than you would like you could pick up from any prior discussion strand from week 2 or 3 and further develop it now that you have finished the novel. The most important factor here is your freedom… you don’t have to use the handout at all if you want to take the discussion in an entirely different direction. If you are struggling with how to make this decision, we can discuss it in class. Also if you take a look at your last rant assignment for the end of week 4 you will find that you are being asked to defend an argument from your own perspective (as always very briefly in rant form) and you might want to use some or all of your discussion posts this week to build up to that end. Some of you may want to use your week 4 rant as a chance to repurpose the same rant topic you wrote on last week such that it is constructed from your own
perspective. This would also work just fine…the choices here are all entirely your own.

Despite the concerns of the instructor and anxiety expressed by the students, the open-ended strategy did not initially seem to change the types critical thinking that students were exhibiting. See Figure 16 below. Critical assessment, while not brought about by instructor intervention, was exhibited by one student twice. Both comments were critical assessments of his own statements in previous posts.

[Critical Assessment of own contribution: C+] “I previously mentioned that it was significant that they died in bed, but upon reflection I might be taking my Freudian analysis just a bit too far there” (Discussion Forum: Week 4, Question 1).

[Critical Assessment of own contribution: C+] While I mentioned that I did not see the significance of the lime tree and still wonder if it might just be coincidence, upon further consideration it is interesting to note that the lime tree is the object which causes Carmilla’s carriage to crash, and that it is because of Carmilla’s love of Laura (as others have pointed out: evidenced through her longer stay) that the General is able to find and kill her. (Discussion Forum: Week 4, Question 1)

[Note to reader: Reference to lime leaves linked to the vulnerability of the warrior Seigfried and also known as the tree of lovers in Germanic mythology].
Practical utility or discussing the practical utility of a new idea, seemed to be fostered by allowing the student an open forum to address a question that had not been mentioned in previous posts. Below is an example of practical utility.

[Practical Utility: P+] If Carmilla were male, the book wouldn’t have been as interesting, not just because a male vampire (being so blunt and forward as men are) would simply bite her and be done with it. The reason Le Fanu makes Carmilla female is to be able to explore the realm of female sexuality in a way that he couldn’t otherwise. (Discussion Forum: Week 4, Question 1)

In analyzing the data in Question 1 of the discussion forum (tool) using the open-ended question (strategy) instances of critical thinking were recorded in the following categories:

- **Justification** 33%
- **Linking Ideas** 22%
- **Outside Knowledge** 17%
- **Width of Understanding** 12%
- **Ambiguities** 10%
- **Critical Assessment** 4%
- **Practical Utility** 2%
Figure 16. The pie chart above illustrates the coded data in each category of critical thinking. Tool: Discussion Forum; Strategy: Open-ended; Question 1. 

- Question 2: Same as above…Post to forum.

Question 2 in the discussion forum using the open-ended strategy did not indicate that open-ended questions changed the types of critical thinking that students were exhibiting. See Figure 17. It may perhaps be noteworthy that with this particular question, linking ideas occurred several times without justification. Up to this point, students had been quite diligent in justifying their linking ideas and the percentage of justification was typically equal to or higher than linking ideas. With this question,
students did not spend as much time justifying their ideas. In question 2 of using the open strategy we see students begin to use *critical assessment* to assess other student’s posts.

[Critical Assessment of other student posts C+] So far, I’ve seen a lot of people criticizing Laura’s observation skills, saying that the reason why she’s kind of oblivious with regards to Carmilla’s true nature is that she’s just, well, stupid. However! I feel like that could kind of be over-simplifying what exactly the real issue is—that is, I feel like Laura’s obliviousness draws not from a place of genuine inability to use context clues and problem solving skills; rather, I feel like it’s an unfortunate side-effect of her infatuation with Carmilla. (Discussion Forum: Week 4, Question 2)

In analyzing the data in Question 2 of the discussion forum (tool) using the open-ended question (strategy) instances of critical thinking were recorded in the following categories:

- **Linking Ideas** 32%
- **Justification** 23%
- **Outside Knowledge** 20%
- **Width of Understanding** 11%
- **Ambiguities** 6%
- **Practical Utility** 4%
- **Critical Assessment** 4%
Figure 17. The pie chart above illustrates the coded data in each category of critical thinking. Tool: Discussion Forum; Strategy: Open-ended; Question 2

- Question 3: Same as above…Post to forum.

In question 3 linking ideas went back to typically being supported by some sort of justification and the other elements of critical thinking seemed relatively unchanged. See Figure 18. It was hypothesized by the researcher that the open-ended strategy may have fostered more novelty than the data analysis actually showed. Question 3 is the first appearance of novelty in the student’s discussion forum responses.

[Novelty: N+] I think that one of the most telling aspects of this is what appears at first to be an oversight by Le Fanu: everyone can agree that femininity and
occultism have clearly defined opposites in Carmilla, and that the contrast between these two ‘sides’ (the rational man and the occult woman) is a very important, if not a central aspect of the novel. Where then is the opposite of dreams? In some ways, maybe Carmilla is representative of the unconscious: she lives in our dreams, inside our very minds, and yet, we cannot control her. Or then again, maybe that’s all wrong! Maybe Carmilla represents the intrusion of the occult into our peaceful scientific lives. (Discussion Forum: Week 4, Question 3)

In analyzing the data in Question 3 of the discussion forum (tool) using the open-ended question (strategy) instances of critical thinking were recorded in the following categories:

- **Linking Ideas** 35%
- **Justification** 32%
- **Outside Knowledge** 18%
- **Width of Understanding** 7%
- **Ambiguities** 5%
- **Novelty** 2%
- **Critical Assessment** 1%
Blog (tool). A blog (short for web log) is a web-based application that allows students to post journal entries or commentary on readings and course content (Ko & Rossen, 2010). It is typically arranged in reverse chronological order with the most recent posting being viewed first. In a blended learning environment, it provides students with a venue where they can independently write about their own ideas and receive feedback from peers and the instructor (Miyazoe & Anderson, 2010). Table 8 below lists the strategies used with the blog tool in weeks two, three and four.
Table 8

Blog Tool and Strategies

<table>
<thead>
<tr>
<th>Week</th>
<th>Question</th>
<th>Day of Week</th>
<th>Tool</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>Thursday</td>
<td>Blog</td>
<td>Open-ended</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>Thursday</td>
<td>Blog</td>
<td>Role play</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>Thursday</td>
<td>Blog</td>
<td>Argument/Debate</td>
</tr>
</tbody>
</table>

**Open-ended (strategy).** The open-ended strategy was used with both the discussion forum tool and the blog tool. Students participated in the blog open-ended strategy the second week of the study and in the discussion forum the fourth week of the study.

- Blog Question: Open-ended: Your choice…you could continue in the vein of one of these discussion questions above, you could seek out a topic of interest from the reading pointers handout and either use it literally or adapt it to your purposes or you could create your own original topic and rant on that.

Students were most dependent on **justification, linking ideas, and outside knowledge.** **Ambiguities** and **width of understanding** elements were also present. See Figure 19. **Practical utility, critical assessment, novelty, importance, and relevance** were not evident. Below is an example of **width of understanding.**

[Width of Understanding: W+] Obviously just looking at Laura’s passivity in the novel isn’t enough to determine the ultimate point that the novel is trying to make—about women, potentially about other things the Victorians didn’t like—
but determining Laura’s role in the story and its connection to her analogous role in Victorian society can at least let us (read: me, a potentially biased person I guess because Lesbians) conclude that Le Fanu probably wasn’t trying to play completely into the narrative of passive, helpless woman preyed upon by monster to convey a fear and hatred of powerful women. (Blog: Week 2)

In analyzing the data in Question 1 of the blog (tool) using the open-ended question (strategy) instances of critical thinking were recorded in the following categories:

- **Justification** 45%
- **Linking Ideas** 26%
- **Outside Knowledge** 17%
- **Width of Understanding** 6%
- **Ambiguities** 6%
Figure 19. The pie chart above illustrates the coded data in each category of critical thinking. Tool: Blog; Strategy: Open-ended.

**Role play (strategy).** Role play is a strategy that requires students to assume different roles to answer unstructured problems. Students were asked to consider their own personal perspective on a topic and then examine textual evidence from a perspective other than their own.

- Blog Question: Role Play: For this blog I will ask you to first locate your own personal perspective on the topic and then do your utmost to try on a different thinking “hat” by examining textual evidence and writing from a perspective that is as close to the opposite of your own as you can manage. [For example, if you
are typically a highly skeptical reader who views older texts as anti-feminist or hostile to multiculturalism then find a way to present a more optimistic view of the author’s intent. Or if you typically view literary themes as aspects of social phenomenon then try to write your rant from the more narrow and specific range of the individual psychological aspects that characters display. For the next rant you will be free to argue strictly from your own perspective. To select a topic go to the Reading Pointers for Carmilla Handout and select any topic that is contained under the heading of … “Important Questions to Clarify a Position”….you may adapt/ reshape any of these questions to fit your needs but try to maintain the original spirit of the questions.

It was hypothesized by both the researcher and the instructor that role play could help encourage elements of critical thinking such as critical assessment and justification. While critical assessment did not seem to be affected by the role-play strategy, students did put a great deal of effort into justifying their new positions. See Figure 20. It is notable that it was in the students’ attempts to justify positions contrary to their own beliefs where three instances of negative critical thinking occurred in the form of irrelevant or obscuring questions or examples. A tone of sarcasm was conveyed in each instance. Below is one example of passage coded as a negative instance of negative justification.

[Justification with irrelevant or obscuring questions/examples JP-] It is a host of women who are butchered in their sleep by not men, but rather by one of their own, covertly insinuating that women are the only ones responsible for female
woes, and that the oppressions and depredations of an unjust society have nothing to do with their ailments. (Blog: Week 2)

In analyzing the data in Question 1 of the blog (tool) using the role play (strategy) instances of critical thinking were recorded in the following categories:

- *Justification* 42%
- *Linking Ideas* 27%
- *Outside Knowledge* 16%
- *Width of Understanding* 8%
- *Ambiguities* 5%
- *Novelty* 1%
- *Practical Utility* 1%
Debate/argument (strategy). It was the intent of the case study methodology to include the debate/argument strategy to facilitate an online dialogue between the students in the class. Regretfully, while there were excellent arguments made by all of the students in their blog postings, there were no additional postings made where students challenged each other’s arguments and thus there was no debate. The data here, does show that students used all of Newman et al. (1995) elements of critical thinking in structuring their arguments: *justification, linking ideas, outside knowledge, ambiguities, novelty,*
practical utility, critical assessment and width of understanding were all present. See Figure 21 below.

- Blog Question: Debate/Argument: Your choice… the only requirement is that you present some form of argument. You may use any portion of the Reading Pointers for Carmilla Handout to get ideas, or ignore it entirely in favor of a topic of your own as long as you defend a position of some sort and write from your own perspective.

Below is an example of a student using outside knowledge in their argument.

[Outside Knowledge: O+] Consumption and Gender: In the supplemental reading chapter things [the instructor] gave me, I read about how knowledge/experience to bear on the tubercular aesthetic rose and took hold on Victoria society. I knew before that consumption became this weird beauty standard wherein people tried to look like they were dying of tuberculosis and expressed their desire to die that way should they die at all, but what I didn’t know was how gendered the whole thing was. (Blog, Week 4)

In analyzing the data in Question 1 of the blog (tool) using the debate/argument (strategy) instances of critical thinking were recorded in the following categories:

- Justification 22%
- Linking Ideas 20%
- Outside Knowledge 20%
- Ambiguities 16%
- Novelty 13%
• **Practical Utility** 3%

• **Critical Assessment** 2%

• **Width of Understanding** 2%

• **Relevance** 1%

• **Importance** 1%

**Figure 21.** The pie chart above illustrates the coded data in each category of critical thinking. Tool: Blog; Strategy: Argument/Debate n= 120  Student participants = 6

**Google Docs (tool).** Google Docs as a tool for peer editing is an excellent way for students to continue to work online and provide *critical assessment* to their peers. Google
Docs is an appropriate classroom tool for collaborative projects where multiple students can work together in real time from diverse locations. When a document is shared with another student, specific document changes and alterations can be seen and students can work on the document together synchronously or asynchronously. See Table 9 below for strategy implementation schedule.

Table 9

Google Doc Tool and Strategies

<table>
<thead>
<tr>
<th>Week</th>
<th>Assignment</th>
<th>Day of Week</th>
<th>Tool</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2-3</td>
<td>Tues.-Wed.</td>
<td>Google Doc</td>
<td>Draft Peer Edit</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>Thurs.</td>
<td>Google Doc</td>
<td>Final Peer Edit</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>Mon.-Thurs.</td>
<td>Google Doc</td>
<td>Final Literary Criticism</td>
</tr>
</tbody>
</table>

Peer edits (strategy). While not an intended outcome of the study, ultimately, peer edits were one of the few ways that students received critical assessment of their writing. As discussed earlier, the instructor was very uncomfortable posting online and that severely limited the instances of critical assessment. It should also be noted that while critical assessment took place as part of the peer editing process, it is not reflected in the data unless it was exhibited in the students’ own writing.

Google Docs: Draft Peer Edits

- Assignment 1: As a class, we have brainstormed to define three or four essential topics for a good Carmilla literary analysis. In pairs, partners will work together
to begin writing on the topics in class on Tuesday. Any notes or prewriting should be done in the Peer Edits folder. Share your work with your team member so it is a collaborative effort.

- **Assignment 2:** Continue to work on rough draft with group in the Peer Edits folder. Share your work with your partner.

- **Assignment 3:** Peer edit your partner’s work. Share your peer edits with your partner in Google Docs.

Using Google Docs as a tool in the peer edits strategy, the students had multiple opportunities to work together and provide peer feedback as they worked to pre-write and create a rough draft of a literary analysis. While students may have chosen to have synchronous online discussions about their writing that were not documented, very few actual comments were recorded in Google Docs. In one or two instances, students questioned a sentence that didn’t make sense, but the majority of comments were surface errors and lacked semantic or textual suggestions.

It was interesting to note that for the first time, important points or issues was the most commonly used critical thinking strategy used in the student’s writing. See Figure 22. Below is an example of **importance** exhibited in a student’s peer edit.

[Impotance: I+] The important thing for actual critical thinking is asking what Le Fanu means by this, and to watch out to see if you think Laura reciprocates some of Carmilla’s attraction toward her –this is important if you are going for a reading involving Le Fanu’s views of/impression of female sexuality. (Google Docs: Week 5)
In analyzing the data in Assignment 3 of Google Docs (tool) using the draft peer edit (strategy) instances of critical thinking were recorded in the following categories:

- **Importance** 22%
- **Ambiguities** 17%
- **Outside Knowledge** 17%
- **Justification** 16%
- **Linking Ideas** 16%
- **Width of Understanding** 7%
- **Novelty** 3%
- **Critical Assessment** 2%
Figure 22. The pie chart above illustrates the coded data in each category of critical thinking. Tool: Google Docs; Strategy: Draft Peer Edits.

Google Docs: Final Peer Edits.

- Assignment 4: Revise your work using your peer edits as a guide for revision to create a final draft of your literary analysis. Post your final draft to your Peer Edits folder in Google Docs.

Final peer edits took place during the last class session for the week. Students were then given the weekend to revise their work. Interestingly, after receiving their peer’s critical analysis, the number of linking ideas in their writing increased but
**Justification** remained relatively the same. See Figure 23 below. An example of **linking ideas** is also shown below.

[Linking Ideas: L+] “Dreams represent a window into the supernatural world, a sort of twilight realm where monsters and goblins are much more believable and real than they are in the daylight” (Blog, Week 5).

In analyzing the data in assignment 4 of Google Docs (tool) using the final peer edit (strategy) instances of critical thinking were recorded in the following categories:

- **Linking Ideas** 27%
- **Importance** 18%
- **Outside Knowledge** 18%
- **Justification** 15%
- **Ambiguities** 11%
- **Width of Understanding** 10%
- **Novelty** 1%
Figure 23. The pie chart above illustrates the coded data in each category of critical thinking. Tool: Google Docs; Strategy: Final Peer Edits.

**Literary criticism (strategy).** The literacy criticism was a culminating assignment for the critical theory course. Throughout the course students had had the opportunity to read many literary criticisms on the novels that they had spent the year studying. This assignment was an opportunity for them to take the knowledge that they had gained through studying critical theory and apply it to their own literary critique of Carmilla. Google Docs: Literary criticism

Write a 1-2-page rant…formal / revised…in which you either fashion and briefly defend an argument or utilize a controlling idea to briefly analyze a specific motif, symbol or
character in terms of how it serves, complements or perhaps even creates tension with the
larger aesthetic thrust of the novel. Just FYI arguments are generally related to questions
of theme…sociology, feminist/not feminist, ambivalence, coded aggression etc. These
topics are actually too broad for this assignment so you may want to steer clear of the full
blown argument. It can be done but it’s not easy to do in such a short assignment. If you
analyze something via a controlling idea you could keep your focus narrow enough to
effectively analyze a single character or motif in one to two pages. A very strong writer
could analyze Carmilla in 2 pages but even if you are not feeling very strong at this point
in the year anyone can analyze the function of the father or the hunchback in 1-2 pages.
Likewise anyone could analyze a few instances of the mirror motif in this timeframe.

While the data for this assignment is similar to the data collected across the entire
study (See Figure 24), the instructor was very concerned about the student’s writing for
this final assignment.

This assignment could have been highly influential if I had structured things
differently. The students don’t write well at the very end of the year and they had
made too many posts and become too mired in repetition without slowing down to
develop ideas and benefit from multiple sources of feedback so the final literary
analysis sort of ran off the rails in ways that should not directly implicate the
relative value of the other features. This is where the whole weight of things
really drove the data into a kind of extraneous variable ditch and I would certainly
not judge the larger picture by this set of outcomes. (Instructor, Google Docs:
Week 6)
In analyzing the data in Google Docs (tool) using the literary criticism (strategy) instances of critical thinking were recorded in the following categories:

- *Justification* 40%
- *Linking Ideas* 28%
- *Outside Knowledge* 12%
- *Ambiguities* 7%
- *Importance* 7%
- *Width of Understanding* 5%
- *Practical Utility* 1%
Summary

The data presented in this chapter examines the phenomenology of critical thinking taking place in various discussion strategies using common asynchronous online writing tools through the lens of profoundly gifted high school students. The tools and strategies used in this study are listed in Table 10 below.
In the preceding analysis, the data was broken down individually by looking at each tool and the strategies implemented within them as separate entities. In summarizing the data, it may be helpful to view each tool and the strategies implemented in their entirety. The percentages of each critical thinking element in the Newman et al (1995) Critical Thinking Model that occurred within the tools and strategies used in this study are represented here.

**Discussion forum tool.** Students used the discussion forum during the second, third, and fourth week of the study. *Justification, linking ideas* and *outside knowledge* are the most commonly used areas of critical thinking within each strategy. There is some evidence of *width of understanding* and *ambiguity*. The data is illustrated in Figure 25 below.
Figure 25. Within the discussion forum tool, the percentages in each critical thinking category using the following strategies: structured questions, scaffolded questions, and open-ended questions.

Blog tool. Students used the blog during the second, third, and fourth week of the study. Once again, justification, linking ideas and outside knowledge are the most commonly used areas of critical thinking within each strategy. Outside knowledge is
consistently present. There is also some evidence of width of understanding, practical utility, novelty, and ambiguity. The data is illustrated in Figure 26 below.

*Figure 26.* Within the blog tool, the percentages in each critical thinking category using the following strategies: open-ended questions, role play, and argument/debate.
**Google Docs tool.** Students used the Google Docs during the fifth and sixth week of the study. Once again, *justification* and *linking ideas* were the most commonly used areas of critical thinking. *Outside knowledge* was a bit lower. There is also some evidence of *width of understanding*, and *ambiguity*. *Importance* was seen more frequently than with other tools or strategies. The data is illustrated in Figure 27 below.

![Graph](image-url)

*Figure 27.* Within the Google Docs tool, the percentages in each critical thinking category using the following strategies: draft peer edits, final peer edits, and literary criticism.
Overview of data. In examining the data through the lens of the tools used in this case study, a broader picture emerges of the critical thinking strategies that the student participants are using in their online writing. As mentioned throughout the data analysis, the majority of instances of critical thinking occurred in the justification, linking ideas and outside knowledge categories. This is also evident in examining the data across the discussion forum, blog, and Google Doc tools where these three categories of critical thinking made up 84%, 80%, and 68% of all coded instances of critical thinking, respectively.

The other seven categories of critical thinking examined through the lens of the tools used in this study also remained relatively consistent. However, two areas of critical thinking were of some interest when compared across the three different tools.

- **Ambiguity** was addressed progressively across the discussion forum (7%), blog (9%) and Google Docs (11%).
- **Importance** made up only 1% of the discussion forum coded instances; 0% of the blog coded instances; and 14% of the Google Doc coded instances.

In Chapter 5, the impact of these tools and strategies on critical thinking are discussed through the literature and findings in this case study.
Chapter 5: Conclusion

This chapter presents a summary of the case study and draw conclusions based upon the literature in Chapter 2 and the data presented in Chapter 4. It provides a discussion of implications for critical thinking in the design of future blended learning courses for profoundly gifted high school students as well as recommendations for further research.

Summary of the Study

This research is a case study that examined critical thinking in the online component of a blended learning environment for profoundly gifted high-school students using the Newman et al. Model of Critical Thinking (Newman et al., 1995) as a theoretical framework. Its purpose was to examine critical thinking taking place online using various discussion strategies and common asynchronous writing tools through the lens of profoundly gifted high-school students. It is not the intent of this case study to assess critical thinking or to make global generalizations about critical thinking in the classroom. Rather, its intent is to inform the design of the online components of a high school critical theory course for profoundly gifted high-school students as a first step to developing a blended learning environment and perhaps long-term to inform other hybrid course designs for gifted populations.

Overview of the problem. A 2009, national study of school district administrators estimated that the number of K-12 students enrolled in online and blended courses was approximately 1,030,000 (A. G. Picciano & Seaman, 2010). Administrators responding to that study cited several reasons for the importance of offering blended
courses for their students. Among them were offering courses not otherwise available; meeting the needs of specific students; reducing scheduling conflicts; addressing limited space; and a belief that these courses were pedagogically more beneficial. Given these perceived benefits by educational administrators, it is not surprising that online and blended learning courses have become more common as a way to provide differentiated instruction for gifted and profoundly gifted students (Breedlove, 2014).

The profoundly gifted students score in the 99.9th percentile, with standard deviation of +3 or higher, on a standardized IQ test. Consequently, it is a very unique population with highly individual traits that are difficult to categorize (Gagné, 1998). Many profoundly gifted students find a great deal of dissonance between their own perceptions and understandings and those of most other people they interact with. For this reason, they are often less social and choose to work in isolation whenever possible (Clark, B, n.d.).

Many traits of profoundly gifted students lend themselves well to the case study critical theory literature course in this research. They also align nicely with several of Newman et al.’s (1995) elements of critical thinking, including linking ideas, width of understanding, outside knowledge, novelty, critical assessment, and practical utility. While many of the findings in this study may be generalizable to a broader population, it is expected that given the traits of profoundly gifted students, some elements of critical thinking came naturally to the case subjects in this research.
However, the link between the promise of technology, and its implications for the type of deep learning required in critical thinking has yet to be determined (Njenga & Fourie, 2010). Of great concern among researchers of digital learning is that “current and future research on new technologies is tied to their speed of development,” (Guri-Rosenblit, 2005, p. 20). Researchers have not had the luxury of examining the effects of new technologies on learning over time, because technologies change so quickly that is either no longer being used or it has evolved to a level where the research becomes dated and irrelevant to the current classroom environment. Case studies and design-based research on the tools and strategies used in digital learning and their impact on deep learning offer great promise in understanding how technology can be used to facilitate critical thinking in the classroom. Despite the ever changing landscape of evolving technology in the classroom, researchers need to focus on how to facilitate higher order skills such as critical thought within these environments, particularly for diverse populations like the profoundly gifted.

Gifted students by definition are rare and widely dispersed geographically. In 2004, a national study found that, since its inception in the 1990s, over 34,500 academically gifted students have participated in a distance learning education program at one of four talent search centers in the U.S. (S. Lee et al., 2008). While this case study focused on a brick-and-mortar school implementing a blended learning environment to a course, these statistics show that online/blended programs for gifted learners are being made available to gifted students all across the U.S. Yet a review of the literature shows that there is little research being done to help guide the design and implementation of
these programs to ensure that critical thinking and effective learning are taking place. According to the 2013 iNACOL *Annual Report of Online and Blended Learning*, across all student learning populations, online and blended learning activity has expanded so quickly that there are mounting concerns about how to ensure the quality and accountability of these programs (Watson et al., 2013).

A 2012 survey of empirical research on technology in gifted education echoes these concerns (Periathiruvadi & Rinn, 2012). A review of the literature shows that fewer than five research articles were published on digital or online high school learning environments from 2000-2012 (Böhmövá & Roštějnská, 2009; Dixon et al., 2005; Ng & Nicholas, 2010; Olszewski-Kubilius & Lee, 2004; Periathiruvadi & Rinn, 2012). Only two studies, Dixon et al., (2005) and Ng and Nicholas (2010), examined critical thinking in gifted high-school students. The Dixon study was from a digital perspective only and did not take place in an online learning environment. Dixon and her researchers found that critical thinking was more evident in male student’s writing using digital technology. Ng and Nicholas’ study looked at critical thinking online only as it relates to participation in gifted adolescents, their findings indicated that a dialogical environment contributes to participation and critical thinking in online environments.

Given the lack of research in this area, it remains unclear how critical thinking transfers to online environments. Dixon et al. (2005) warn that while the term critical thinking is a common topic of discussion in gifted education literature, the limited number of studies that measure critical thinking in gifted digital environments is a threat to the overall quality of these courses. As mentioned in Chapter 3, student participants in
this study were not informed of the specific areas of critical thinking that are represented in the data, but questions and strategies were designed to specifically address instances of critical thinking within the critical thinking model used in this case study.

While this case study focused specifically on critical thinking and blended learning within a profoundly gifted high school, it is noted that more research is needed in all populations of learners. One key challenge in researching blended environments is isolating factors that affect learning. Course design must be taken into account when implementing an online component to a course because as Clark (1994) reminds us, it is the course design that influences learning not the media. As blended learning environments expand, the effective integration of technology will be largely dependent upon the instructional design of the course—not on the actual technology itself (Saadé et al., 2012).

**Purpose statement.** The purpose of this holistic single case study was to examine how critical thinking can be facilitated in the online component of a blended learning literature course for profoundly gifted high-school students using the Newman et al. (1995) Model of Critical Thinking as a theoretical framework. The case study design allows the researcher to examine the phenomenology of critical thinking taking place in various discussion strategies using common asynchronous writing tools, through the lens of profoundly gifted high school students. The data presented in Chapter 4 was not intended to assess critical thinking or to make global generalizations about critical thinking in the gifted classroom. Rather, it was the intent of this case study to inform the design of the online components of a critical theory course as a first step to developing a
blended learning environment and perhaps long-term to inform the design of other hybrid
course designs for profoundly gifted students.

Research questions. Specifically, this study was designed to address the
following four research questions:

1. What critical thinking skills are profoundly gifted high school students using in
   their online writing?
   a) What critical thinking skills are they missing?

2. How can online tools and strategies facilitate critical thinking in a literature
   course for profoundly gifted high-school students in a blended learning
   environment?
   a) How do online tools (discussion forums, blogs, Google Docs) influence
      critical thinking?
   b) How do instructional strategies (structured, scaffolded, open-ended,
      debate/argument, role play, peer edits, literary criticism) influence critical
      thinking?

Review of the methodology. This research uses a single, holistic case study
methodology to investigate the impact of various discussion strategies using common
asynchronous writing tools in a blended critical theory class at a free public day school
for profoundly gifted students. Seven students were registered for the critical theory class
and all students participated in the study as part of the curriculum for the course. The
study took place during the last six weeks of the year-long course.
The selection of the case school was significantly influenced by the narrow admission criteria used in creating a school exclusively for profoundly gifted students. There are currently less than 20 high schools in the United States that have similar admissions criteria ("Schools for the gifted child," 2015). The course itself was selected because it met the criteria of a blended learning class at a high school for profoundly gifted students and the administrators of the school and the instructor were enthusiastic about creating a blended learning environment but were concerned about compromising the quality of discussion in the online portion of the course. Additionally, the instructor’s assessment of the student’s work indicated that while students were proficient writers, they had difficulty incorporating critical thought into their written work. These concerns prompted the instructor to be cautious of moving the course to a blended learning environment until it could be demonstrated that critical thinking could be facilitated in the student’s online writing. For these reasons, the school was anxious to participate in the study in order to inform future blended learning course designs.

Newman’s Model of Critical Thinking (Newman et al., 1995) provided the theoretical framework for examining critical thinking in the online artifacts created by students in the course. For ease of reference, the code system with brief definitions for each category is represented in Table 11 below. Appendix B provides the theoretical framework in its entirety. The framework was chosen because it specifically addresses the concerns of critical thinking in group learning through the process of using content analysis in electronic artifacts. Five sources of data were analyzed as part of this case study: direct observation, documents, participant observation, artifacts and interviews.
However, it should be noted that observation, pre and post survey documents, and interviews were used only as a way to inform the data obtained from the content analysis of the online artifacts.

Table 11

Newman et al. Model of Content Analysis for Critical Thinking Online

<table>
<thead>
<tr>
<th>Categories</th>
<th>Code</th>
<th>Subcategories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance (relevant statements)</td>
<td>R±</td>
<td>2</td>
</tr>
<tr>
<td>Importance (important points/issues)</td>
<td>I±</td>
<td>2</td>
</tr>
<tr>
<td>Novelty (new information, ideas, or solutions)</td>
<td>N±</td>
<td>10</td>
</tr>
<tr>
<td>Outside knowledge or experience</td>
<td>O±</td>
<td>8</td>
</tr>
<tr>
<td>Ambiguities (clarified or confused)</td>
<td>A±</td>
<td>4</td>
</tr>
<tr>
<td>Linking ideas or interpretations</td>
<td>L±</td>
<td>4</td>
</tr>
<tr>
<td>Justification (justifying solutions or judgements)</td>
<td>J±</td>
<td>6</td>
</tr>
<tr>
<td>Critical Assessment (assessment of contribution)</td>
<td>C±</td>
<td>4</td>
</tr>
<tr>
<td>Practical Utility (grounding)</td>
<td>P±</td>
<td>4</td>
</tr>
<tr>
<td>Width of Understanding (complete picture)</td>
<td>W±</td>
<td>2</td>
</tr>
</tbody>
</table>

*Note. Categories of critical thinking with code and number of subcategories. From (Newman et al., 1995).*

Artifacts analyzed in this study were created by student participants using discussion forums, blogs and Google Docs. These tools were provided to students through an LMS specifically designed for the course. Detailed information about the
LMS can be found in Appendix A. Instructional strategies used in their implementation were open prompts, structured prompts, scaffolding, argument/debate, role play, as well as group and independent work.

Findings

What critical thinking skills are profoundly gifted high school students using in their online writing? What critical thinking skills are they missing? In examining the data through the lens of the tools used in this case study, a broader picture emerges of the critical thinking strategies that the student participants are using in their online writing. As mentioned throughout the data analysis, the majority of instances of critical thinking occurred in the justification, linking ideas and outside knowledge categories. This is also evident in examining the data across the discussion forum, blog, and Google Doc tools where these three categories of critical thinking made up 84%, 80%, and 68% of all coded instances of critical thinking, respectively.

The other seven categories of critical thinking examined through the lens of the tools used in this study also remained relatively consistent. However, two areas of critical thinking were of some interest when compared across the three different tools.

- *Ambiguity* was addressed progressively across the discussion forum (7%), blog (9%) and Google Docs (11%).

- *Importance* made up only 1% of the discussion forum coded instances; 0% of the blog coded instances; and 14% of the Google Doc coded instances.

Newman et al. (1995), suggest that *linking ideas* and *outside knowledge* are often strong components of critical thinking in online discourse. “On average, the students taking part
in the computer conferences brought in relevant outside material more often and were better at linking together ideas and solutions” (Newman, Johnson, Cochrane, & Webb, 1996, p.62). In their research using the model, Newman et al. (1995) also note that there is a logical progression in online discourse from linking ideas and solutions to \textit{justification}. In comparing face-to-face with online discourse, they found that the formality of writing online was beneficial to these areas of critical thinking. “The students seem to have adopted a more serious, worthier style when taking part in the computer conferences, as if writing an essay” (Newman et al., 1996, p.62).

The remaining seven categories (\textit{ambiguities, width of understanding, importance, novelty, practical utility, critical assessment} and \textit{relevance}) comprised 21\% of all instances of critical thinking analyzed in the study. Yet as noted above, the number of coded instances of \textit{importance} increased significantly when the students began doing formal writing in Google Docs. Newman et al. (1995) saw increases of \textit{importance} in written discourse in their research, and it is possible that the more formal writing process that the students did in Google Docs helped facilitate the use of \textit{importance} as an element of critical thinking in the student’s writing.

It is also suggested that the progressive use of the critical thinking element of \textit{ambiguity} in this study is related to the the stages of critical thinking. \textit{Ambiguity} was lowest in the discussion forums which were always presented first in the study and the highest in the students’ written work in Google Docs. As Garrison (1991) theorizes in his stages of critical thinking, \textit{ambiguity} requires students to not only identify the problem but also to begin to define problem boundaries as well as ends and means. This suggests
that it may have taken students more time to begin to consider ambiguity in their analysis.

Categorization was not meant to be definitive, but rather to generate a sense of the predominate critical thinking actions encountered. It should be noted that the categorizations of critical thinking were reflective of the unique content of the course and the technology used in its implementation. That said, it is hypothesized by the researcher that the unique traits of the instructor/student dynamic; the clearly defined expectations of the student’s work; and the instructor’s lack of experience with the technology had some impact on elements of critical thinking defined by the Newman et al. (1995) model.

Width of understanding, novelty, and practical utility all fit into higher levels of Garrison’s critical thinking stages (Garrison, 1991), requiring evaluation of alternative solutions and new ideas as well as acting upon understanding to validate knowledge. The influence of the instructor’s Reading Pointers for Carmilla, (Appendix D) may have directly impacted the students’ ability to look for their own alternative solutions or new ideas to expand their world view of the novel beyond the supplemental material provided in the course. The Reading Pointers for Carmilla were referenced by the instructor in most discussion forum, blog and Google Doc assignments and classroom observation indicated that when students strayed from the topics listed in the document, they were gently guided back to the reading pointers to avoid what the teacher referred to as “reaching for shiny bits” or ideas that may have appeared interesting on the surface but really had no real context within the novella.
Providing resources like *Reading Pointers for Carmilla* is one type of scaffolding technique that can support critical thinking (Dabbagh, 2003). However, its presentation as a static document that is intended to serve as a guide throughout the entire novella, removed the essential just-in-time element that allows for students to move past right vs. wrong to recognize multiple viewpoints beyond those expressed by the instructor. Had the instructor offered a guide that provided fading support as students moved through the book, they may have had more success at developing a more complex understanding of the novella where their thinking was shaped by the context and not a handout. Based upon Garrison’s stages of critical thinking (1991), *Reading Pointers for Carmilla* (Appendix D) may have prevented students exploring novelty and practical utility and may have also limited their ability to exhibit width of understanding in their writing.

Upon reflection, it is possible that the instructor was concerned that the students work would reflect on her teaching, and by providing a document to guide them through the “correct” interpretations of the novella it would ensure that the students were successful in the online discussions and blogs. Dabbagh, (2003) points out that scaffolding supports modeling thinking that allows for critical analysis and prompts students to brainstorm new solutions that generate metacognitive thinking processes. Scaffolding can be particularly helpful in online environments where it is possible to implement scaffolding techniques that allow for student reflection and an analysis of peer responses before posting to a discussion board or blog. This is particularly evident in gifted populations. Ng and Nicholas (2010) found that while a totally open pedagogy in the gifted classroom often results in students losing focus, a planned progression from
structured to open learning promotes higher order thinking skills and challenges high-ability learners.

**How do asynchronous tools (discussion forums, blogs and Google Docs) influence critical thinking?** This study used the following asynchronous tools in examining critical thinking: discussion forums, blogs and Google Docs. Students used the discussion forum and blog during the second, third, and fourth week of the study, and Google Docs in the fifth and sixth weeks of the study. In her poststudy interview, the instructor expressed her concern that the discussion forum and blog were not appropriate for the course because they allowed students to go off course with a discussion without a way for her to guide them back.

It is evident that the course discussions are much more effective face-to-face, because students can be guided toward appropriate themes in the novel. When left on their own in the discussion forum and blog they often lost their way and became frustrated. (Instructor, poststudy, May, 2015)

Students in their poststudy questionnaire expressed similar concerns. Allison expressed her frustration with the discussion forum and blog by saying: “It made it so we just did a lot of writing without much direction, which meant I kinda ran out of things to say” (Allison, poststudy, May 2015).

Several students remarked that the discussion forum and blog limited their interaction with one another, which could have also impacted students’ ability to demonstrate critical thinking elements such as width of understanding, practical utility, critical assessment, novelty, importance and relevance. “We didn’t have as much
discussion with each other about the book because of the discussion forum and blog” (Levi, poststudy, May 2015).

Khoo et al. (2009) found that when peers within an online community engage in asking each other questions; reflecting and elaborating on topics of discussion; and providing high levels of feedback; students are happier, and learning and critical thinking are facilitated. While students did not comment on the learning or critical thinking aspects of the lack of community within the discussion forum and blogs, they did seem to find it a lonely and somewhat frustrating process. “They [discussion forum and blog] made us interact a lot less with each other, since normally we would discuss in class rather than just post responses or rants” (Kimmy, poststudy, May 2015). Stephanie expressed her frustration with the lack of online community by saying, “In some ways they [discussion forum and blog] stifled discussion in that we spent a lot of time working on online assignments rather than discussing” (Stephanie, poststudy, May 2015).

Asynchronous discussions that occur within blog and discussion forums are a critical factor in a successful blended learning environment. Swan (2003) found that social presence in an online environment supports both reflection and collaboration and correlates significantly not only with student’s perceptions of satisfaction, as illustrated here, but also with learning from online courses.

The data indicates that justification, linking ideas and outside knowledge were the most commonly used categories of critical thinking within the discussion forum and the blog. All other areas of critical thinking made up less than 10% of the analyzed discussion forum responses and less than 12% of the blog postings. As mentioned above,
the lack of discussion among students in the discussion forum quite possibly limited these elements of critical thinking in the discussion forum and the blog. Several studies examining the effects of social presence in online learning have found that when instruction is designed to facilitate the formation of online communities, critical thinking and higher levels of learning are more prevalent than they are in online courses that do not foster social presence (Anderson et al., 2001; Khoo et al., 2009; Newman et al., 1996; Ng & Nicholas, 2010; Swan, 2003).

The instructor was much more comfortable with Google Docs. “I think the work that the students’ did in the Google Docs was much more indicative of their ability to critically think in their writing” (Instructor, poststudy, May 2015). She attributed this to Google Docs providing a more “fruitful interconnected communication piece where the students really thought about what they were trying to say and got a much more in depth view of other minds in the process” (Instructor, poststudy, May 2015).

Students also seemed to enjoy working in Google Docs. Several of them remarked that the discussion forum postings and blogs were very helpful in writing the literary critique (peer edit) and their final literary critique in Google Docs.

Levi remarked, “I combined a lot of different arguments from my discussion forum and blog postings into my Google Docs writing. It was very helpful to have them” (Post survey, May 2015).

Allison said, “The initial discussion forum and blog postings were helpful because most of them included useful, thoughtful ideas. The blogs were also helpful. It was great
being able to have everyone’s posting available to me as I constructed my arguments in Google Docs” (poststudy, May 2015).

Jack also found the discussion forum and blog to be excellent materials to refer to in writing his literary critique.

The discussion forum and blog postings for the class set the bar for my own writing and gave me more than enough to think about with respect to literary analysis in Google Docs. However, knowing what everyone else had written did make it a bit difficult to choose a topic, as I tend to want to be original, and more than enough had been said about the majority of character themes, trends, and motifs within the book. (Jack, poststudy, May 2015)

Both the students and the instructor seemed pleased with the work done in Google Docs during the last two weeks of the study. The data however, shows only slight variations in critical thinking from the blog and discussion forum entries. **Justification** remained fairly constant within the discussion forum and blog entries at 9% to 16%, however in Google Docs, **justification** was in the three to four percent range for peer edits, but when students wrote their final literary criticism it jumped to 21%. There was also a slight increase in **importance** where students brought up more important points in their writing in Google Docs.

While Newman et al. (1995) did not examine using different types of tools in their evaluation of critical thinking in computer conferencing, they do suggest that face-to face seminars typically produce more markable instances of critical thinking, however, the positive instances of critical thinking were more evident in online entries. Their rationale
for this is that “perhaps students found writing in computer conference to be less
spontaneous and take more thought and time than making a comment in a seminar”
(Newman et al., 1996, p.61). This could be one possible explanation for the very few
instances of negative critical thinking in this study’s data, since discussions which had
previously been held face-to-face were moved online during the six-week study.

The literature on blogs and discussion forums offer similar explanations. In a
study examining critical thinking in face-to-face discussions versus online discussions
Althaus (1997) found that asynchronous online tools allow students to participate in
discussions when it is convenient. This gives students more time to read other students
postings, reflect on them, and write thoughtful responses.

However, as students in this study pointed out, social interchange can be
sacrificed in online discourse, leaving students with little more than their own initial
reflections and not allowing the back-and-forth debate that often stimulates critical
thought (Christopher et al., 2004).

In designing this study, the researcher attempted to address this issue by adding
the discussion forum as one of the tools. It was the intent of the discussion forum that
students would be able to write their own responses and address other student’s responses
in order to create the back-and-forth dialogue that they had in face-to-face classroom
discussions. However, during the first week of the study, the instructor decided that it
would be too much work for the students to be required to post responses in addition to
creating their own original post. (Students made three discussion forum postings a week
for the first three weeks of the study.) Regrettably, this decision also impacted the blogs
as well. Throughout the course of the study, students posted a comment about another student’s discussion forum or blog posting five times. It was however evident in their original postings that they had read their colleague’s postings and had used them to inform their own writing.

It was also the intent of the researcher that the instructor would provide feedback to students in both the discussion forum and the blog. Despite prompting from the researcher, the instructor seemed reluctant to provide student feedback using the online tools. Literature addressing discourse in discussion forums and blogs identifies the educator’s ability to interact, engage in dialogue, and collaborate with students as essential elements in fostering critical thinking in an online environment (Althaus, 1997; Christopher et al., 2004; Garrison et al., 2010; Henri, 1995; Webb et al., 1997). Throughout the course of the study, the instructor made four postings online. Two of those were to encourage students to post their responses in a timely manner. One was a copy of a posting from a student in another class, and only one posting offered the students constructive feedback: “Nice catch Stephanie! I was hoping someone would catch the whole spin on love as a possibly dangerous and not utterly “sweet” experience in the working of that question and I see Stephanie mentioned it…cool!” (Instructor, Discussion Forum, April 2015).

One student, Bryan, expressed his frustration about the situation in his poststudy interview by saying, “I think the total lack of input from the teacher about the way our ideas were going put us in a rut” (Post survey, May 2015).
In retrospect, the design of the blog in this study may have also impacted the student’s critical thinking in their writing. All student blog postings for the week were posted on the same page in the LMS. The consequence of this design was that once the determination was made that students would not be posting responses to other postings in the discussion forum, there became very little difference between the discussion forum and the blog postings. The data from this study supports this supposition showing that there was very little difference in critical thinking between the discussion forum and the blog postings.

Instructor presence and social presence play a role in facilitating critical thinking in a blended learning environment. Pena-Shaff and Nicholls (2004) found that over 90% of students participating in online discourse frequently checked to see if other students had replied to their posts. They suggest that their expectancy of feedback not only motivates students to participate, but also encourages critical feedback that they believe is useful to their peers. Students also rely on receiving consistent, timely, constructive feedback from the instructor.

Social presence is seen as being particularly important in blended learning environments for gifted learners where interactions are highly intellectual as well socially and emotionally connected (Lee & Bonk, 2016). Ng and Nicholas (2007) suggest that this phenomenon may be the constructionism theory in which learning is facilitated when students are constructing a public artifact that will be viewed, critiqued and perhaps used by others.
As discussed previously, asynchronous discussions that occur within blog and discussion forums are a critical factor in a successful blended learning environment. Swan (2003) found that social presence in an online environment supports both reflection and collaboration and correlates significantly not only with students’ perceptions of satisfaction but also with learning from online courses.

In their research on developing a framework for developing and implementing an online community, Khoo, Forret and Cowie (2009) found that online communities form when peers engage in asking each other questions, reflecting and elaborating on topics of discussion, and providing high levels of feedback. Given the elements of critical thinking within the Newman et al. (1995) model, it seems evident that the formation of an online community would facilitate many aspects of critical thinking including but not limited to: relevance, novelty, ambiguities, linking ideas, critical assessment, and width of understanding. Several studies examining the effects of social presence in online learning have found that when instruction is designed to facilitate the formation of online communities, critical thinking and higher levels of learning are more prevalent than they are in online courses that do not foster social presence (Anderson et al., 2001; Elaine Khoo & Cowie, 2011; Newman et al., 1997; Ng & Nicholas, 2010; Swan, 2003).

The consequences of a lack of responses from the instructor and other students in the discussion forum and blog seem evident in the instructor and student poststudy interview results. If the students and instructor had responded to one another’s postings, they may have found more benefit to the blog and discussion forum that Google Docs would not have facilitated. In examining the data from this study it is reasonable to
question how the tools and strategies implemented in the blog and discussion forum may have been impacted by the missing components of instructor and social presence.

**How do discussion strategies (structured, scaffolded, open ended, argument/debate or role play) influence critical thinking?** Discussion strategies seemed to make little difference in the instances of critical thinking within the blog and discussion forum in this study. However, there were strong opinions from study participants about which strategies were and were not helpful in facilitating critical thinking. Both students and the instructor expressed frustration with the role-play strategy. Below is what the instructor had to say:

> I see some inherent value in the role play strategy, but too many of my students couldn’t resist the chance to lampoon and satirize so it was a bit rocky. I was pleased with the ones who observed how making a different argument than that which came naturally to them could actually influence their own thinking in unexpected ways…but for others this was just fun and playful…it could have been really thoughtful if I had reigned things in more but I didn’t realize that until it was too late. (Instructor, poststudy, May 2015)

During the writing of the role-play blog, all but one student expressed discomfort with writing an argument from a perspective that they did not agree with. Allison remarked, “Trying to approach the book from a different perspective was frustrating and ultimately unhelpful in helping me examine real themes and motifs. I really had no interest in approaching this assignment in any serious manner” (Allison, poststudy, May 2015).
Both the instructor and the students seemed comfortable with the argument strategy. In contrast to the role-play strategy, students seemed to have little difficulty using the debate strategy effectively in their writing. According to the instructor...

This strategy is standard/familiar and they [students] have had years to practice here so naturally it worked well. In the future I think I will figure out a way to incorporate the role play approach into the debate because this is where real growth could occur if they took it more seriously. I would really love to see them moving from the standard sphere where they simply reproduce mastery that has been attained from earlier experiences. (Instructor, May 2015)

While students seemed to enjoy the freedom of open-ended responses in the blog and discussion forum, the instructor was less enthusiastic. “The brainstorming type of frame really just doesn’t work for a course like this. For adolescents open means loose and unwieldy” (Instructor, poststudy, 2015). It is interesting to note however, that the data did not reflect the instructor’s concern and critical thinking did not seem to be impacted by the open-ended strategy.

The literature also suggests that the teacher’s negative response to open-ended responses could have been more reflective of her teaching style than her students’ ability to critically analyze the novel when left to choose their own direction in an open-ended response. In examining personality-based learning styles of gifted learners, Mills (2003) concluded that gifted students prefer abstract themes and open-ended responses. Thomson (2010) notes that teachers of gifted students often find more success when they view their role “less as someone who gives content and imparts knowledge to the student
and more as someone who opens up doors for them to discover new content, new
knowledge, new ways of solving the same problem—and to learn how to learn” (p. 685).

In considering the course design for future courses, the instructor noted that she
would consider combining the scaffolding and structured questions into incremental
writings that students would work on throughout a single week in the discussion forum
and then have them complete one blog entry every other week. “The
scaffolded/structured questions could be directly related to the burgeoning blog and could
build toward it making the blog a culminating assignment making the entire process more
cohesive” (Instructor, post survey, May 2015). Lee and Bonk (2016) support this idea
noting that as students reflect on and elaborate on new content, they are more likely to be
able to think critically about their writing as they consistently go back and reanalyze what
they have written and what others have written.

As mentioned previously when discussing tools, both the students and the
instructor enjoyed working in Google Docs. While the peer editing and literary criticism
strategies were originally intended to be addressed in a separate research question
focusing on group work and individual work during the final two weeks of the study,
time did not allow for the students to work in groups beyond having a peer edit their
literary analysis. Due to this unforeseen change in the design of the study, the peer edit
strategy and the literary criticism strategy are more appropriately addressed here in order
to gain a more holistic overview of all strategies used within the study.

The peer editing strategy (draft and final) gave students one of their first
opportunities to collaborate with one another in the online environment. According to the
instructor, “The peer editing went very well and I think this was the most helpful aspect for critical thinking. I would like to see two peer editors for each literary critique as a way of providing students with more feedback” (Instructor, post survey, May 2015).

While the data did not necessarily reflect much difference in critical thinking, the use of justification and linking ideas was slightly lower in the peer edited draft and the peer edited final critique. Both justification and linking ideas returned to percentages more representative of the overall data when the students wrote their literary criticisms in Google Docs without peer edits. Addressing important issues (importance) was seen at higher percentages in Google Docs than in any other tool but seemed to remain consistent across strategies.

Research supports the idea that peer feedback improves academic achievement, increases motivation and encourages deeper learning (Dweck, 1986; Garrison et al., 2010; J. Lee & Bonk, 2016; Thomson, 2010). While most of the strategies used in this study were new to the students, peer editing was something that they had been doing all year, often independently in Google Docs. It is unfortunate that more peer feedback, as well as instructor feedback, was not implemented in the other strategies and further research should be done to examine how peer feedback affects strategies such as role play and argument/debate.

**How do individual and group projects influence critical thinking in written work and peer reviews?** At the onset of this research project, it was thought that there would be some evidence to suggest that individual and group projects may in some way influence critical thinking. Regrettfully, time did not allow for students to work in groups
other than to peer edit each other’s work during the fifth week of the study. The peer edit strategy and the literary criticism strategy are discussed within the strategies research question above.

**Conclusions**

Beyond the specifics of the research questions addressed above, several themes emerged from the five sources of data (direct observation, documents, participant observation, artifacts and interviews) that were analyzed as part of this case study:

**Instructor training.** Instructor training and buy in of the online component of the course is crucial to its success. In this study, the instructor had a preconceived idea that Google Apps were difficult to use. This could have potentially been the result of previous experiences with the school’s firewall blocking access to Google. While this situation was resolved by using Google Apps for Education, the instructor’s prior experiences caused her anxiety and frustration to easily surface when working in the online component of the course. Here is what she had to say:

I felt at a loss because I didn’t have the requisite knowledge to adequately replace what we were doing in the face-to-face classes. Commenting in Google Docs has not worked well for me in the past, and it did not work well for me in this situation. I suppose I needed training well in advance of actually launching this unit, but I had no idea how much of an impact my frustrations with the technology would impact my ability to be an effective instructor in the online component of the course. (Instructor, post survey, May 2015)
According to Wilson & Stacey (2004), “. . . staff development strategies need to focus on achieving a critical mass of staff that are competent online teachers and that enhance the institution’s capability to sustain the integration of new technologies into learning and teaching practices” (p.34). The participating school in this study was very eager to implement blended learning classes for many of the same reasons cited in the Picciano & Seaman (2010) national study polling educational administrators about online learning. These reasons included meeting the needs of specific students; reducing scheduling conflicts; addressing limited space; and a belief that these courses were pedagogically more beneficial.

When teachers are asked to move their courses to a blended learning environment, to provide students with more opportunities, they are often unclear about how to make the transition from a face-to-face to a blended learning environment. In this study, the face-to-face and online components of the blended learning environment were two distinctly separate parts that are combined to make a cohesive critical theory course for profoundly gifted high-school students. Clark (1994) makes an excellent point that good instructional design is a key component in successful learning. However, teachers without training often find that their inexperience with the medium has a significant impact on their ability to facilitate learning in online and blended learning environments.

The instructor that participated in this study was an excellent teacher in the face-to-face classroom, but by her own admission, she lacked the proper training to effectively teach in an online environment. She was not comfortable in the online portion of the blended learning course and both the instructor and the students felt that this
compromised the student’s work within the LMS. iNACOL’s blended learning framework identifies four competency domains for instructors teaching in a blended learning environment: mindsets, qualities, adaptive skills, and technical skills (Powell et al., 2014).

In this study, a lack of guidance from the instructor resulting from her frustration with Google Docs in the past (mindset), her preference for face-to-face group discussions (qualities), her difficulty in adapting to the online environment (adaptive skills) and her tentative stance on learning new technologies (technical skills) contributed to creating a blended learning experience for the students that did not provide them with the feedback that they needed to build on their critical thinking skills.

The data suggests that in blended and online environments, teacher training is critical to Community of Inquiry. It is the instructor presence that guides students through cognitive presence by presenting course materials and reinforcing key concepts. It is also the instructor presence that fosters and promotes student engagement and social presence. When instructors aren’t comfortable with the technology in a teaching environment, Community of Inquiry is difficult to achieve and instructors are unable to promote areas of critical thinking in the following ways:

- defining and initiating discussions
- helping students bring outside knowledge or experiences to new learning
- focusing discussions
- avoiding misconceptions
- sharing expectations
• encouraging collaboration

• confirming width of understanding

**Instructor and peer feedback.** Students required much more feedback from the instructor about their posts. The instructor’s previous experiences had left her with anxiety about logging in to the learning management system, responding to discussion forum and blog postings, and commenting within Google Docs. Throughout the year, students had consistently used Google Docs to do peer editing with other students. However, students were required to print those documents out and all instructor comments were handwritten on the printouts. During the six weeks of the study, despite the ease of adding comments in Google Docs, the instructor made no attempts to provide comments to students about their peer edits or final literary analyses and only made four postings within the blog and discussion forums. Additionally, while the idea of a flipped classroom appealed to the instructor, in practice, it seemed to involve more time than the she had budgeted to provide student feedback. This may have been partially resolved by the instructor working on providing online feedback in class while the students were reading or doing research, but she had a difficult time giving up the face-to-face interaction that they had enjoyed in the brick-and-mortar classroom throughout the majority of the course.

Instructor training and buy in and their impact on blended learning were obvious factors influencing feedback to students. It is also possible that the instructor was overwhelmed by end of the year responsibilities and was unable spend, or unaware of the time online instructors need to devote to a blended learning environment. Both Bullen
(1998) and Garrison & Arbaugh (2007), stress that student critical thinking processes are significantly affected by the community of inquiry achieved with an online teacher presence and constructive peer feedback.

The instructor’s lack of feedback and viewpoint that requiring peer feedback would overwhelm students not only had a probable impact on the critical thinking data in this study, but also created an environment where students felt unsupported. Jack commented, “I just ran out of things to say” (Jack, poststudy, May 2015).

Stephanie added:

If I could have had more feedback from other students and the instructor, it might have helped come up with other themes or motifs in the novel that I was missing. I was so excited to take this class online. But at 3:00 a.m. the discussion forum feels like a very lonely place, with no one to bounce ideas off of. (Stephanie, poststudy, May 2015)

**Number of posts and time limits.** Posting each night was an overwhelming amount of work for these students. The students in this study put a great deal of time and thought into their work in the discussion forum, blog, peer review, and final papers. Their work was thoughtful, critical, and for the most part, done with purpose and care. The caliber of responses received is evidence of the time that students spent on these assignments.

As an experienced gifted education teacher, the instructor in this study was very concerned that students would be overwhelmed by the amount of work required by students participating in the blended learning study. The first week of the study, the
instructor made the determination that the original study design of four discussion forum posting per week was too many and the number of forum postings per week was reduced to three. Additionally, during the fifth week of the study, it was originally intended that the students would work in groups to create a literary analysis of several themes in the novella. As the study progressed this assignment was modified when the students began to exhibit end-of-the-year fatigue. In an attempt to reduce their workload, the decision was made to have each student write one paragraph in week 5 on a topic of their choice and have it reviewed by one peer. Additionally, students also wrote a final draft of their analysis. As mentioned previously, the lack of a community of inquiry with peer and instructor feedback may have also contributed to student fatigue.

At the beginning of the study, the instructor asked the students to spend 30 minutes or less on assignments, but perfectionism seemed to be a common trait among the students and it is evident that students spent considerably more time. Students reported spending an average of 90 minutes on blogs and discussion forums, 75 minutes on peer edits and final literary analysis, and 55 minutes on the literary critique. This seemed to be a struggle for several students who, as the pressure of end of the year deadlines mounted, found their online assignments to be dauntingly time consuming. Kimmy noted, “I liked the online but there were just too many assignments. Too much breadth and just not enough depth” (Kimmy, poststudy, May 2015).

Dennon (2005) points out that the number of assigned postings is a common concern of instructors teaching online, yet their isn’t really a magic number. Instructors should estimate the amount of time that students will spend on a discussion and be
willing to adjust the number of posts based upon class needs. It should however be noted that achieving an appropriate number of posts can not only help facilitate critical thinking it can also facilitate peer responses (Newman et al., 1996).

**It is difficult to replicate face-to-face instruction online.** Doing a study like this during the last six weeks of the school year is a difficult task. Students and the instructor had a routine that had been ingrained by seven months of previous work in a brick and mortar classroom. Initially, the students seemed excited about the change of pace in moving to an online component of the course and the instructor was looking forward to seeing how the online component could be implemented into her classroom.

While six weeks did not give the instructor or the students an opportunity to fully acclimate themselves to a blended learning classroom, they did not always use the LMS efficiently. The instructor had abandoned Blackboard within a few weeks of the first semester of the course because she felt that it was too difficult to upload assignments.

The LMS used for the study was designed to simplify this process. All assignments were loaded for the instructor by the researcher, but she still chose to hand out hard copies of the assignments each week. Some students relied on the hard copies and did not check assignments on the LMS. Resources were handled in a similar fashion where hard copies were distributed in class and electronic versions were available on the LMS.

Discussion and blog assignments were pre-written at the beginning of the study and because the instructor was uncomfortable with participating in the forum and blog discussions, she was unaware that the students were frustrated and running out of ideas for discussion. Both the students and the instructor herself had become dependent on
feedback from face-to-face class discussions in order to gauge the progression of student learning. As the weeks progressed, the class began to naturally flip and discussions that had previously taken place in class were now taking place online. Reading that had traditionally been done outside of class was being done in the face-to-face sessions. The instructor commented:

    I liked the flexibility of the flipped classroom. We could read and research in class and have a homework time discussion element. It’s valuable to see the students actively reading and researching because this is where they generally work alone and could really use a bit more guidance. (Instructor, poststudy, May 2015)

While the flipped class was a positive result of moving to a blended learning environment, the instructor was ultimately more frustrated by the incorporation of an online component to their traditional face-to-face classroom. This is what the instructor for the course had to say:

    I think it was a bit of an awkward change coming at the very end after so much pure brick and mortar class time. If the instructor were better trained in online pedagogy and the students had been anticipating an online experience from the moment they registered for the class I think the buy in might have helped things evolve with more depth. We just happen to be a group that really prefers face time instruction . . . particularly based on comfort and familiarity but also because the dynamic of an actual face-to-face conversation are not truly reproducible as of yet. (Instructor, poststudy, May 2015)
Student responses included two students who preferred the face-to-face component of the course to the online component. Michael said:

I really thought I would like the online part of the class, but there just wasn’t enough feedback from the teacher or discussion with other students. I just kept writing the same things over and over again. In class it’s different. We have great discussions. (Michael, poststudy, May 2015)

Three students preferred the online component of the course. Bryan said:

I would prefer to have a class with an online component. I’m not that organized and it was great knowing that all of my stuff was in one place. I also liked reading other people’s posts because it gave me ideas for my own writing. (Bryan, poststudy, May 2015)

The two other students that participated in the study did not respond to the question.

As with the implementation of any new pedagogy, creating an effective blended learning environment for a classroom takes time and there is an interplay of factors that affect its success. Ultimately, instructor training and the design and facilitation of the online component of a blended learning course are crucial in encouraging participation, promoting positive peer responses and ensuring that instructors have the tools needed to provide feedback to students in a timely and efficient manner (Picciano & Seaman, 2009).

**Future Research and Recommendations**

This research is a case study that examined critical thinking in the online component of a blended learning environment for profoundly gifted high school students
using the Newman et al. (1995) Model of Critical Thinking as a theoretical framework. Its purpose was to examine critical thinking taking place online using various discussion strategies and common asynchronous writing tools through the lens of profoundly gifted high school students.

Data from this study shows several interesting implications for critical thinking in the design of future blended learning courses for profoundly gifted high-school students. The reader may also extrapolate that these implications could be generalizable across most blended and online learning environments. As mentioned previously, it has been suggested that a more scaffolded approach to using the tools in the online component of the course could perhaps be more conducive to promoting critical thinking in this Critical Theory class. In this study, the discussion forum and blogs were viewed as separate tools. In examining the data and responses from the students and the instructor, it was suggested that it may help provide a more cohesive process if the discussion forum scaffolded the blog entries. This format would allow the instructor more flexibility to modify the structured and scaffolded questions to build on student’s strengths and promote areas of critical thinking where students are struggling. In future iterations of this course the online portion may benefit from implementing the structured and scaffolded strategies across the discussion forum, blog and Google Docs tools instead of focusing on these strategies within each individual tool.

The tools used in this study (discussion forum, blog, and Google Docs) seemed appropriate for this Critical Theory course. Each tool provided students with an opportunity to think about their responses in different ways. However, a few
modifications to these tools may help facilitate areas of critical thinking where students were not as strong. It may also help to reiterate that each of these tools is a separate part of the online portion of the course. The design of the tools used in this study ultimately only provided students with small delineations between each tool. This could have been one factor that contributed to the writing process becoming repetitive and students running out of things to say. In future iterations it may be beneficial to provide a clear separation between the tools.

The discussion forum should be used as a tool where students write brief original entries that address an idea or theme or question and then they respond to other students’ postings and the instructor guides the discussion in a process similar to a face-to-face discussion.

It may help to delineate the blog from the discussion forum if the design for the blog provided each student with their own blog page instead of incorporating all student blog responses for the week, on one page. While this was not discussed with the instructor or with the students, upon reflection of the data individual student blog pages may be a way to inform students more formal writing in Google Docs without forcing them to sort through each blog assignment to find their previous entries. It may be necessary to require students to respond to a certain number of peer blogs each week to ensure that students are getting peer and instructor feedback on their blogs.

While the work of Garrison et al. (Garrison et al., 2000b; Garrison, Anderson, & Archer, 2001b; Garrison et al., 2010; Garrison & Arbaugh, 2007; Garrison & Kanuka, 2004) has been cited throughout this document, it is clear that the idea of community of
inquiry (cognitive presence, social presence, and teacher presence) was a missing component in this blended learning course. As Ng and Nicholas (2007) point out, while the dialogic element is important in secondary high-school gifted learners, the social element can not be ignored because the “socially interactive and frequently dialogic nature of learning occurs from the beginning and throughout the process” (p. 191). Additionally, they point out, . . . “the central role of the teacher in guiding the process—both overall and at critical points of conceptualizing and constructing knowledge needs to be highlighted” (p. 191).

By incorporating Community of Inquiry into the online portion of this course, many of the issues encountered in its online component may be addressed:

- **Social presence** provides a venue for students to communicate with other students about their online postings and allows them to develop and build on ideas with supportive feedback from their peers and the instructor. Social presence should be evident across all online tools and strategies.

- **Teaching presence** provides students with direction and feedback from the instructor that confirms understanding, shares expectations, and focuses discussion in a positive and productive way. Teaching presence should be evident across all online tools and strategies.

- **Cognitive presence** relates of the design of the tools, strategies and instructional materials used in the online environment. It should provide students with the opportunity to employ all categories of critical thinking.
While technology such as learning management systems, discussion forums, blogs, and online document editing may provide essential tools for blended learning classrooms, the tools and strategies may not be enough to promote critical thinking across a broad model like Newman et al’s (1995) model of critical thinking. Further research should examine how online tools and strategies affect critical thinking when discourse is supported by the instructor and students are consistently providing each other with feedback within a Community of Inquiry model. It is also suggested that further research may want to examine how teacher training to support Community of Inquiry would affect instances of Newman’s elements of critical thinking in online and blended learning environments, particularly within gifted populations.

**Final Thoughts**

The purpose of this case study was to examine how critical thinking can be facilitated in a literature course for profoundly gifted high-school students within the online component of a blended learning environment. While the data from this case study is not generalizable to all gifted populations, the students that participated in this study were excellent writers. The instructor’s comment made during the pilot noted that while students in her class had the skills to write excellent essays that were structurally sound, they lacked deep reflection and critical thought, was evident in examining the data across all tools and strategies.

In answering the question, what critical thinking skills are profoundly gifted high school students using in their online writing, students demonstrated a strong ability to bring *justification, linking ideas, and outside knowledge* into their writing in the
discussion forum, blogs, and Google Docs. While they were not found to be missing any critical thinking skills, only 21% of all critical thinking coded fit into the remaining seven categories (ambiguities, width of understanding, importance, novelty, practical utility, critical assessment, and relevance).

This data is helpful in informing the design of future critical theory classes at the school by serving as indicator of areas of critical thinking that may need to be addressed more specifically in the student’s writing.

Online tools (discussion forums, blogs, Google Docs) did not seem to influence critical thinking in this case study. The data within all three tools showed that justification, linking ideas, ambiguities, and outside knowledge were the strongest areas of critical thought.

The data examining online strategies (structured, scaffolded, open-ended, debate/argument, role play, peer edits, and literary criticism) also showed that students were most comfortable using justification, linking ideas, ambiguities, and outside knowledge in their writing.

The data from this case study indicates that these students while not using all elements of critical thinking in their online writing, understood how to incorporate it into their work to create thoughtful, well-supported posts. The frustration from both the instructor and from the students seemed to be a lack of teacher presence and social presence within the online component of the course. It is unclear how much of an impact the lack of teacher presence and social presence had on tools and strategies implemented in this study. However, the poststudy responses from the instructor and students seem to
support Garrison’s (Garrison & Kanuka, 2004) theory of Community of Inquiry in supporting critical thinking in a blended learning environment.

In a final analysis of the case study it should be made very clear that the case school and the instructor took a cautious, proactive approach to incorporating blended learning into the classroom by participating in a study that examined how tools and strategies in the online component of the course facilitated critical thinking. Their participation in the study not only helps to inform other blended learning courses for profoundly gifted students but also provides them with data to help facilitate the design of future iterations of the critical theory course at the school.
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Appendix A: LMS Documentation

Documentation for Critical Theory Pilot Learning Management System

Designed by Susan Copp
Platforms: Google Apps for Education
Applications: Google Site, Google Drive, Google Docs, Google Calender
Critical Theory Pilot:
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Chapter 1

General Overview of Learning Management System

This chapter gives a general overview of the Learning Management System (LMS) designed for the Critical Theory course at the case school. Its content includes the purpose of the LMS, an overview of Google Apps for Education, and how it is used in the specific LMS designed for this course.

1.1 Purpose

The LMS is designed as a platform to move a face-to-face high school critical theory course to a blended learning environment. It is intended to serve as a platform to facilitate a course where 50 percent of the instruction will take place in the physical classroom and 50 percent of the instruction will take place online.

1.2 Initial Requirements

In converting this course to a blended learning environment, the first step was to create an LMS that facilitated an online component to a course designed for face-to-face instructor/student interaction. This entailed the following initial requirements:

- Facilitates the design of an online platform that allows for student/instructor interaction in an asynchronous classroom environment.
- Allows for in-house administration of user accounts in compliance with FERPA, Institutional Research Board, and case school privacy protection guidelines.
- Provides a stable platform that requires minimal maintenance and minimal downtime.
- Allows for shared access among instructor/students.
- Facilitates a design within an LMS platform that is easily navigated by students and the instructor to access and update course materials.
- Provides a forum for students and the instructor to initiate and contribute to online discussion.
- Allows students to write, and share documents to facilitate peer editing.
- Allows students to submit their work to the instructor.
- Allows the instructor to provide feedback and comments to the student within the LMS.
- Serves as a portfolio to archive the students work.
1.3 Overview of Google Apps for Education

Google Apps for Education is a suite of productivity tools that can be used within a schools .edu domain to prevent anyone without the appropriate credentials from accessing course materials and student work. Applications within the suite provide a platform to create a learning management system appropriate for the blended learning environment desired for this course. The following applications have been used in the design of this LMS.

- Gmail – a mail system with unique user names and passwords created specifically for communication between students and the instructor of the course.
- Google Sites – a website creator that can serve as an intranet accessible only to students enrolled in the course and the instructor.
- Google Calendar – a calendar that integrates with other applications within the Google Apps suite.
- Google Drive – a cloud-based storage application that allows the student and the instructor to access files from any device.
- Google Docs – a platform for creating documents, spreadsheets, and presentations within a browser that allows for group collaboration.
Chapter 2

Rationale and Implementation

This chapter outlines the initial iteration of the learning management system designed for the blended learning critical theory course. It includes a rationale for design based on a needs assessment conducted during the first semester of the face-to-face version of the course.

2.1 Needs Analysis based on Classroom Observation

In preparation for the conversion to a blended learning environment, a needs analysis of the face-to-face critical theory course was conducted. As part of the needs analysis, the class was observed for two weeks. During the process, informal discussions took place with the instructor about her vision for the implementation of a blended learning course. The technology coordinator of the school was also interviewed to determine specific technology issues that could be encountered in implementing an online component to the course. At the conclusion of the observation, it was determined that in order to implement an effective blended learning environment, a functional Learning Management System needed to be designed that met the unique needs of this course. As part of this design research project, these needs will be continually assessed and modified throughout the study.

• an LMS that allows the course to evolve with student learning.
• an LMS that can be modified quickly and efficiently.
• a secure and stable mail system for the course that is included as part of the LMS.
• a calendar as part of the LMS for quick access to course modifications.
• a component of the LMS that allows students to peer edit documents electronically at school and at home on computers and mobile devices.
• a component of the LMS that allows the instructor to comment on and grade student work.
• a discussion forum that allows students and the instructor to post comments and answers to questions.
2.2 Learning Management System

The Learning Management System used during the observation was Blackboard 9.1. Its main function in the course was to post assignments. Both the instructor and students expressed frustration that it did not lend itself well to a course that evolved on a week-to-week basis. According to the instructor, the LMS was time consuming to update and hard copies of assignments and course schedules were often more efficient.

2.2.1 Blended Learning Platform

In creating a blended learning environment it is essential that the instructor and students have a learning management system in place that meets the needs of the course. The online portion of the course will be implemented through the LMS platform and in order to create a cohesive blended learning course, the LMS should be used for both the face-to-face and online portions of the class.

2.2.2 Mail System

The school has their own email system that is used by students, instructors and administration. Students are currently using the school email as a cloud system for their documents in this course. For the most part, this seems to be an effective way for students to access their work. However, when the email system is down, the course schedule can be disrupted if assignments can not be accessed. As the course moves to a blended learning environment with an online component, the ability to communicate through email will be essential.

2.2.3 Calender

A visual calendar is an efficient way for students and the instructor to quickly see assignments and activities scheduled for the course. It was noted during the observation that the Blackboard LMS currently set up for the course did not have a calendar and the instructor was creating hard copies of weekly calendars for the students. In a blended learning environment, the students and the instructor will be more dependent on the LMS to keep up-to-date on the course schedule and assignments. An electronic calendar within the LMS will be a more efficient way for the instructor to manage the course and for students to access the course schedule.
2.2.4 Assignments

The current Blackboard LMS used by the course proved to be a cumbersome way for the instructor to update the course. It should be noted that the pace and content of this course are being constantly evaluated by the instructor to provide students with information and critical thinking strategies that are beneficial to their current discussions and writing assignments. In designing an LMS for this class it was determined that the instructor will need an assignment system that is easy to update and modify to accommodate the dynamic class. As the online component of the course is implemented, the efficiency with which assignments can be updated will become a critical component of the LMS.

2.2.5 Resources

This course requires many ancillary materials to supplement the novel that the students are reading. During the observation, it was noted that hard copies of these materials were often made and given to the students. As the course moves to a blended learning environment, it will be important for all materials to be online and accessible from any computer or mobile device.

2.2.6 Blog

It was evident during the observation that the core of this course is the dynamic and lively discussion that takes place in the face-to-face classroom. Students are eager to discuss their observations and opinions on the readings and the instructor uses these discussions to guide critical thinking and writing strategies that can be used in their analysis and writing.

As part of the online component of the course it is beneficial for the LMS to include a blog where students have an opportunity to practice this type of discussion in writing. A blog that students can use as a forum to convey their thoughts and ideas will help them make the transition to the critical writing process.

2.2.7 Peer Edits

Peer editing is an important component of the course and the students seem to value peer input in their work. Peer edits take place at each phase in the writing process. Before work is turned in to the instructor students are given an opportunity to make revisions based upon peer input.

Students are currently using Google Docs as a platform for peer edits. However, it is not incorporated into the LMS and requires the students to set up document sharing on their personal Google accounts. As part of the LMS created in Google Apps, this feature will be available to students through the class website. They will no longer have to use their personal accounts and all peer edits will be available to the students and instructor through sharing privileges incorporated into the LMS.
2.2.8 Portfolios

The instructor is using Turnitin to assess student work at this time. Students turn all assignments to be graded by the instructor into the Turnitin website. Turnitin offers several features that the instructor may find beneficial and this may continue to be the process that students follow to submit work. The portfolio feature within the LMS will offer the instructor the ability to comment on student work and provide the students with a way to archive their work within the LMS even if the instructor continues to assess work on the Turnitin website.

This feature will create a basic portfolio system within the LMS that will be beneficial for students as well as the instructor. It should also be noted that the portfolio system within the LMS can also be used for administrative purposes such as course evaluation and accreditation.
Chapter 3

Detailed Description of LMS

This chapter will provide a detailed description of the LMS for the instructor. A simplified instruction manual will be created for student use at a later date. It should be noted that this website is not static and will be revised throughout the project. Updates will be incorporated into this chapter as well as added to Chapter 4 as part of the Change Log. It is the intent that this chapter will remain an up-to-date user manual for the website element of the course.
3.1 Sign In

To sign in to the LMS, type in this web address:

xxxxxxxxxxxxxxxxxxxxx

You will want to bookmark it so that you can access it quickly in the future. The website address will change when the LMS is ready for students to use. From here you will be taken to the Sign In page.

Enter your Email:

Enter your Password:
The Home page will have course announcements listed by date with the most recent announcement appearing first. The instructor will have access to the New Post button located directly above the announcements. By clicking on New Post the instructor can add new announcements.
An announcement title can be added by clicking on the Untitled Post box and typing a title. Click within the box to type the announcement. Click SAVE in the upper right hand corner of the screen to save the announcement to the home page.
The Calendar page is where students can go to find out the course schedule and get a quick view of when assignments and projects are due. It is updated in the Calendar App of Google Apps for Education and not on the LMS itself. While this is not ideal, at this time it is the only option for this design. As part of the research project, the calendar will be maintained by the researcher based on updates from the instructor.
In the pull-down menu under Calendar, the Critical Theory Course Calendar is accessible by clicking on box. This design gives the flexibility to add future calendars that may be useful to the design of the course.
The Calendar on this screen will show any events posted to the Critical Theory Course Calendar. Users can view the calendar by the week, month or in an agenda format by selecting the appropriate tab in the top right-hand corner of the page. The month can be changed by clicking on the tabs in the top left-hand corner of the page.
The Assignment page will allow the instructor to add assignments quickly and efficiently. Its design has been catered to the dynamic elements of this specific course. Students will be able to quickly view assignments on any computer or mobile device.
The pull-down on the Assignments page allows the students and instructor to access assignments for each week of the course. Assignments will remain on the website for the entire semester. Click on the week to view, edit, or add an assignment.
The Assignment Week page will show the students a view of the week on the Calendar, as well as a list of assignments that include the date, the task, and the details of the assignment. The instructor can add new assignments by clicking on the ADD ITEM button, located on the left-hand side of the page above the Assignment list. Documents and materials required for the Assignments are located under the Resource Tab. To EDIT an existing assignment, click on the Assignment in the list. An edit window will pop up and allow you to make any changes to the assignment.
Assignments can be added in the ADD ITEM box shown above. The Date Assigned field has a pull-down menu with a calendar. Click the assign date on the calendar to select the date. The Task field is also a pull-down menu. Based upon the class observation, the following tasks have been added. New tasks can be added as appropriate.

- Read
- Peer Edit
- Blog
- Rough Draft
- Final Draft
- Other

The Due Date field also has a pull-down menu with a calendar. Click on the due date on the calendar to select the date. Click SAVE to add the assignment to the assignment page.
The Resource page will house all of the readings and course materials for the course. The instructor can refer to a resource on the assignment page and then students can go to the resource page to download documents and materials or read them online.
Resources are organized by week to allow students and the instructor to find documents and materials quickly and efficiently. Click on the week in the pull-down menu to access a resource.
Any specific comments about the resources for the week can be made on the web page by clicking on the pencil in the upper-right-hand corner. Click SAVE when you have finished. Resources for the week can be found on the lower half of the page. The instructor can add files to the Resource page by clicking the add files button on the bottom left-hand corner of the page.
The Blog page will be used to promote online discussion and critical thinking. It will also be a place where students can leave feedback about the design of the course. The Blog is organized by week.

To access a specific week of the Blog, click the Blog tab.
Critical Theory Pilot

Blog

Blogs are divided by week in the pull-down menu. Click on the week to view, add, or comment.
Each Blog week will allow the instructor to add new questions by clicking on the NEW POST button. Click EDIT POST to edit an existing post. Students will only see the questions posted and will not have editing capabilities. Click on the Question title to access the comment screen.
The comment box allows students and the instructor to post comments. All previously posted comments appear below the comment box.
The Peer Edits page allows students to access the Google Drive where their documents are stored. From there they can share a document with a peer for editing.
Peer Edits

You can link to Peer Edits in Drive to share and peer edit each other’s rough drafts here.

Click on the pull-down menu under the Peer Edits tab to access your Peer Edits folder.
The Peer Edits folder page allows student to access their Peer Edits Google Drive folder from the scroll bar on the right-hand side of the page. Students will only be able to view their own folder, and the instructor will be able to view all of the folders on this screen.

Once the student has accessed Google Drive they can upload their document to the Peer Edit folder in Drive. Organization will be important, since students will be sharing their work with other students. A file structure should be maintained with all documents uploaded to Drive. (last name assignment title (ie: roughdraft chapter 1). The student can then share the document with other students in the class. While Google Docs saves multiple iterations of a document as changes are made, it is suggested that peer editors are given commenting privileges instead of editing privileges to avoid confusion.
The Portfolio page allows students to access the Google Drive where their documents are stored. From there they can upload documents to create a portfolio of their work in the class. The portfolio system in Google Drive will allow the instructor to assess student work, but she may choose to use Turnitin or another assessment platform. If that is the case, the portfolio system can still be used as a place for students to store their work. It can also be used by the instructor and administrators for assessment and accreditation purposes.

Figure 3.22: The pull-down menu allows students to access their Portfolio folder.
Turn in your assignments due to Carmen here.

Click on the pull-down menu under the Portfolios tab to access your Portfolio folder.
The Portfolio folder page allows students to access their Portfolio Google Drive folder from the scroll bar on the right-hand side of the page. Students will only be able to view their own folder, and the instructor will be able to view all of the folders on this screen.

Once the student has accessed Google Drive they can upload their document to the Portfolio folder in Drive. Organization will be important since students will be sharing their documents with the instructor. A file structure should be maintained with all documents uploaded to Drive. (last name assignment title (ie: final chapter 1). The student can then share the document with the instructor. While Google Docs saves multiple iterations of a document as changes are made, it is suggested that the instructor is given commenting privileges instead of editing privileges to avoid confusion.
Appendix B: Newman et al. Model of Critical Thinking

<table>
<thead>
<tr>
<th>Categories</th>
<th>Code</th>
<th>Subcategories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance</td>
<td>R±</td>
<td>R+ Relevant statements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R- Irrelevant statements, diversions</td>
</tr>
<tr>
<td>Importance</td>
<td>I±</td>
<td>I+ Important points/issues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I- Unimportant, trivial points/issues</td>
</tr>
<tr>
<td>Novelty (new information, ideas, or solutions)</td>
<td>N±</td>
<td>NP+ New problem-related information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NP- Repeating what has been said</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NI+ New ideas for discussion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NI- False or trivial leads</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NS+ New solutions to problems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NS- Accepting first offered solution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NQ+ Welcoming new ideas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NQ- Squashing, putting down new ideas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NL+ Learner brings new things in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NL- Dragged in by instructor</td>
</tr>
<tr>
<td>Categories</td>
<td>Code</td>
<td>Subcategories</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Outside knowledge or experience</td>
<td>O±</td>
<td>OE+ Drawing on personal experience</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OQ- Squashing outside knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OC+ Refer to course material</td>
</tr>
<tr>
<td></td>
<td></td>
<td>O- Sticking to prejudice or assumptions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OM+ Use relevant outside material</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OK+ Using previous knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OP+ Course related problems brought in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OQ+ Welcoming outside knowledge</td>
</tr>
<tr>
<td>Ambiguities</td>
<td>A±</td>
<td>AC+ Clear, unambiguous statements</td>
</tr>
<tr>
<td>(clarified or confused)</td>
<td></td>
<td>AC- Confused statements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A+ Discuss ambiguities to clear them up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A- Continue to ignore ambiguities</td>
</tr>
<tr>
<td>Linking ideas or interpretations</td>
<td>L±</td>
<td>L+ Linking facts, ideas and notions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L+ Generating new data from information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L- Repeating with no interpretation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L- Shares stated idea without elaboration</td>
</tr>
<tr>
<td>Categories</td>
<td>Code</td>
<td>Subcategories</td>
</tr>
<tr>
<td>--------------------</td>
<td>------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Justification</td>
<td>J±</td>
<td>JP+ Providing proof or examples</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JS+ Setting out advantage/disadvantage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP-Irrelevant questions or examples</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JS-Suggestions without best solution</td>
</tr>
<tr>
<td>Critical Assessment</td>
<td>C±</td>
<td>C+ Critical evaluation of contributions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C- Uncritical acceptance or rejection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CT+ Instructor prompts critical evaluation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CT- Instructor uncritically accepts</td>
</tr>
<tr>
<td>Practical Utility</td>
<td>P±</td>
<td>P+ relate possible solutions to familiar</td>
</tr>
<tr>
<td>(grounding)</td>
<td></td>
<td>P+ discuss practicality of new idea</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P- Discuss in a vacuum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P- Suggest impractical solutions</td>
</tr>
<tr>
<td>Width of Understanding</td>
<td>W±</td>
<td>W+ Wide discussion (broad perspective)</td>
</tr>
<tr>
<td>(complete picture)</td>
<td></td>
<td>W- Narrow discussion (fragments)</td>
</tr>
</tbody>
</table>

(Newman et al., 1995, p. 6-9)
Appendix C: Description of Assignments

- **Week 2 Discussion Forum Questions: (Structured)**

**Question 1:**

In Chapter 1 (pgs. 6-8) and Chapter 3 (pgs. 23-25) you will note a very striking instance of our old friend the “mirror” motif. Compare these two passages as parts of a single motif. The first bit is given from perspective of our heroine and the second (albeit duplicitously) through the eyes of the vampire. Why do you think this pivotal event was portrayed as a dream or dream–like recollection? What aesthetic and/or thematic ends might be achieved by using this iteration of the mirror [+ dream] motif with these two particular characters? At this point you are being asked to predict a bit about where you think things are heading in this novel...so feel free to confront the risk of speculation fearlessly! If you need a bit of structure to get yourself started you might fall back upon the recent reading from Freud and speculate about how and why the reader may have been invited to view this dramatic reversal in a Freudian light.

**Question 2:**

In Chapter 4 we again encounter the mirror motif but in this instance it has been relocated from the dream sphere to waking life and the reflective traits have been obscured or perhaps even “darkened” in terms of the two very different characters that are mirrored. In chapter 4 the dramatic reversal is accomplished by means of an imperfect “mirroring” via a minor male character and we might roughly describe him as an approximate foil to the character of Carmilla. How does the first instance of mirroring (from Chapter 1 & 3) compare and contrast with this imperfect and approximate mirroring in (Chapter 4). You
don’t have to post your thoughts here just think it over as you prepare to answer and then post your response to this question: In your opinion, what aesthetic or thematic impact does this particular male/female binary accomplish in a novel that will ultimately explore the notion of transgressive sexually via the lens of lesbian attraction? Perhaps you may also want to consider the Victorian literary conceits of vison and beauty, which often accompany “mirrored” scenes since you have a good measure of experience in that vein ala Henry James.

Question 3:
Angela Bourke suggests that cultures undergoing rapid modernization tend to "polarize" aspects that make up the social landscape: "tradition against law; country against town; men against women". Where do you see these polarizing forces at work in "Carmilla"?

- **Week 2 Blog (open-ended response)**

Your choice…you could continue in the vein of one of these discussion questions above, you could seek out a topic of interest from the reading pointers handout and either use it literally or adapt it to your purposes or you could create your own original topic and rant on that.

- **Week 3 Discussion Forum (scaffolded)**

Question 1:
Post to the discussion forum. Select any question or topic from the Reading Pointers for Carmilla Handout but restrict your range to those questions that are contained under the heading of … “Important Questions to Clarify a Position”, adapt it to fit your interests (without utterly demolishing the original spirit of the question as it has been written) and
respond to whatever question or prompt you create. Or you can leave the question exactly as it was written and go from there.

Question 2:
Post to the discussion forum. Repeat the same process as above for this post or if you would like to continue by expanding the prompt/topic you created for your Monday post to fit with the additional reading then you may do that to guide this post.

Question 3:
Post to the discussion forum…follow the same pattern as above.

- **Week 3 Blog (role play)**

For this blog I will ask you to first locate your own personal perspective on the topic and then do your utmost to try on a different thinking “hat” by examining textual evidence and writing from a perspective that is as close to the opposite of your own as you can manage. [For example, if you are typically a highly skeptical reader who views older texts as anti-feminist or hostile to multiculturalism then find a way to present a more optimistic view of the author’s intent.] Or if you typically view literary themes as aspects of social phenomenon then try to write your rant from the more narrow and specific range of the individual psychological aspects that characters display. For the next rant you will be free to argue strictly from your own perspective. To select a topic, go to the Reading Pointers for Carmilla Handout and select any topic that is contained under the heading of … “Important Questions to Clarify a Position” … you may adapt/ reshape any of these questions to fit your needs but try to maintain the original spirit of the questions.

- **Week 4 Discussion Forum (open-ended)**
Question 1:
Post to the discussion forum… only this time you will have completed the novel and the choice of topic or question for this post will be entirely up to you. You may come up with your own idea and post about anything that you find interesting. If this is too unstructured then you may utilize any portion of the Reading Pointers for Carmilla handout to get yourself started. If you find that beginning an entirely new strand of discussion for this week’s forum seems too daunting or less fruitful than you would like you could pick up from any prior discussion strand from week 2 or 3 and further develop it now that you have finished the novel. The most important factor here is your freedom… you don’t have to use the handout at all if you want to take the discussion in an entirely different direction. If you are struggling with how to make this decision, we can discuss it in class. Also if you take a look at your last rant assignment for the end of week 4 you will find that you are being asked to defend an argument from your own perspective (as always very briefly in rant form) and you might want to use some or all of your discussion posts this week to build up to that end. Some of you may want to use your week 4 rant as a chance to repurpose the same rant topic you wrote on last week such that it is constructed from your own perspective. This would also work just fine…the choices here are all entirely your own.

Question 2:
Same as above…Post to forum.

Question 3:
Same as above…Post to forum.
• **Week 4: Blog (argument)**

Your choice… the only requirement is that you present some form of argument. You may use any portion of the Reading Pointers for Carmilla Handout to get ideas, or ignore it entirely in favor of a topic of your own as long as you defend a position of some sort and write from your own perspective.

Weeks four and five were designed to allow students the opportunity to write their own literary analysis and a final literary criticism for the novella. Students did all work in Google Docs including their peer edits (week 5).

• **Week 5: Google Docs (literary analysis with peer edits)**

(Note: Weeks four and five were designed to allow students the opportunity to write their own literary analysis and a final literary criticism for the novella. Students did all work in Google Docs including their peer edits [week 5]).

Assignment 1:

As a class, we have brainstormed to define three or four essential topics for a good Carmilla literary analysis. In pairs, partners will work together to begin writing on the topics in class on Tuesday. Any notes or prewriting should be done in the Peer Edits folder. Share your work with your team member so it is a collaborative effort.

Assignment 2:

Continue to work on rough draft with group in the Peer Edits folder. Share your work with your partner.

Assignment 3:

Peer edit your partners work. Share your peer edits with your partner in Google Docs.
Assignment 4:

Revise your work using your peer edits as a guide for revision to create a final draft of your literary analysis. Post your final draft to your Peer Edits folder in Google Docs.

- **Week 6: Google Docs (literary criticism)**

Assignment 1:

Write a 1-2-page rant…formal / revised…in which you either fashion and briefly defend an argument or utilize a controlling idea to briefly analyze a specific motif, symbol or character in terms of how it serves, complements or perhaps even creates tension with the larger aesthetic thrust of the novel. Just FYI arguments are generally related to questions of theme…sociology, feminist /not feminist, ambivalence, coded aggression etc. These topics are actually too broad for this assignment so you may want to steer clear of the full blown argument. It can be done but it’s not easy to do in such a short assignment. If you analyze something via a controlling idea you could keep your focus narrow enough to effectively analyze a single character or motif in one to two pages. A very strong writer could analyze Carmilla in 2 pages but even if you are not feeling very strong at this point in the year anyone can analyze the function of the father or the hunchback in 1-2 pages. Likewise anyone could analyze a few instances of the mirror motif in this timeframe.
Appendix D: Carmilla Handout

Reading Pointers for Carmilla

Use this list to get started on your discussion board posts and blog rants. Every question I provide will be directly related to the ideas in this handout so look closely each time you prepare to write.

Transgressive Female Sexuality & Male /Female Binaries

This thematic strand captures the essence of the novel and thus forces the reader to question the manner in which Fanu has approached a serious Victorian taboo. From the very beginning you will want to search out possible ways in which the author seems to collaborate with Victorian standards and beliefs and the extent to which he may have managed to circumvent some of these. Here are three very broad views of this thematic issue and the sort of questions one might ask in order to analyze the text in terms of these possible views.

Three Views of Carmilla (Gender/ Sexuality)

1. The novel expresses a hysterical fear of sexually and domestically powerful women.

2. The novel operates as an often veiled but ultimately sympathetic study of women stereotyped as dangerous by Victorian culture.

3. The novel utilizes stylistic/thematic ambivalence (particularly in the case of Laura’s responses to Carmilla) to express an intricate back and forth interplay
between both of these positions…an interplay that is ultimately irresolvable and seems intentionally to have been made so by the author. What Fanu finally expresses is uncertainty with elements of both sympathy and horror….

**Important Questions to Clarify a Position**

- How are women and men portrayed?
- Do the male characters seem effective and timely in their responses?
- Overall which characters [M/F] seem to have the most power…effectiveness…intuition…?
- Is Laura a passive and helpless victim?
- Are the men in the story wise and in control while she remains foolish and subject always to the will of others?
- Or is this an inaccurate portrait or a partial view?
- Do they seem intelligent and observant enough to face the forces that they seek to battle?
- Do the male characters seem significant in terms of the story’s dramatic thrust and general flow of action or do they merely react to the action and energy that flows from the female sphere?
- We can’t really unpuzzle Fanu’s position on transgressive female sexuality (or women in general) unless we get a clear sense of how he communicated the various aspects of the relationship between his heroine and the vampire.
• Is there any room to speculate that Laura is at least somewhat infatuated with Carmilla?

**Suppose we complicate this gender and transgressive sexuality exploration not only with the concept of artful ambivalence but also that of the “Consumption Metaphor” (Tuberculosis analogy) then the following questions might be explored:**

Reflecting on the nature of her “illness”, Laura writes, “Had I been capable of comprehending my condition, I would have invoked aid and advice on my knees. The narcotic of an unsuspected influence was acting upon me, and my perceptions were benumbed”. Note the use of the word “narcotic” here and “benumbed,” both of which conjure up intoxication and the word “illness” which may reflect a tint of the consumption (tuberculosis) metaphor. Of course, these words equally apply to the infatuation of being in love (or lust).

Moreover, The word “languor” is used several times in the story, each time to characterize Carmilla’s appearance and demeanor. What is the significance of this word, and why does Laura see this as a negative quality? You might consult the OED & the brief abstract I provided on consumption to shed light on this facet of the story. You could also read more of the summarized text …Tuberculosis and the Victorian Literary Imagination. I only provided a brief abstract but I have the entire book.

• Can we make a case for her being at least somewhat infatuated (in love?) with Carmilla? Is it simply the result of witchcraft…or did she, at the time, truly have
feelings for Carmilla that were genuinely her own and not simply the result of an evil spell?

OR

- Is the overt association of their relationship with intoxication and consumptive illness too damning to leave room for such a generously forward thinking possibility?

NOTE: the word “die” which Carmilla uses repeatedly to describe their union was a term which sometimes indicated sexual union and/or orgasm.

Recall also that we are given a sense of Carmilla almost exclusively through Laura’s eyes so our best barometer for how to assess Fanu’s views on different female types will center around how these two are presented via Laura’s frame narrative. With this in mind do you think Fanu is utterly unsympathetic and consistently disgusted with Carmilla at all times? What about Laura how well does she fit your sense of the completely pure Victorian virgin type?

**Additional thematic material that could be used to shape or start an analytical discussion of Carmilla:**

- In "The Vampire in the House: Hysteria, Female Sexuality, and Female Knowledge in Le Fanu's 'Carmilla,'" Tamar Heller suggests Le Fanu’s Carmilla is
an early version of what has become a very familiar script of the lesbian “vamp”
devouring young girls. In this script, she writes, “Both the body of the lesbian and
the mind of the victim she brainwashes are the site of a battle over who gets to
define, and hence to control, femininity and its desires: women or the fathers,
priests, and doctors who are the story’s male ‘knowers’” What do you think she
means by this statement? How do you see this sort of "script" functioning within
Carmilla?

• Writing in The Uncanny, Freud reminds us that “whatever has an uncanny effect
in real life has the same in literature. But the writer can intensify and multiply this
effect far beyond what is feasible in normal experience…fiction affords
possibilities for a sense of the uncanny that would not be available in real life”. In
what way does Carmilla convey this deepened sense of the uncanny?

• Angela Bourke suggests that fairy stories are often "coded aggression against
women”…she goes on to explain that this aggression emerges with particular
emphasis upon sexuality. Do you agree with this statement in the case of
Carmilla? If so explain briefly. If not then please explain as well.

• Angela Bourke suggests that cultures undergoing rapid modernization tend to
"polarize" aspects that make up the social landscape: "tradition against law;
country against town; men against women”. Where do you see these polarizing forces at work in "Carmilla"?

- In Helen Stoddart’s essay, “‘The Precautions of Nervous People Are Infectious’: Sheridan Le Fanu’s Symptomatic Gothic,” she writes that “Laura is a passive and helpless victim—the incredible essence of Victorian driven-snow purity who emerges as one overwhelmingly baffled…the fight for Laura’s sexual and imperial rights will have to be fought for her and not by her” (Stoddart, 32). Why does Le Fanu make his heroine so weak and ineffectual?

- Do you agree with Stoddart’s account above or is it too extreme? To ponder this possibility you might explore the overall efficacy of the male characters in the tale. Are they effective and timely in their responses? Do they have a clear sense of what is happening? Take each one into account separately even as you attempt to generalize or glean a pattern.

- Should Carmilla be seen as a story exclusively about women terrorizing (or seducing) other women? Could one justifiably contend that men have virtually no role in this story, except as protectors trying desperately (and often, incompetently) to secure their women from harm? Why do you feel a woman is the threatening force in the story, and why doesn’t she attack and kill men as
well? Does this set up an utterly clear sexist dynamic or might we detect signs of uncertainty and ambivalence in the author’s expressions here?

- Angela Bourke discusses how the fairy story "is rich in resources for the oblique discussion of sexuality." Given the harsh restrictions placed on female sexuality within late-Victorian culture, how does the vampire story allow for certain otherwise "unspeakable" aspects of female sexuality to emerge within narrative? Provide a few examples from "Carmilla" to help support your answer.

**Tension between Victorian Occultism and Scientific Rationalism/Empiricism**

- Many critics have suggested that the Victorian preoccupation with occultism mirrors a loss of social and psychological integration and desired escapism from the impending tide of scientific materialism and rationalist anti-mystification of the human experience. Is there any sense in which the development and interplay of characters in Carmilla might signify the soundness of this suggestion? How does each character (major or minor) reflect these concerns? Which side of this duality does each specific character seem to represent? Overall which side of this Victorian anxiety does the novel seem to affirm?

- If you opt to explore this concept then how should we etch in the whole transgressive sexuality piece? Is it an unrelated “something else” that also
happens to operate in the text, a force that is in direct conflict with the theme of transgressive sexuality … or can these two strands be reconciled as somehow working in tandem? Explain how and why …
Appendix E: Sample of Coding

**Week2_Discussion_Forum_**

**Question 1**

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<thead>
<tr>
<th>Code</th>
<th>Number</th>
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</tr>
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<td>(I) Importance</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>(N) Novelty</td>
<td>0</td>
<td>0.00%</td>
</tr>
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<td>(O) Outside Knowledge</td>
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<td>AC-</td>
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<td>(C) Critical Assessment</td>
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<td>(P) Practical Utility</td>
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<td>(W) Width</td>
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</tr>
</tbody>
</table>

**Document name** | **Code** | **Segment**
--- | --- | ---
Discussion Forum_Week 2_Question 1 | O (bringing outside knowledge/experience to bear on problem))OC+ (refer to course material) | Freud talks a lot about what makes something “uncanny,” and one of the things that he argues can have that effect is when certain things keep showing up in a way that is oddly coincidental.

Discussion Forum_Week 2_Question 1 | J (justification)JP+ (providing proof or examples) | Carmilla does that to Laura, first by showing up in her “dream” when Laura is younger, and then by reappearing at her
estate many years later.

<table>
<thead>
<tr>
<th>Discussion Forum_Week 2_Question 1</th>
<th>J (justification)\JS+ (justifying solutions or judgements)</th>
<th>As a removed observer, the reader can view this as straight up creepy, but Laura doesn’t have this benefit.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>J (justification)\JP+ (providing proof or examples)</td>
<td>To her, Carmilla first appeared in a pseudo-reality that was not entirely grounded in the realm of the conscious or the unconscious, and that has both confused and haunted her.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>J (justification)\JP+ (providing proof or examples)</td>
<td>When Carmilla shows up once again, all the memories and feelings of that original encounter reappear, and Laura is left feeling as if she’s seen a ghost.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>J (justification)\JP+ (providing proof or examples)</td>
<td>Carmilla is familiar to Laura, but her presence in the “real world” is very wrong.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>O (bringing outside knowledge/experience to bear on problem)\OC+ (refer to course material)</td>
<td>As Freud suggests it should, this creates a feeling of uncanniness in Laura,</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>J (justification)\JP+ (providing proof or examples)</td>
<td>which she describes, saying she, “felt rather unaccountably towards the beautiful stranger. I did feel, as she said, ‘drawn towards her,’ but there was also something of repulsion” (25).</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>L (linking ideas, interpretations)\L+ (linking facts, ideas and notions)</td>
<td>The memory of Carmilla paired with her reappearance is certainly uncanny for Laura in its own right, but the uncanniness is also aided by the fact that Carmilla describes a parallel dream she had of Laura when she was younger.</td>
</tr>
</tbody>
</table>
L (linking ideas, interpretations)\(\text{L+ (generating new data from information collected)}\)

The reader can plainly see that she is making that up, since we are already privy to the knowledge, or at least the suspicion, that Carmilla is a vampire, but to Laura this is something that makes sense but is simply unexplainable.

L (linking ideas, interpretations)\(\text{L+ (linking facts, ideas and notions)}\)

Laura could be a more objective observer like the reader if not for the fact that she first saw Carmilla in a dream-state, which makes her more uncertain and willing to accept the alternate reality that Carmilla supplies.

O (bringing outside knowledge/experience to bear on problem)\(\text{OC+ (refer to course material)}\)

By the end of chapter three readers are already predicting that things are going to go terribly wrong, and its the separation of the reader and the narrator that allows us to do that.

O (bringing outside knowledge/experience to bear on problem)\(\text{OC+ (refer to course material)}\)

Portraying this as a dream-like recollection might have something to
**Discussion Forum_Week 2_Question 1**

**O** (bringing outside knowledge/experience to bear on problem)\OC+ (refer to course material)

Freud talks about fiction allowing for things which would be uncanny in reality; the dream-like state is probably related to that.

**L** (linking ideas, interpretations)\L+ (linking facts, ideas and notions)

Laura can't quite realize the uncanniness that would surely come about if she could be sure that she had really seen Carmilla's face in her youth and that her recollection of her experience (complete with pain and terror) was correct.

**J** (justification)\JP+ (providing proof or examples)

instead Carmilla is able to turn it into an odd, dreamlike occurrence to cement their bond, saying that she has "already a right to [Laura's] intimacy" by virtue of the mirroring of their childhood experiences which she's just shared.

**A** (ambiguities: clarified or confused)\A+ (discuss ambiguities to clear them up)

This creates a set-up for the ambivalence present throughout the novel in original contradictory interpretations of reality, equally valid because the "reality" is represented as a dream, and people can definitely have two different dreams - but if this is, in fact, reality

**L** (linking ideas, interpretations)\L+ (linking facts, ideas and notions)

(which I'm pretty sure it is), only one of these can be the real one. I'm gonna take a wild guess and say it's Laura's, because Carmilla wouldn't have been six years old twelve...
years ago, so she's already lying about at least the timing of the "dream."

<table>
<thead>
<tr>
<th>Discussion Forum_Week 2_Question 1</th>
<th>O (bringing outside knowledge/experience to bear on problem)\OC+ (refer to course material)</th>
<th>Le Fanu's use of the mirror motif here allows for an unsettling view of the imperfect mirroring present between Laura and Carmilla.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>J (justification)\JP+ (providing proof or examples)</td>
<td>The way in which Laura remembers and relates her experience emphasizes the horror which she associates with it (and therefore, though repressed, with Carmilla); Carmilla's questionably believable version of this shared experience emphasizes a feeling of safety and of being drawn to the other.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>P (practical utility/grounding)</td>
<td>It's very likely that there will continue to be mirroring of Laura and Carmilla throughout the story, and this first instance of mirroring probably sets up the future of this motif relating to these two characters.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>O (bringing outside knowledge/experience to bear on problem)\OM+ (use relevant outside material)</td>
<td>Freud believes that the quality of the uncanny can be created by many things: amongst them are “involuntary repetition” and “the old belief that the deceased becomes the enemy of his survivor and wants to carry him off to share his new life with him” (Freud 14).</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>O (bringing outside knowledge/experience to bear on problem)\OC+ (refer to course material)</td>
<td>The mirror motif and the choice of characters used to create it create these conditions, and as a result this particular instance of the mirror carries with it a strange and unsettling</td>
</tr>
</tbody>
</table>
feeling.

<table>
<thead>
<tr>
<th>Discussion Forum_Week 2_Question 1</th>
<th>J (justification)(\text{JP+}) (providing proof or examples)</th>
<th>Laura admits it in saying that “I did feel, as she said, &quot;drawn towards her,&quot; but there was also something of repulsion” (25).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discussion Forum_Week 2_Question 1</strong></td>
<td>O (bringing outside knowledge/experience to bear on problem)(\text{OM+}) (use relevant outside material)</td>
<td>This is at once both loosely the definition of Freud’s uncanny (a desire or attraction that is repressed) and the definition of “ambivalence.”</td>
</tr>
<tr>
<td><strong>Discussion Forum_Week 2_Question 1</strong></td>
<td>O (bringing outside knowledge/experience to bear on problem)(\text{OC+}) (refer to course material)</td>
<td>Furthermore, the uncanny feeling is created for the first time when Laura takes her first good look at Carmilla and recognizes her as the girl from her early experience.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>J (justification)(\text{JP+}) (providing proof or examples)</td>
<td>It “struck me dumb in a moment, and made me recoil a step or two from before her,” Laura says (23).</td>
</tr>
<tr>
<td><strong>Discussion Forum_Week 2_Question 1</strong></td>
<td>O (bringing outside knowledge/experience to bear on problem)(\text{OM+}) (use relevant outside material)</td>
<td>This is Freud’s idea of “involuntary repetition” manifest.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>L (linking ideas, interpretations)(\text{L+}) (linking facts, ideas and notions)</td>
<td>Finally, we as readers are beginning to have an inkling of exactly what Carmilla might be, and so our fears of the arcane and mysterious, and especially of the dead, come into play.</td>
</tr>
<tr>
<td><strong>Discussion Forum_Week 2_Question 1</strong></td>
<td>O (bringing outside knowledge/experience to bear on problem)(\text{OC+}) (refer to course material)</td>
<td>So Le Fanu (funny name) creates a feeling of uncanniness. To what effect?</td>
</tr>
<tr>
<td><strong>Discussion Forum_Week 2_Question 1</strong></td>
<td>L (linking ideas, interpretations)(\text{L+}) (generating new data from information)</td>
<td>I would argue that uncanniness as Freud defines it and ambivalence are interconnected -- and</td>
</tr>
</tbody>
</table>
in fact, that uncanniness is a special case of ambivalence.

Discussion Forum_Week 2_Question 1

<table>
<thead>
<tr>
<th>O (bringing outside knowledge/experience to bear on problem)</th>
<th>OM+ (use relevant outside material)</th>
<th>To see this, consider that Freud says that “the uncanny proceeds from something familiar which has been repressed” (Freud 16).</th>
</tr>
</thead>
</table>

How does one feel about such a thing? Naturally, one is drawn towards the familiar, base instincts of ontological primitivity, but at the same time one is repulsed by its vulgar, violent or scientifically unsound nature.

Discussion Forum_Week 2_Question 1

<table>
<thead>
<tr>
<th>A (ambiguities: clarified or confused)</th>
<th>A+ (discuss ambiguities to clear them up)</th>
<th>These conflicting feelings are the definition of ambivalence.</th>
</tr>
</thead>
</table>

Furthermore, this seems to be how Laura feels about Carmilla: she is drawn towards her, but at the same time afraid.

Discussion Forum_Week 2_Question 1

<table>
<thead>
<tr>
<th>J (justification)</th>
<th>JS+ (justifying solutions or judgements)</th>
<th>Finally, this is also how the Victorian sensibility sees sexuality (especially the transgressive sort): it is something to be repressed, but at the same time it has its own fascination.</th>
</tr>
</thead>
</table>

After all, why else would Le Fanu have written a book on the subject?

Discussion Forum_Week 2_Question 1

<table>
<thead>
<tr>
<th>A (ambiguities: clarified or confused)</th>
<th>AC- (confused statements)</th>
<th>Okay, so in class we discussed/were told about the idea of ambivalence in the novel, which connotes the simultaneous holding of two conflicting ideas or feelings, to summarize badly.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>L (linking ideas, interpretations)\L+ (linking facts, ideas and notions)</td>
<td>I think that this dream/mirror motif is the first major instance that creates this feeling of ambivalence that Laura feels towards Carmilla.</td>
</tr>
<tr>
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</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>O (bringing outside knowledge/experience to bear on problem)\OM+ (use relevant outside material)</td>
<td>Laura describes the event as one that is rather &quot;uncanny&quot;, and involves a certain questionability of whether or not she was dreaming or awake that Freud mentioned in the reading &quot;Freud and the Uncanny&quot; to be one way to conjure up an uncanny feeling.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>J (justification)\JP+ (providing proof or examples)</td>
<td>Laura is extremely frightened by the dream (it affects her for many years afterwards), and this spawns the feeling of horror that stuns her when she first sees Carmilla's face.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>J (justification)\JP+ (providing proof or examples)</td>
<td>Carmilla, on the other hand, describes the event as one with rather pleasant memories. She recalls a beautiful girl, Laura as a young child, and her memory is quite happy.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>J (justification)\JP+ (providing proof or examples)</td>
<td>While she claims that she had also experienced &quot;precisely the same faint antipathy that had mingled with [Laura's] admiration&quot;, this seems to be less than true, as her first words and actions upon meeting Laura are not those of revulsion and horror, but rather those of recognition and pleasure.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>L (linking ideas, interpretations)\L+ (linking facts, ideas and notions)</td>
<td>This &quot;admission&quot; of horror, then may just be the vampire attempting to lull her victim into a feeling of safety, or it may</td>
</tr>
</tbody>
</table>
As seen above, the reactions of these two women are quite different, and both are to the same event.

This mirror motif is what creates the situation that invokes the ambivalence in the first place (a dream feeling two conflicting feelings [wrong word] for two different people).

In the light of this ambivalence, along with the setting of the entire event in a dream sequence to begin with, the relating of the dream stories creates a distinctly uncanny atmosphere for the novel to continue through.

With regards to the first question (why the first three chapters were recalled in a dream-like way), the first and most obvious thing that stood out to me was the role memory and time played in setting up the story.

After reading the chapters, I realized that this story kind of has a framing structure similar to what we've already seen in other books (which, for sanity's sake, will not be explicitly named).

Laura is not only telling the overall story in a retrospective manner, she's also recounting the dream she had with retrospect within the context of the overall story. (I'm not sure if I
<table>
<thead>
<tr>
<th>Discussion Forum_Week 2_Question 1</th>
<th>L (linking ideas, interpretations)\L+ (linking facts, ideas and notions)</th>
<th>Describing how someone felt about something versus describing how events transpired in a more detached way seems more doable from a practical perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>O (bringing outside knowledge/experience to bear on problem)\OM+ (use relevant outside material)</td>
<td>it also seems to underscore what Freud talked about in The Uncanny, as well as the sense of ambivalence we discussed in class.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>J (justification)\JP+ (providing proof or examples)</td>
<td>At this point in the story, Laura isn't totally sure how she feels about Carmilla's presence--on one hand, she's unsettled and kind of repulsed, but on the other, once Carmilla woos her a little, she's excited and receptive to the idea of being friends with a person whose image has terrified her for years.</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>L (linking ideas, interpretations)\L+ (linking facts, ideas and notions)</td>
<td>This seems to be a combination of both ambivalence (opposing ideas or feelings) and the uncanny (something oddly familiar that has been repressed due to its unsettling nature).</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>L (linking ideas, interpretations)\L+ (linking facts, ideas and notions)</td>
<td>The dream motif, as well as the mirror motif, seem to come together to create this look into Laura's consciousness and to set readers up for what's to come in the story--after examining Laura's reactions to Carmilla's presence and actions, we can kind of guess that Carmilla is somewhat more sinister than she lets on and that phrased that well, but you know what I mean.)</td>
</tr>
</tbody>
</table>
Laura is barred from properly seeing that as a result of her own internal obstacles (the dream she had, her desire for a friend, Carmilla's enticing nature, etc).

**Discussion Forum_Week 2_Question 1**

A  
(ambiguities: clarified or confused)\A+  
(discuss ambiguities to clear them up)

It seems to me that the dream sequence and the mirror motif are used in Carmilla in order to emphasize the ambiguity, or perhaps more specifically the ambivalence, of the nature of the relationship between Laura and Carmilla.

**Discussion Forum_Week 2_Question 1**

A  
(ambiguities: clarified or confused)\A+  
(discuss ambiguities to clear them up)

This ambivalence is mentioned repeatedly even as early as in the first three chapters, such as when Laura says she is “drawn towards her,” but there was also something of repulsion” and even describes her own feelings as “ambiguous” (25).

**Discussion Forum_Week 2_Question 1**

A  
(ambiguities: clarified or confused)\A+  
(discuss ambiguities to clear them up)

The mirroring of the dream sequences highlights this ambivalence, which presents Laura torn between being Carmilla’s victim and her friend/lover, by presenting two different interpretations of a similar set of events.

**Discussion Forum_Week 2_Question 1**

J (justification)\JP+  
(providing proof or examples)

In Laura’s dream, she is the victim: she sees and is attacked by an “apparition” and left “in a state of terror” (8).

**Discussion Forum_Week 2_Question 1**

J (justification)\JP+  
(providing proof or examples)

Carmilla tells a distorted version of the same story that instead presents Carmilla as a friend who is there to comfort her as she is crying.
<table>
<thead>
<tr>
<th>Discussion Forum_Week 2_Question 1</th>
<th>J (justification)\JP+ (providing proof or examples)</th>
<th>The mirroring of these dream sequences emphasizes the ambivalence of the relationship between the two girls and the central contradictions of the novel.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>A (ambiguities:clarified or confused)\A+ (discuss ambiguities to clear them up)</td>
<td>Is Carmilla a caring friend and lover, or a malignant monster that is preying on an innocent girl?</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>A (ambiguities:clarified or confused)\A+ (discuss ambiguities to clear them up)</td>
<td>Is Laura willingly Carmilla’s friend and lover, or is she simply her victim?</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>A (ambiguities:clarified or confused)\A+ (discuss ambiguities to clear them up)</td>
<td>Is the novel a horror story or a love story?</td>
</tr>
<tr>
<td>Discussion Forum_Week 2_Question 1</td>
<td>A (ambiguities:clarified or confused)\A+ (discuss ambiguities to clear them up)</td>
<td>The novel answers each of these questions in an ambivalent way by switching back and forth between the traditional vampire narrative and the love narrative.</td>
</tr>
</tbody>
</table>
Appendix F: IRB

| Proposal Title | Creating a blended learning environment in a gifted critical theory course |

1. Investigator(s) Information

<table>
<thead>
<tr>
<th>Primary Investigator Name</th>
<th>First</th>
<th>Susan</th>
<th>Elizabeth</th>
<th>Last</th>
<th>Copp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>Educational Studies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>4647 Laskey Court, Gahanna, Ohio 43230</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(If off-campus, include city, state and zip code)</td>
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</tr>
<tr>
<td>Email</td>
<td><a href="mailto:Scc341809@ohio.edu">Scc341809@ohio.edu</a></td>
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<td></td>
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</tr>
<tr>
<td>Phone</td>
<td>614-441-1130</td>
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<td></td>
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</tr>
<tr>
<td>Training Module Completed?</td>
<td>Yes</td>
<td>x</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Co-investigators

<table>
<thead>
<tr>
<th>Name</th>
<th>David Richard Moore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>Educational Studies</td>
</tr>
<tr>
<td>Address</td>
<td>321 B McCracken Hall</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:Moored3@ohio.edu">Moored3@ohio.edu</a></td>
</tr>
<tr>
<td>Phone</td>
<td>740-597-1322</td>
</tr>
<tr>
<td>Training Module Completed?</td>
<td>Yes</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Teresa Franklin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>Educational Studies</td>
</tr>
<tr>
<td>Address</td>
<td>313 D McCracken Hall</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:franklilt@ohio.edu">franklilt@ohio.edu</a></td>
</tr>
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<td>Phone</td>
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<tr>
<td>Training Module Completed?</td>
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</tbody>
</table>

<table>
<thead>
<tr>
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<tr>
<td>Email</td>
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<td>Phone</td>
<td></td>
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<tr>
<td>Training Module Completed?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Advisor Information (if applicable)

<table>
<thead>
<tr>
<th>Name</th>
<th>David Richard Moore</th>
</tr>
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</tr>
<tr>
<td>Phone</td>
<td>740-597-1322</td>
</tr>
<tr>
<td>Training Module Completed?</td>
<td>Yes</td>
</tr>
</tbody>
</table>
5. Recruitment/Selection of Subjects

a. Maximum Number of Participants to be Enrolled – If screening occurs, include number that will need to be screened in order to get the N necessary for statistical significance.

<table>
<thead>
<tr>
<th>Characteristics of subjects (check as many boxes as appropriate).</th>
</tr>
</thead>
<tbody>
<tr>
<td>x Minors</td>
</tr>
<tr>
<td>x Adults</td>
</tr>
<tr>
<td>Prisoners</td>
</tr>
<tr>
<td>Pregnant</td>
</tr>
</tbody>
</table>

b. Briefly describe the criteria for selection of subjects (inclusion/exclusion). Include such Information as age range, health status, etc. Attach additional pages if necessary.

Ages 15-19, gifted high school students who are participating in a critical theory course and their instructor.

d. Please describe how you will identify and recruit prospective participants.

All students participating in the course and their instructor.

e. Records

<table>
<thead>
<tr>
<th>Are you accessing private, i.e. medical, educational, or employment records?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

If YES, Describe process for obtaining approval for the use of the records or for securing consent from the subjects. Attach a letter of support from the holder or custodian of the records i.e. primary physician, therapist, public school official.

f. Please describe your relationship to the potential participants, i.e. instructor of class, co-worker, etc. If no relationship, state no relationship.

No relationship

Attach copies of all recruitment tools (advertisements, posters, etc.), label as APPENDIX B

g. Performance Sites/Location of Research

<table>
<thead>
<tr>
<th>Ohio University Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Location</td>
</tr>
<tr>
<td>x Other – Describe below and provide letters of cooperation and/or support</td>
</tr>
</tbody>
</table>

Location for research is Davidson Academy, Reno, Nevada

Office of Research Compliance 3 Rev. 08/2014
6. **Project Description**

   a. Please provide a brief summary of this project, using non-technical terms that would be understood by a non-scientific reader. Please limit this description to no more than one page, and provide details in the methodology section.

   This project will use design-based research, which is a research methodology where a design is conceptualized and then implemented iteratively in the setting it was designed for. In doing so, it allows researchers to generate new instructional design frameworks and models in their natural setting. Data analysis is typically in the form of retrospection and cross-iteration comparisons of the design. This research will focus creating a blended learning environment for a critical theory course at Davidson Academy of Nevada, a school for profoundly gifted middle school and high school students. Currently this course meets face-to-face, four times a week, for 1 hour. The intent of this project is to design a blended learning environment that will facilitate a classroom where students meet face-to-face two times a week for 1 hour a week and the two remaining days of material will be presented online in an asynchronous format. Creating

   b. Please describe the specific scientific objectives (aims) of this research and any previous relevant research.

   The scientific objectives of this research are to design a blended learning course that addresses educational concerns for profoundly gifted learners by creating an environment where critical thinking and socially constructed learning can smoothly make the transition back and forth, between a face-to-face classroom and a synchronous online classroom. Using an iterative design process, the researcher will examine how individual elements of the classroom environment such as discussion and student interaction can be addressed within the course design to create a successful blended learning environment.
c. Methodology: please describe the procedures (sequentially) that will be performed/followed with human participants.

This will be a design-based research project where the focus of the research will be on the design of a blended learning environment in an existing face-to-face critical theory course designed for gifted high school juniors and seniors. The procedures involved are as follows:

**Classroom observation** of existing face-to-face critical theory course.

**Pilot study** implementing an online component to an existing critical theory course designed for gifted high school students. The online component will include discussion forums, chat rooms, a resource area for classroom materials, and a private communication place for students to contact the instructor privately. Data from the pilot study will be collected from online discussion boards, chat rooms, in-class discussions, written assignments, other activities that take place in the classroom and online, and instructor feedback. Based upon the data collected, changes will be implemented to the online component of the course that address concerns such as collaboration, the quality of the discussion, and the encouragement of critical thinking.

**Actual Study:** A redesigned blended learning course based upon data from the pilot study will be implemented for 4 weeks. Students will be asked to keep a daily blog of the experience that will be part of the data collection process. Additional data will be collected from online discussion boards, in-class discussions, written assignments, other activities that take place in the classroom and online, and instructor feedback.
d. Describe any potential risks or discomforts of participation and the steps that will be taken to minimize them.

The research does not expect any potential risks or discomfort from participation in this project.

e. Describe the anticipated benefits to the individual participants. If none, state that. (Note that compensation is not a benefit, but should be listed in the compensation section on the next page.)

Students will have a chance to learn how to effectively navigate and participate in a blended learning course. For many students this may be their first experience in an online discussion course. As colleges become increasingly more invested in online learning, this will be a valuable learning experience for students making the transition from high school to college.

f. Describe the anticipated benefits to society and/or the scientific community in lay language. There must be some benefit to justify the use of human subjects.

Online courses are becoming increasingly more common in education, and learning management systems like Blackboard make it a feasible alternative for many instructors. While learning management systems offer the tools to take learning online, instructors are often unfamiliar with how to design instruction that successfully allows students to make the transition from the face-to-face classroom to a synchronous or asynchronous online learning environment.

Most of the research on online learning environments has been conducted in university and K-12 virtual classrooms. This research will provide data through an iterative design process that will ultimately suggest strategies that instructors can use to create blended learning environments in high school courses for gifted students.

Office of Research Compliance

Rev. 08/2014
7. Confidentiality

a. Check all that apply

<table>
<thead>
<tr>
<th>Data is collected anonymously</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data will be recorded without possibility of identification</td>
</tr>
<tr>
<td>Data will be recorded with a code replacing identifiers and a master list connecting the code and the identifier exists for some period of time</td>
</tr>
<tr>
<td>Data will be recorded with identifying information, e.g. name, SSN, oak id, etc.</td>
</tr>
<tr>
<td>Nature of data makes it potentially identifiable (e.g. material with DNA, photographs)</td>
</tr>
</tbody>
</table>

b. If master code list is used (3rd option); please provide detail, such as how/where code list is securely stored, when it will be destroyed, etc.

Master code list will be securely stored on a password protected computer and will be destroyed within one year of creation.

c. If data is stored with identifiers, please provide details of how data will be stored securely (i.e. locked cabinet, password protected, etc.) as well as timeframe of when data will be de-identified.

Data will be securely stored on a password protected computer and will be destroyed within one year of creation.

d. Data Sharing

Will **Identifiable** data be shared with anyone outside the immediate research team?

| Yes | No | x |

If YES, please describe

n/a

e. Recording

Will participants be Audio recorded?

| Yes | x | No |

Will Video recorded?

| Yes | x | No |

If YES, please describe how/where recordings will be stored, who will have access to them, and an estimate of the date (month/year) that they will be destroyed.

Audio recording of observation will be password protected and destroyed within one year of creation. Only the research team and the course instructor will have access to the recordings.

f. Additional Details (if needed)

n/a
8. Compensation

<table>
<thead>
<tr>
<th>a. Will participants receive a gift or token of appreciation?</th>
<th>Yes</th>
<th>No</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>if YES, list the item and its approximate value.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b. Will participants receive services, treatment or supplies that have a monetary value?</th>
<th>Yes</th>
<th>No</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>if YES, please describe and provide the approximate value.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c. Will participants receive course credit?</th>
<th>Yes</th>
<th>No</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>if YES, please describe non-research alternatives to earn the credit, the number of points awarded and what percentage of total points for the course it represents. If you are using the Psychology Pool, which has already established guidelines that provide these details to the IRB, simply write Psych Pool.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>d. Will participants receive monetary compensation (including gift cards)?</th>
<th>Yes</th>
<th>No</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>if YES, please detail the amount per session and total compensation possible. Additionally, describe what compensation amount is paid to participants who discontinue participation prior to completion.*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* If University funds are used to compensate participants, minimally, the name and address of participants will need to be provided to the Finance Office at OU. If participants will be paid $100 or more in a calendar year, participant social security numbers must be provided to Finance. The consent form must reflect this.
9. Instruments
a. List all questionnaires, instruments, standardized tests below, with a brief description, and provide copies of each, labeled as APPENDIX C.

| This research is design-based research and will be done on an instructional model that will be created as part of the research process. |

10. Data Analysis
How will the data be analyzed? What statistical procedures will be used to test hypotheses; if qualitative, how will data be coded, etc.

| Data will be analyzed using observation techniques and document analysis. Transcripts will be divided into three columns with raw data, precoding, and final coding. Precoding will take place during the transcription of observation and the data collection process and final coding will take place after all of the data for that segment of the research has been reviewed. Based upon the data analysis, determinations will be made about the Instructional model’s next iteration. As part of the transcription process, identifiers will be created to replace student identities and a master list connecting the code and the identifier will exist for one year. The master list will be password protected on a secure password protected computer. |
11. Informed Consent Process

a. Select One of the Following Options

<table>
<thead>
<tr>
<th>X</th>
<th>I am obtaining signed consent for this study (Attach copies of all consent documents as Appendix A, using the template provided at the end of this document).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I am requesting a waiver or alteration of Informed Consent (provide details below and attach information that will be provided to participants regarding the study (email, cover letter) as Appendix A).</td>
</tr>
<tr>
<td></td>
<td>Waiver of signature</td>
</tr>
<tr>
<td></td>
<td>--- Exempt study</td>
</tr>
<tr>
<td></td>
<td>--- Waiver needed to protect the privacy of participants</td>
</tr>
<tr>
<td></td>
<td>--- Waiver needed due to cultural norms (e.g. wary of forms needing signatures)</td>
</tr>
<tr>
<td></td>
<td>--- Impracticable (online or phone study)</td>
</tr>
<tr>
<td></td>
<td>--- Other</td>
</tr>
<tr>
<td></td>
<td>Deception (incomplete disclosure)</td>
</tr>
<tr>
<td></td>
<td>--- Necessary to avoid participants altering behavior (e.g. not informing of 2 way mirror, providing cover story)</td>
</tr>
<tr>
<td></td>
<td>Complete waiver of consent</td>
</tr>
</tbody>
</table>

Provide additional information regarding the waiver, if needed.

Attach copies of all consent documents or text and label as APPENDIX A. Please use the template provided at the end of this document.

b. How and where will the consent process occur? Will participants have an opportunity to ask questions and have them answered? What steps will be taken to avoid coercion or undue influence?

Parents will receive consent forms in the same format as other school communication is received (typically by email sent from the instructor). The instructor will send out the communication and will advise parents that students are under no obligation to participate in the study. Students that do not provide permission to be part of the study will participate in all aspects of the course, the only difference will be that their data will be deleted from the study without analysis and will not be used in any way.
c. Will the investigator(s) be obtaining all of the informed consents?  
   Yes ☑ No ☧

   If NO, identify by name and training who will be describing the research to subjects/representatives and inviting their participation:

   Carmen Garcia—Curriculum Coordinator and Instructor, Davidson Academy of Nevada

   d. Will all adult participants have the capacity to give informed consent?  
   Yes ☑ No ☧

   If NO, explain procedures to be followed.

   n/a

   e. Will any participants be minors?  
   Yes ☑ No ☧

   If YES, include procedures/form for parental consent and for the assent from the minor.

   f. Will participants be deceived or incompletely informed regarding any aspect of the study?  
   Yes ☑ No ☧

   If YES, provide rationale for use of deception.

   n/a

   If YES, attach copies of post-study debriefing information and label as APPENDIX D.  
   Additionally, complete the questions related to a consent form waiver or alteration on page 11.
Investigator Assurance

I certify that the information provided in this outline form is complete and correct.

I understand that as Principal Investigator, I have ultimate responsibility for the protection of the rights and welfare of human subjects, conduct of the study and the ethical performance of the project.

I agree to comply with Ohio University policies on research and investigation involving human subjects (O.U. Policy # 19.052), as well as with all applicable federal, state and local laws regarding the protection of human subjects in research, including, but not limited to the following:

- The project will be performed by qualified personnel, according to the OU approved protocol.
- No changes will be made in the protocol or consent form until approved by the OU IRB.
- Legally effective informed consent will be obtained from human subjects if applicable, and documentation of informed consent will be retained, in a secure environment, for three years after termination of the project.
- Adverse/Unexpected events will be reported to the OU IRB promptly.
- All protocols are approved for a maximum period of one year. Research must stop at the end of that approval period unless the protocol is re-approved for another term.

I further certify that the proposed research is not currently underway and will not begin until approval has been obtained. A signed approval form, on Office of Research Compliance letterhead, communicates IRB approval.

Primary Investigator Signature ___________________________ Date 9/24/14
(Please print name) Susan E. Copp

Co-Investigator Signature ___________________________ Date 9/24/14
(Please print name) David Richard Moore

Co-Investigator Signature ___________________________ Date 9/24/14
(Please print name) Teresa Franklin
Faculty Advisor/Sponsor Assurance

By my signature as sponsor on this research application, I certify that the student(s) or guest investigator is knowledgeable about the regulations and policies governing research with human subjects and has sufficient training and experience to conduct this particular study in accord with the approved protocol. In addition:

- I agree to meet with the investigator(s) on a regular basis to monitor study progress.
- Should problems arise during the course of the study, I agree to be available, personally, to supervise the investigator in solving them.
- I assure that the investigator will report adverse/unexpected events to the IRB in writing promptly.
- If I will be unavailable, as when on sabbatical or vacation, I will arrange for an alternate faculty sponsor to assume responsibility during my absence.

I further certify that the proposed research is not currently underway and will not begin until approval has been obtained. A signed approval form, on Office of Research Compliance letterhead, communicates IRB approval.

Advisor/Faculty Sponsor Signature ___________________________ Date 9/24/14

(Please print name)  David Richard Moore

*The faculty advisor/sponsor must be a member of the OU faculty. The faculty member is considered the responsible party for legal and ethical performance of the project.
Checklist:
- X □ Completed and Signed Project Outline Form (this form)
- X □ Appendix A - copies of all consent documents (in 12 pt. Font) including
  - □ Informed Consent to Participate in Research (adult subjects)
  - □ Parental Permission/Informed Consent (parents of subjects who are minors or children)
  - □ Assent to Participate in Research (used when subjects are minors or children)
- n/a □ Appendix B - copies of any recruitment tools (advertisements, posters, etc.)
- n/a □ Appendix C - copies of all instruments (surveys, standardized tests, questionnaires, interview topics, etc.).
- n/a □ Appendix D - Copies of debriefing text
- X □ Appendix E - Approval from other IRB, School District, Corporation, etc.
- n/a □ Appendix F - Any additional materials that will assist the Board in completing its review
- n/a □ Appendix G - Copies of any IRB approvals
- X □ Appendix H - Copies of Human Subjects Research Training Certificates

All fields on the form must be completed, regardless of review level. If a field is not applicable, indicate by inserting N/A. Incomplete forms will result in delayed processing.
Forward this completed form and all attachments to:

Human Subjects Research
Office of Research Compliance
RTEC 117

If you have the capability to scan the signed form and all relevant attachments, you may submit by email to compliance@ohio.edu

Questions? Call us at 740-593-0664, or visit the website at www.ohio.edu/research/compliance/ or email compliance@ohio.edu
Ohio University Parental Consent Form

Title of Research: Creating a blended learning environment in a gifted critical theory course
Researchers: Susan Copp

You are being asked permission for your child to participate in research. For you to be able to decide whether you want your child to participate in this project, you should understand what the project is about, as well as the possible risks and benefits in order to make an informed decision. This form is known as informed consent. This form describes the purpose, procedures, possible benefits, and risks. It also explains how your child’s personal information will be used and protected. Once you have read this form and your questions about the study are answered, you will be asked to sign it. This will allow your child’s participation in this study. You should receive a copy of this document to take with you.

Explanation of Study

This study is being done to design the online component of a blended learning (face-to-face and online) discussion-based critical theory course that meets the needs of gifted learners.

If you agree to allow your child to participate, your child will be asked to participate in online discussions, blogs, and other online activities deemed appropriate by the instructor of the course.

Your child should not participate in this study if . . . there are no known reasons why the student should not participate in the study.

Your child’s participation in the study will last... 2014-2015 academic year.

Risks and Discomforts

No risks or discomforts are anticipated

Benefits

This study is important to science/society because... very few studies have been done on designing blended learning courses for gifted learners and the information learned from the study will be valuable in designing future courses.

Individually, your child may benefit... because many university courses have online components to them. By participating in this study your child will have the opportunity to learn how to effectively navigate and participate in a course with an online component in an environment that they are already familiar with.

Confidentiality and Records

Your child’s study information will be kept confidential by... all identifying information will be coded and identifiers deleted before any data analysis takes place. The master
code list will be kept on a secure computer in a password protected file for one year from the beginning of the study.

Additionally, while every effort will be made to keep your child's study-related information confidential, there may be circumstances where this information must be shared with:

* Federal agencies, for example the Office of Human Research Protections, whose responsibility is to protect human subjects in research;
* Representatives of Ohio University (OU), including the Institutional Review Board, a committee that oversees the research at OU;
* Representatives from the Davidson Academy.
Contact Information
If you have any questions regarding this study, please contact Susan Copp (614) 441-1130 or David Moore (740)-597-1322

If you have any questions regarding your child’s rights as a research participant, please contact Chris Hayhow, Director of Research Compliance, Ohio University, (740) 593-0664 or hayhow@ohio.edu.

By signing below, you are agreeing that:
• you have read this consent form (or it has been read to you) and have been given the opportunity to ask questions and have them answered;
• you have been informed of potential risks to your child and they have been explained to your satisfaction;
• you understand Ohio University has no funds set aside for any injuries your child might receive as a result of participating in this study;
• you are 18 years of age or older;
• your child’s participation in this research is completely voluntary;
• your child may leave the study at any time; if your child decides to stop participating in the study, there will be no penalty to your child and he/she will not lose any benefits to which he/she is otherwise entitled.

Parent Signature __________________________ Date __________________________
Printed Name ______________________________
Child’s Name ______________________________

Version Date: [09/15/2014]
To Whom It May Concern:

In compliance with the requirements of the Ohio University Institutional Research Board, this letter is to confirm that Susan E. Copp will be working on her dissertation research at The Davidson Academy designing a blended learning environment for a Critical Theory course.

Please let us know if you require further information.

Colleen Harshin
Director
(775) 682-5800
charshin@davidsonacademy.unr.edu

Carmen Garcia
Director of Curriculum and Instruction
(775) 682-5800
cgarcia@davidsonacademy.unr.edu
COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI)
HUMAN RESEARCH CURRICULUM COMPLETION REPORT
Printed on 09/24/2014

LEARNER
Susan Cooper (ID: 2691332)
6877 Millfield Drive
Dublin
Ohio 43017

DEPARTMENT
Educational Studies
PHONE
614-461-1100
EMAIL
soc14839
INSTITUTION
Ohio University
EXPIRATION DATE
02/23/2012

GROUP 2. SOCIAL AND BEHAVIORAL INVESTIGATORS AND KEY PERSONNEL.

COURSE/STAGE
Basic Course1
PASSED ON
02/23/2012
REFERENCE ID:
743454

REQUIRED MODULES
DATE COMPLETED
Introduction
02/23/12
History and Ethical Principles - SBE
02/23/12
Defining Research with Human Subjects - SBE
02/23/12
The Federal Regulations
02/23/12
Assessing Risk - SBE
02/23/12
Informed Consent
02/23/12
Ohio University
02/23/12

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI Program participating institution or be a paid independent learner. Any information and unauthorized use of the CITI Program course site is unethical, and may be considered research misconduct by your institution.

Paul Brunnerweig, Ph.D.
Professor, University of Miami
Director, Office of Research Education
CITI Program Course Coordinator
COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI)
CONFLICT OF INTEREST MINI-COURSE CURRICULUM COMPLETION REPORT
Printed on 09/24/2014

LEARNER
Susan Copp (ID: 2691932)
6877 Muirfield Drive
Dublin
Ohio 43017

DEPARTMENT
Educational Studies

PHONE
614-441-1566

EMAIL
ss41800

INSTITUTION
Ohio University

EXPIRATION DATE
09/05/2016

CONFLICT OF INTEREST

COURSE/STAGE: Stage 1/1
PASSED ON: 09/07/2014
REFERENCE ID: 13942565

REQUIRED MODULES
Financial Conflicts of Interest: Overview, Investigator Responsibilities, and COI Rules 09/07/14
Institutional Responsibilities as They Affect Investigators 09/07/14
Conflicts of Commitment, Consilience, and Institutional Conflicts of Interest 09/07/14

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Paul Baurschweiger Ph.D.
Professor, University of Miami
Director, Office of Research Education
CITI Program Course Coordinator
A determination has been made that the following research study is exempt from IRB review because it involves:

**Category 1:** research conducted in established or commonly accepted educational settings, involving normal educational practices

**Project Title:** Creating a Blended Learning Environment in Gifted Critical Theory Course

**Primary Investigator:** Susan Elizabeth Copp

**Co-Investigator(s):** Teresa Franklin

**Advisor:** David Richard Moore

**Department:** Education

---

**Robin Stack**, CIP, Human Subjects Research Coordinator
Office of Research Compliance

**Date:** Oct. 3, 2014

The approval remains in effect provided the study is conducted exactly as described in your application for review. Any additions or modifications to the project must be approved (as an amendment) prior to implementation.
The amendment, detailed below, and submitted for the following research study has been approved by the Institutional Review Board at Ohio University.

**Project:** Creating a Blended Learning Environment in Gifted Critical Theory Course

**Amendment:** Revise study methodology to a waiver of consent.

**Primary Investigator:** Susan Elizabeth Copp

**Co-Investigator(s):** Teresa Franklin

**Advisor:**

David Richard Moore

**Department:** Education

Robin Stack, CIP, Human Subjects Research Coordinator
Office of Research Compliance

Oct. 22, 2014