The Effects Of Implementing An Online Professional Learning Community For Teachers Of Gifted And Talented Courses: An Action Research Study

Chelsey A. Mintz
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THE EFFECTS OF IMPLEMENTING AN ONLINE PROFESSIONAL LEARNING COMMUNITY FOR TEACHERS OF GIFTED AND TALENTED COURSES: AN ACTION RESEARCH STUDY

by

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Submitted in Partial Fulfillment of the Requirements
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DEDICATION

This dissertation is dedicated to five stupendous students, Puffin, Bouncy, Creaky, Bear, and Bam, who taught me so much about being a teacher and who continually amaze me and inspire me to advocate for GT students.
ACKNOWLEDGEMENTS

I am sincerely appreciative of the enthusiastic participation and collaboration of the teachers in the online PLC. Their willingness to share, collaborate, and discuss is what made this research possible. Your students are incredibly fortunate to have you in the classroom every day!

I would also like to thank the professors who continually supported and encouraged me throughout this process. Thank you, Dr. Michael Grant, for arranging our calls around the time difference between Columbia and Oxford, educating me on the Bonferroni adjustment, and continually providing constructive feedback. Thank you, Dr. Richard Lussier, for believing in me and encouraging me. To all my dissertation committee members, your guidance, support, and time were greatly appreciated.

Thank you to my principal and to the many colleagues who asked me for updates and encouraged me along the way. I am very fortunate to work in a school district with so many talented and passionate educators. So much of what you do benefits students in so many ways!

Finally, to my husband, Taylor Bradley, thank you for everything you did to support me throughout this entire process. No words can express my gratitude enough.
ABSTRACT
The purpose of this action research study was to examine the effects of implementing an online professional learning community (PLC) designed explicitly for teachers of gifted and talented (GT) English language arts (ELA) courses. The present action research (AR) is a limited mixed design study, including quantitative and qualitative elements, to discover the effects on collaboration and professional growth focused on best practices for GT instruction. The quantitative data were collected through surveys, which included Likert scales and nominal items and were analyzed through descriptive statistics. The qualitative data were collected through guided and semi-structured interview questions and transcribed before being analyzed and reported. In accordance with AR, the results of this study were analyzed and reflected upon with TPs to develop an Action Plan designed to solve the problems associated with PLCs for teachers of GT ELA courses.
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<td>AAIS</td>
<td>American Alliance of Innovative Systems</td>
</tr>
<tr>
<td>CFG</td>
<td>Critical Friend Group</td>
</tr>
<tr>
<td>DiP</td>
<td>Dissertation in Practice</td>
</tr>
<tr>
<td>ELA</td>
<td>English Language Arts</td>
</tr>
<tr>
<td>GT</td>
<td>Gifted and Talented</td>
</tr>
<tr>
<td>NCLB</td>
<td>No Child Left Behind</td>
</tr>
<tr>
<td>PD</td>
<td>Professional Development</td>
</tr>
<tr>
<td>PG</td>
<td>Professional Growth</td>
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<td>PLC</td>
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<td>SC</td>
<td>South Carolina</td>
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<td>Superintendent and Teacher Advisory Council</td>
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<td>Teacher-Participant</td>
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CHAPTER 1
RESEARCH OVERVIEW

Introduction

This introduction provides a description of an online professional learning community (PLC) for English language arts (ELA) teachers of 6th–8th grade gifted and talented (GT) students in three rural middle schools in South Carolina’s District X. GT teachers have special needs that include collaboration across a large distance, continual professional growth to best serve all GT populations, and targeted professional development of best practices for GT instruction. Since A Nation at Risk (U.S. National Commission on Excellence in Education, 1983) was published, schools have become increasingly more assessment-driven with policies, such as No Child Left Behind (2002) and Race to the Top (U.S. Department of Education, 2009); this has led to an increase in professional development geared toward increasing academic scores of underachieving students (Gareis & Grant, 2015). Therefore, a focus on intervention and remediation instructional strategies for underachieving students has increased, with little-to-no time spent on enrichment strategies for high-ability learners in PLCs. According to a report distributed by the Center for Education Policy Analysis at the Neag School of Education at the University of Connecticut (2010), “Despite the emphasis of state and federal policy in closing achievement gaps, inequities among high-ability students were closing with agonizing slowness, and in many cases even growing over the past generation” (Plucker, Hardesty, & Burroughs, 2013, p. 1). The three middle schools in the current action research (AR) study were selected due to their rural locations in District X and because
there is a smaller population of GT students within the schools. The teachers at these schools are the sole teachers within their respective buildings of the specific ELA GT courses. The research primarily took place virtually via the Classic Google Sites. Google Sites is a free, structured, wiki- and web page-creation tool offered by Google as part of Google Apps for Work productivity suite.

**Problem Statement**

The identified Problem of Practice (PoP) for the present study involves the implementation of online PLCs for teachers of GT students in grades 6th–8th ELA courses in three middle schools located in rural areas in District X in the state of South Carolina. In 2015, the District’s Superintendent and Teacher Advisory Council (STAC) reported large discrepancies in meeting expectations across the school district via a STAC survey, which was distributed across the district and had over 1000 responses (Figure 1.1). The survey was administered in January 2015 after decreased morale among teachers was reported, as evidenced by a high level of verbal concerns collected in Fall 2014 by teachers on the STAC committee. The participant-researcher (PR) was a member of the STAC committee during the 2014-2015 school year and met with teachers at multiple middle schools in District X to collect concerns to bring back to the committee. The chief concerns among teachers involved time management, PLCs, and overall meeting expectations. Specifically, the GT teachers verbally reported that the PLCs in place in their respective schools in District X were not meeting their curricular and pedagogical needs and, thus, their professional needs. In addition to the complications resulting from a rural geographic location, the teachers reported that the PLCs take up valuable time. Instead of being an asset to professional development (PD), PLCs were hindering their
ability to prepare lesson plans that are aligned with the state’s public school requirements for GT instruction. In particular, the teachers of middle-level students who have been identified as GT report that the PLCs were not conducive to their needs in the development of ELA courses specifically for GT students.

**Statement of Purpose**

The purpose of this limited mixed design study was to discover the effects on collaboration and professional growth of implementing an online PLC for teachers of grades 6th–8th GT ELA courses in rural areas of District X in South Carolina. Since the purpose of this research was to consider and refine an application and to collect data during implementation, it is considered applied research. Throughout the research, a PLC was generally defined as a regular meeting of teacher practitioners who have specific objectives focused on problem-solving, while openly embracing questions and disagreements about teaching and learning to improve their craft.

The AR study focused on implementation of an online PLC specifically for teachers of GT students. Although data were only collected at three schools, it was open to teachers at 14 different middle schools in District X. The three middle schools were selected due to their rural locations in District X and because there is a smaller population of GT students within the schools. The study was composed of quantitative measures incorporating descriptive statistics used to assess how implementation of the online platform affects collaboration and the professional growth of best practices for GT instruction. Qualitative measures were used to enhance the description of the study. The qualitative measures incorporated guided and semi-structured interview questions as well as observations by the PR. In essence, the research was the implementation of online
collaboration for teachers of GT students. Online platforms can be used to connect teachers from different schools, districts, regions, and countries into a professional network of practitioners reflecting on best practices of current research. The impact of the Internet on education is pervasive, as online platforms are being increasingly implemented as a source of professional development and collaboration.

Figure 1.1 Responses from STAC survey
While the overall goal of the study was to improve learning for GT students, the research focused on building a community of learning online for teachers to improve their development of best practices for teaching GT learners in District X.

**Rationale for the Problem of Practice**

The educational world is continually working on closing the achievement gap to bring underachieving students up to the mean, while gifted learners often remain a hidden, underserved population. Students do not all require the same education but, rather, equitable access to opportunities to acquire the education each needs. While teacher training programs and professional learning communities cater to ensure that no child is left behind or below grade level, students with high abilities are being left behind their own potential. This research promoted collaboration across the district specifically focused on best practices for serving GT students. The impact of this research was to develop a protocol and structure aimed at delivering authentic and personalized opportunities for learning and collaboration for GT instruction and training.

**Causes of Problem of Practice**

The potential underlying causes for this problem of practice could have stemmed from the Assessment and Accountability Movement, which put a strong “emphasis on accountability in education [and] is often traced to the seminal report of the Education Commission of the States published in 1983 titled *A Nation at Risk*” (Gareis & Grant, 2015, p. 9). “As a result of that increasing accountability [and] punitive sanctions…the working life of teachers is more pressured and probably less satisfactory to teachers than it’s been in the past” (Thiers, 2016, p. 12). When meetings are implemented, they often focus on the growth of underachieving students, due to policies, such as No Child Left
Behind (2002) and Race to the Top (U.S. Department of Education, 2009) and therefore neglect the equitable growth of high-achieving students. The PoP of the current AR study stems from structural issues in District X, where many teachers of GT courses either plan in isolation or have to travel many miles across the district to collaborate with teachers of the same course. Since teachers at rural schools usually travel further due to their geographic location, the study was narrowed to collecting data on these schools. Often, teachers of GT courses are the only teacher at their respective schools to teach the specific course, and therefore, do not have other teachers on-campus with whom to collaboratively plan concerning best practices specific to GT learners or content specific to the GT course. According to DuFour, schools can be improved “by creating a culture in which teams of teachers are helping one another get better” (Thiers, 2016, p. 15). Time management becomes an issue with myriad responsibilities and expectations teachers must incorporate into their already full schedules. My intended topic of inquiry was focused on using technology as a means of asynchronous collaboration across District X, specifically focused on best practices for serving GT learners.

Position Statement

The PR of the present AR study was focused on serving GT students and in particular GT professional development (PD) of teachers of ELA courses. As the PR, I supported 6th–8th grade teachers by facilitating district-wide online PLCs, while collecting data on three different rural middle schools in District X. I served on the STAC committee during the 2014-2015 school year before spending the 2015-2016 school year as a Visiting Fellow at the University of Buckingham and as a member of the Oxford Education Society and the New College Middle Common Room at the University of
Oxford. I have served as the head teacher at a private GT program and as head of English and curriculum in a maintained sector school in SC. Currently, I am the Instructional Coach at one of the rural middle schools in the current AR study.

I created GT ELA curriculum units that were implemented district-wide and facilitated collaborative meetings throughout the first year of implementation in 2013-2014. In my career as a teacher leader in District X in South Carolina, I have focused on teacher training, collaboration, and specific implementation of PLCs. I have presented to teachers at the local, state, national, and international levels on various topics of GT education. These experiences led me to the current doctoral program in Curriculum and Instruction, focused on PLCs for teachers of GT courses.

**Conceptual Framework**

Since the AR study did not involve student-participants, many of the ethical issues often associated with teacher-based AR were not applicable. However, the research indirectly affected students, as teachers discussed and analyzed student data, teaching practices, and instructional strategies throughout the implementation of the online PLCs. All necessary protocols, district ethical guidelines, and policies were adhered to during the research process. District X worked closely with American Alliance of Innovative Systems (AAIS) to train educators and establish PLCs at schools. One of the co-founders of AAIS served as a technical advisor to ensure the research stayed aligned to the district’s vision for PLCs. The Chief Academic Officer of Instruction and Accountability in District X approved all research questions and protocol before implementation and the GT coordinator for the district participated as an advisor for the online PLC implementation. Some considerations that were addressed were the
following: online settings and access for Google Suites, app versus web-based platforms, district technology usage policies, personal versus school laptops and tablets, school logins versus personal logins, and availability of needed technology and training for teacher-participants (TPs). “It is critical for any school system contemplating adoption of any digital resource to review all agreements and ensure that any user data collected is used only to facilitate instruction and conforms with community expectations” (Bray, 2016, p. 39). The PR worked with a variety of district officials, including those associated with instructional technology, to ensure proper guidelines were followed.

District X has a priority to develop and strengthen PLCs to enhance student achievement and teacher effectiveness. The online PLC in the current AR study specifically defined a PLC as educators committed to working together to achieve better results for the students they serve. The PLC supported the belief that the key to improved learning for students is continuous for all educators. Within the PLC, TPs focused on PD increasing pedagogical knowledge and building a collaborative culture.

**Theoretical Framework**

The theoretical underpinning for this study is twofold, as both PLCs and best practices for GT ideologies support the present research study. A constructivist framework with a focus on social justice, intelligence theory, and practice theory is used as a theoretical framework in the majority of research on professional learning communities reviewed for this study. Constructivism posits that learning is an active construction and not simply a passive acquisition, and, therefore, knowledge is not transferred but, rather, constructed (Schcolnik, Kol, & Abarbanel, 2006). TPs built knowledge together and learned through collaboration during the online PLCs.
Constructivism is often divided into two main categories of cognitive or social. Cognitive constructivism aligns with the work of Swiss clinical psychologist Jean Piaget, while social constructivism is linked to the work of Soviet psychologist Lev Vygotsky (Schcolnik et al., 2006). Cognitive constructivism proposes that people do not acquire knowledge but, rather, construct it, while social constructivism postulates that people construct knowledge through interactions. Thus, the theoretical framework of this AR study is specifically grounded in social constructivism, as teachers worked together to build new knowledge that would not otherwise exist without the specific collaboration of the online PLCs.

The research for best practices for students who are identified as GT is grounded in intelligence theory, which has a historical essentialist approach to curriculum and pedagogy that started in the late 20th century with the essentialist manifesto, *A Nation at Risk* (U.S. National Commission on Excellence in Education, 1983). This landmark publication promoted the intellectual growth and tracking or ability grouping of students who were identified as “high achieving” for the benefit of the corporate community and higher education. Building on this historical approach of best practices for GT schooling, the present study includes a detailed discussion of ELA as well as the progressivist constructivist framework for curriculum and pedagogy popularized by John Dewey and his followers in the early 20th century and continued into the 21st century (Doll, 2013b). The progressivist emerged and greatly influenced the pedagogy of gifted students by propagating notions of child-centered pedagogy, problem-solving and high-thinking skills, and ability grouping (Lawrence & Glenn, 1994).
Research Process

The PR identified the effects on collaboration and professional growth of implementation by analyzing the data through descriptive statistics; the operationally defined constructs of collaboration and professional growth were measured and analyzed to reach a conclusion. The steps of AR are fluid and may be skipped or rearranged, if appropriate, but are generally arranged accordingly: identify and limit the topic, gather information, review the related literature, develop a research plan, implement the plan and collect data, analyze the data, develop an action plan, share and communicate the results, and then reflect on the research process (Mertler, 2017). The research process was cyclical and not linear, in accordance with AR methodologies.

Methodology

Research Philosophy

The present AR study involved the implementation of an online PLC for middle level TPs who taught GT students in three different rural middle schools in District X. AR can be used to identify problems, find solutions to problems, and, in due course, test the effectiveness of the solutions (Mertler, 2017). A problem was identified; data were collected informally through conversations; a possible solution was devised based upon informal data collection; an implementation of the possible solution was put in place; data were formally collected, and then a thorough analysis happened to test the effectiveness of the implementation. Although AR improves education and encourages collaboration, reflection, change, growth, and an open-minded nature, it often does not have generalizable conclusions, as the findings are unique to the particular participants and settings (Mertler, 2017). AR is vital to educational settings, as teachers need to be the ones finding answers and reflecting on practices in smaller communities, such as PLCs.
Education is such a large-scale institution that a one-size-fits-all approach cannot be expected. “The purpose of Action Research is to provide teacher researchers with a method for solving everyday problems in schools” (Gay, Mills, & Airasian, 2009, p. 486). The PR of the present AR study collected data and reflected on the findings with the TPs to further develop an action plan to enable District X to implement an online PLC that meets the needs specifically for their ELA GT students.

**Participant Selection**

The research was conducted online in District X in South Carolina with permission from the Chief Academic Officer of Instruction and Accountability and the District Coordinator of GT Studies. The Chief Academic Officer approved District X as a research setting through the district research application process. The GT Coordinator specifically approved the implementation of online PLCs for teachers of grades 6th–8th GT ELA courses. To measure interest among teachers, the PR used a survey via Google Forms and responses were recorded (Appendix A). Thirty-four teachers of GT ELA courses in District X expressed interest in participating in the online PLC with an almost even distribution between 6th, 7th, and 8th grade teachers in the school district as seen in Figure 1.2. Although 34 teachers opted to participate in the online PLC (Figure 1.2), the current AR study only reported on data collected from the 9 TPs at three rural middle schools. The participants were selected due to their need to travel farther because of their geographic location in a rural area and, on average, because the rural schools have a smaller population of GT students. The TPs ranged in experience from a first-year teacher to veteran teachers of over 20 years. Participants included: 8 females and 1 male. It is important to note, that the survey to measure initial interest indicated the online GT
PLC would be implemented during the 2015-2016 school year, but implementation was not until the 2016-2017 school year.

Figure 1.2 Online PLC survey results for initial interest

Research Site

The research took place on an online platform, the classic form of Google Sites, a free structured wiki- and web page-creation tool offered by Google as part of Google Apps for Work productivity suite, and the district portal, which is maintained by the district’s technological instructors. Google was selected because all teachers have access to Google Apps through their district login. Google Drive and email were used by the PR to collaborate with the following advisors: one of the co-founders of AAIS who served as a technical advisor to assist with keeping the research aligned to the district’s vision for PLCs, the Chief Academic Officer of Instruction and Accountability who approved all research questions and protocol before and during implementation into the district, and the GT Coordinator for the district who participated as an advisor to implementation of the online PLC. The three middle schools were selected for the current AR study because they are three of the most rural schools in District X. Two of the middle schools serve grades 6–8, while one of the middle schools serves grades 5–8. The percentage of students served by GT programs in the selected rural schools ranges from 13.2% to
19.7% of the respective school’s population according to the 2015 State Report Cards. For the purposes of this study, the schools were coded and referred to as School A, School B, and School C. Although only two of the schools qualify as rural schools, according to District X, the third school serves a population of almost 50% of students who commute from a rural area.

**Research Questions**

How does the implementation of an online PLC effect collaboration and professional growth for ELA teachers of 6th–8th grade GT students in three rural middle schools in South Carolina’s District X? The research question is derived directly from the problem of practice, as seen in Table 1.1.

Table 1.1

*Matrix of Professional Learning Communities*

<table>
<thead>
<tr>
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<th>Online PLC</th>
<th>Face-to-Face PLC</th>
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<tr>
<td>Gifted and Talented PLC</td>
<td>Addressed by research question</td>
<td>Problems/Issues reported with travel and meeting times</td>
</tr>
<tr>
<td>Regular Education PLC</td>
<td>A possible topic for a future study</td>
<td>Problems/Issues reported with relevance to GT</td>
</tr>
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</table>

**Sources of Data**

Quantitative data were collected before (Appendix B) and after (Appendix C) implementation of the online PLC using a survey incorporating Likert response items to determine beliefs, attitudes, and opinions of PLCs. A summative assessment of the online PLC was administered and included both Likert response items (Appendix C) and nominal response items (Appendix D) to better describe the advantages and disadvantages of the online PLC specifically for middle-level teachers of GT students of
ELA courses. Furthermore, a semi-structured interview was conducted, with questions (Appendix D) to enhance the description of the study.
CHAPTER 2
LITERATURE REVIEW

Introduction

The purpose of this literature review is to describe the scholarly literature involved with online professional learning communities (PLCs) specifically for gifted and talented (GT) middle-level teachers. Chapter 2 of this dissertation in practice (DiP) focuses on my identified problem of practice (PoP) and begins with a review of the literature to establish a theoretical framework for the present Action Research (AR) study. Next, the chapter moves into three sections, which focus on PLCs, online collaboration, and GT education. The review of literature concludes with a small section that connects the three topics together with a focus on online collaboration specifically for teachers of GT learners. The literature review was used to design the implementation and continually guided the AR study.

Within each section of Chapter 2, the review of literature focuses on historical relevance, importance, application, issues, and concerns. Notions of diversity, multiculturalism, and equity are discussed throughout the section on GT, as they are topics that are relevant to GT education and may have presumably become a part of the discussions during the online PLCs. The chapter concludes with a discussion of the joining of the research topics that focus on online collaboration for GT educators. This review of literature includes relevant articles, research studies, textbooks, and professional education handbooks. My identified PoP for my DiP focuses on online PLCs, which I believe can be used to connect teachers from different schools into a
professional online network focused on collaboration and professional growth. “With the advent of web-based technology, the new models of professional development (PD) are more feasible” (Hodes, Foster, Pritz, & Kelley, 2010, p. 297). Hodes et al.’s research demonstrates that practice can be distributed across a large geographic region by using a common website and impacts my thinking in this area.

**Purpose of the Review**

The purpose of Chapter 2 is to delimit the research problem, give insight into the limited mixed AR design, and give a sample of current opinions and prior studies that influence the theoretical foundations of the present AR study on online PLCs for teachers of GT courses. A thorough review of the literature is vitally important, as it offers ideas and perspective and informs the researcher of others who have conducted work in the same area or field. It demonstrates how other researchers have handled methodological and design issues in similar studies and can spark ideas and innovative ways of collecting and analyzing data. Overall, a comprehensive review allows for a more effective approach to study the research problem.

**Professional Learning Communities**

**History of Professional Learning Communities**

According to Venables (2011), PLCs have been around since the late 1980s but were known as critical friends groups (CFGs). He defines PLCs as “teachers meeting regularly to look at teaching and learning in ways that improve their craft through focused dialogue and honest examination of their work and the work of their students” (p. 9). Although it seems that both PLCs and CFGs are just different acronyms and varying names for a “teacher meeting” or anytime teachers meet together, Venables compares the *modus operandi* of PLCs to that of other typical teacher meetings. A PLC meeting has a
clear purpose focused on problem-solving, while openly embracing questions and
disagreements with a facilitator that guides rather than directs the meeting (Venables,
2011). This definition of PLCs aligns with American Alliance of Innovative Systems’
(AAIS) vision of PLCs. AAIS are consultants hired by District X to help with the
implementation of PLCs in schools. Participants in Venable’s model are organized as a
“small work group” rather than a “full faculty group” in which teachers are often
complacent and compliant rather than personally involved in a local and particular
curricular or pedagogical issue. The teacher-participants (TPs) in the AR study were a
small group collaborating on the particular curricular and pedagogical issues aligned with
best practices for GT learners in ELA courses. Overall, PLCs in Venable’s model should
be about what is good for students and focused around student learning, collaborative
curricular design, and analyzing data.

DuFour, Eaker, and DuFour argue that we should fundamentally “alter teaching,
learning, and the bureaucracy and individualism that pervade so many schools” (as cited
in Servage, 2008, p. 63). DuFour, DuFour, and Eaker (2008) explain PLCs as a merger of
research and practice while framing them with reference to action research models and
identifying the following six characteristics of PLCs:

1. Shared mission, vision, goals, and values
2. Collaborative and collegial teams
3. Collective and authentic inquiry
4. Action orientation and experimentation
5. Commitment to continuous improvement
6. Results orientation
These six characteristics parallel the PLC goals of AAIS. Some core beliefs around PLCs are: PD is needed to improve student learning, and meetings need to include authentic inquiry and problem solving in regards to daily teaching (Servage, 2008). Boudett and City (2014) referred to meetings as learning organizations. These meetings are not exclusive to teachers but are implemented throughout the business world and defined as “an institution that routinely gathers a broad range of data collectively, and then acts deliberately to get better at what it does” (p. 12). Whether groups, organizations, or communities, this type of collaboration can be summed-up as ongoing AR and can be implemented by TPs or teacher-researchers on a regular basis.

**Importance of Collaboration**

Collaboration is important. “Teachers are sufficiently constrained by their work load so that it would be vain to hope they might read generally and widely enough in the field to be able to give form to the course in their own terms” (, 2013, p. 91). Collaboration through PLCs can allow teachers to share the workload and widen their breadth of knowledge or even construct new knowledge together. Regarding social justice, Freire (2005) writes and introduces the awareness of students he terms “oppressed,” and he argues for the need for cohesion between educators, politicians, and the local and particular people. He states, “Education is not carried on by ‘A’ for ‘B’ or by ‘A’ about ‘B,’ but rather by ‘A’ with ‘B,’ mediated by the world – a world which impresses and challenges both parties” (p. 93). He reinforces the notion of professionals working together, in collaboration, at a level of action, which is reflected in the online PLCs in the current AR study. Dialogue, reflection, and action, whether face-to-face or online, are key for Freirean progressivist models of curriculum pedagogy.
PLCs center on focused dialogue and reflection in order to make improvements in pedagogy and specific practices. Doll (2013a) claims, “[C]urriculum in a post-modern frame needs to be created [self-organized] by the classroom community [PLCs and teachers], not by the textbook authors” (p. 219). Following John Dewey, Doll states, “in this new frame for rigor–combining the complexity of indeterminacy with the hermeneutics of interpretation–it seems necessary to establish a community, one critical yet supportive” (p. 221). The vision of PLCs in District X supports the notion of teachers collaborating in an openly critical yet supportive community.

Eisner (2013) attracts readers with questions designed to make educational leaders think holistically about a school with students, teachers, parents, and community members in mind. Focusing on teacher perspective, he concludes, “The center for teacher education is not the university; it is the school in which the teacher works” (Eisner, 2013, p. 285). He then goes on to describe how professional growth should be promoted in schools and not be isolated to teacher training programs in preparation for the classroom.

The AR study focused on collaboration and professional growth for teachers of GT ELA courses in grades 6th–8th. The inherent nature of the PoP was to allow professional growth of best practices for GT learners within the context of the PLC so it is not solely limited to previous GT endorsements or certifications attained through training programs.

The impact of the Internet on the lives of teachers is ubiquitous, as online platforms are being increasingly used by educators, and online communities are a present source of continuous PD in the education world (Duncan-Howell, 2010). Technology has enabled educators to deliver authentic and personalized opportunities for learning and
PD. “A social revolution is occurring in the way information is shared, knowledge is generated and innovation takes place over the internet” (Holmes, 2013, p. 97). Online learning communities have been an appealing alternative to traditional meetings and have often seen more longevity and ongoing connectedness that face-to-face meetings cannot offer. Following Doll (Doll, 2013b), my PoP focused on improving collaboration and professional growth through online PLCs that are theoretically grounded in postmodernism and the Four Rs of Richness, Recursion, Relations, and Rigor, all of which can be incorporated into best practices in GT PD for ELA teachers. Following the notions of collaboration established with Freire (2005), these Four Rs together incorporate reflection, which is one of the most important elements for PD. As Doll points out, “Without reflection . . . it is not reflective recursion, it is only repetition” (p. 218). The online PLC in the current AR study allowed teachers to construct new learning through collaboration and reflection.

Eisner (2013) argues that “schools will not be better for students than they are for the professionals who work in them” if the “real needs” of teachers are not met by the local and particular administration in which the teacher works (p. 285). The present AR limited mixed design study promoted collaboration among TPs at different schools in the form of online PLCs. The online PLCs promoted teacher dialogue, reflection, and action on current practices and future practices with the aim of increasing teacher collaboration and teachers’ knowledge and professional growth of content and pedagogy in ELA and best practices for GT learners.

**Issues with Professional Learning Communities**

Time allocation and management, teacher interest and involvement, attitudes and willingness, and geographical barriers have all been recorded as issues associated with
PLCs (Servage, 2008). For example, issues specifically reported by Servage include difficulty with establishing and maintaining PLCs and a “gap between the eloquence of the professional learning community model on paper and its messiness in practice” (p. 70). Ideas and research-based initiatives for teachers in PLCs are described by Servage, but her research shows that gaps can often appear in what can actually be attained in the day-to-day life of a teacher. For example, PLCs often lack sustainability and long-term effectiveness, especially over long breaks in the summer. Many of the issues surrounding PLCs revolve around the differences between theoretical and applicable practices. An idea may be theoretically grounded but may not be realistically applicable. Often a one-size-fits-all approach is employed, such as a PLC focusing on educational technology but fails to address the underlying purpose of working together as professionals (Servage, 2008). It is possible that an alternative form of a traditional PLC, such as implementation of an online PLC, could be a solution to some of the continual PLC issues that arise.

**Online Collaboration**

**Application of Online Collaboration**

Online platforms can be used to connect teachers from different schools, districts, regions, and countries into a professional network. “With the advent of web-based technology, the new models of professional development are more feasible” (Hodes et al., 2010, p. 297). Hodes et al.’s research demonstrates that PLC practices can be distributed across a large geographic region by using a common website. Overall, their research shows that to encourage collaborative discussions online, discourse should be planned, and educational leaders (regardless of whether they are teacher leaders or administrators) must model examples that show the advantages of online collaboration. The PR modeled online collaboration while facilitating the online PLC.
Online learning communities have been an appealing alternative to traditional meetings; they often experience more consistency and ongoing connectedness than face-to-face meetings (Holmes, 2013). Online meetings enable teachers to collaborate over the summer as they prepare for the next academic year. The TPs in the current AR study requested to have continued access to the online platform over the summer. Holmes (2013) describes how online learning communities are a valuable alternative to the traditional model of brick-and-mortar PD sessions. Within his research, Holmes uses web tools that include wikis, Google documents, online presentations, discussion forums, and blogs. Web 2.0 technology, which is web technology that aims to enhance creativity, information sharing, and collaboration among online users was integrated to build online communities of teachers into PLCs. Holmes analyzed discussions of participants in his study through coding and reporting common notions; this process was used in the current AR to analyze the semi-structured interviews at the end of implementation. Another research study was grounded in socio-cultural learning theory and demonstrated remarkable potential to integrate an online community to support PLCs by improving and enhancing social interaction and generating priceless collective intelligence and scaffolding (Tu, Blocher, & Ntoruru, 2008). “Online social networking tools also offer clear advantages for the sharing of expertise and ideas amongst busy, time-limited professionals” (Gray & Smyth, 2012, p. 60). "In education, opportunities to access a wide range of courses and professional development services are now available on the Internet" (Liu, Carr, & Strobel, 2009, p. 100). These studies guided my thinking on how the online PLCs in the current AR study may be able to use the Internet to incorporate a wide range of PD to expand professional growth.
Multiple research studies, including Liu, et al.’s case study (2009), have shown that time and resources are obstacles for many teachers and "cyber-enabled instruction has offered a convenient, accessible, and often inexpensive method for updating pedagogical expertise" (p. 100). It allows for learning to occur anytime and anywhere with asynchronous courses and PD. The online application not only tailors to teachers’ busy schedules but also offers valuable resources both locally and globally (Liu, et al., 2009). Many online communities have been successfully implemented in the educational world to help teachers bridge the gap between what is research approved and also applicable in their daily life. Overall, the evidence collected in a meta-analysis of 74 relevant peer-reviewed journal articles reviewed by the U.S. Department of Education indicates that online communities of teachers can achieve the goals of traditional PLCs (Blitz, 2013). The online PLCs in the review of literature showed flexibility and the promotion of self-reflection on learning practices as the strongest advantages reported (Blitz, 2013). Research indicates that teachers who collaborate online are engaged, develop a feeling of community, improve knowledge of subject and pedagogical content, and modify their practices accordingly.

**Concerns with Online Professional Learning Communities**

Although online PLCs could operate as a solution to some current PLC issues, other problems may arise. Multiple research articles mention the importance of assessing teacher comfort with technology before implementing an online community and the possible need for teacher training to be part of the implementation. Possible training was considered for the online PLCs within the current AR study but was reduced to a brief meeting with the PR prior to the implementation. The review of literature by the U.S. Department of Education reveals motivation, peer engagement, and regularly
contributing as other struggles associated with online PLCs (Blitz, 2013). These struggles were monitored throughout the implementation of the online PLC for the current AR study and a further review of literature was conducted on the topic, as needed.

**Gifted and Talented**

**History of Gifted and Talented**

Although the ideology and politics of the US Common School Movement in the 20\(^{th}\) century did not overtly recognize what we now call “gifted and talented” students, our federal policy on GT in the US arose with the notion of enabling the brightest minds during the Cold War and the Space Race Era (Spring, 2014). These historical events eventually lead to the Marland Report in 1972 and the Jacob Javits Act in 1988 and ultimately lead to the idea of giftedness being a country’s most valuable natural resource (Sternberg, 1996). Prior to the 20\(^{th}\) century, giftedness carried a quality of ambiguity with it, as it was a relatively new field of study. GT curriculum and pedagogy drastically changed during the 1950s and 1960s; different activists promoted these reforms. The Cold War called for a focus on programs for academically talented students as part of US national defense (Spring, 2014). Although GT education became important during the post-Sputnik era, concerns in the 1960s about fairness and equity caused gifted education to be viewed as elitist and anti-democratic. “The reasons behind this [view] are complex, involving all constituencies of the schools and the society they reflect (Lawrence & Glenn, 1994, p. 9). Kliebard (2013) wrote, “Part of the problem, undoubtedly, with the era of the scientific curriculum makers . . . Is the failure to recognize the complexity of the phenomena with which we deal” (p. 77). The business of curriculum and pedagogy for GT students is complicated and school administration, as shown by Spring (2014), is a large bureaucracy with a trickle-down effect on many aspects of society. Some aspects
were not seen in the early stages of GT policy and are now being adjusted, such as the identification of minorities in GT programs. Gifted education and research is still a relatively young field in the realm of education, and it is often still identified with middle-class, White culture.

**Defining Gifted and Talented**

There are many definitions of so-called, “gifted and talented” schooling found in the literature. Gagné (1995) is known for his theory of talent development and the Differentiating Model of Giftedness and Talent (DMGT), which defines different words that are often utilized in the world of GT, including gifted, talented, precocity, ableness, genius, and prodigy. He focuses his research on the two words that are used most often, gifted and talented and the differences between the two. For the purposes of this paper, Gagné’s model has been adopted, as it integrates environmental aspects and learning experiences, which are essential in the development of talent and the prevention of underachievement. Gifts or aptitudes are “natural talents” that a student innately has, while talents are acquired and developed (Gagné, 1995). He also points out that gifts develop naturally with maturational processes as well as with practice. He defines and gives examples of four general areas or domains of giftedness, including intellectual, creativity, sensorimotor, and socioaffective. There are other areas of giftedness that are currently being researched, but he focuses on these four. Gagné’s model shows how naturally occurring gifts can be developed by practice, learning, and training to become talents and how motivation, temperament, personality, surroundings, persons, undertakings, and events are catalysts to specific talent development and competencies. Gagné defines gifted students as high-ability students who have unique academic, cognitive, social, and emotional needs that should be nurtured with specific pedagogical
practices. Warne (2009) summarizes it well with the notion that “giftedness is not defined by test scores alone” but “is more like a cluster of abilities and behaviors that tend to be comorbid with one another” (p. 48). In SC, GT is defined in state regulations as students “demonstrating high performance ability or potential in academic and/or artistic areas and therefore require an educational program beyond that normally provided by the general school program in order to achieve their potential” (South Carolina Gifted and Talented Best Practices Manual, 2006, p. 8-1). The online PLCs in the AR study, therefore, explored the options for educational strategies beyond the normally provided strategies discussed within a traditional PLC.

**Gifted and Talented Curriculum**

Doll (2013a) deposes the idea of tradition and replaces the Three Rs with his Four Rs. Doll relates to the current AR study, and in particular, his theory relates to certain aspects of my research and enables me to better describe the collaboration, reflection, and action on best practices for gifted and talented ELA curriculum and pedagogy.

For example, Doll (2013a) has influenced my thinking on GT curriculum and pedagogy goals and has enabled me to focus on developing critical thinking skills that promoted a broader understanding of the overarching interdisciplinary concepts that should be embedded in an online PLC that aims to improve the best practices for teachers of GT ELA learners. While making sure to teach content, process, and concepts that often include opportunities for metacognition and reflection, Doll describes his critique of the historical Three Rs of “Readin’, ‘Ritin, and ‘Rithmetic” in American school history and explains how they were incorporated into the Common School curriculum when the US was focused on preparing students to participate in a competitive capitalistic and
increasingly industrialized society. Doll (2013b) replaces the Three Rs and suggests the Four Rs should now be used as criteria to evaluate a post-modern curriculum. The Four Rs are Richness, Recursion, Relations, and Rigor, all of which can be incorporated into an online PLC for best practices in GT PD. For example, Richness is very similar to the idea of creating depth in GT curriculum; Recursion relates with acceleration practices of advancing at a rapid speed; Relations corresponds with complexity, as they both link together multiple layers, and finally, Rigor is synonymous with the differentiation feature of challenge. All of these were discussed as strategies that reflect best practices of differentiation specifically for GT learners.

Furthermore, studies of diversity, multiculturalism, and equity pedagogy have influenced my thinking of GT curriculum. The rationale for diverse curriculum is multifaceted with central notions that everything cannot be measured with a standardized test or taught through a “teacher-proof” curriculum. Curriculum should allow students to demonstrate what they know through a variety of exhibitions and allow for natural rhythms to emerge in teaching and learning (Delpit, 2006). Implementing online PLCs or online PD for teachers of GT students allowed for conversations to transpire about how to best diversify the curriculum. A continual and sound rationale for a more diverse curriculum focuses on the large gap in achievement on state-mandated tests and access to education resources for students of diversity and low-income households (The Southern Educational Foundation, 2010). This growing gap can be seen through numerous key reports published by the National Association for Gifted Children (NAGC) that focus on issues of diversity and the achievement gaps. These reports are especially relevant to my thinking and that of the TPs in the current AR study, as the rural schools in District X are
more diverse in population than the suburban schools and therefore require more attention to PDs focused on diversity, multiculturalism, and equity pedagogy.

Banks and Banks (1995) state that “multiculturalism must be broadly conceptualized and its various dimension must be carefully delineated” (p. 152). The framework of teaching with multicultural education in mind takes into account a variety of components, such as teaching practices, power shifts, and school structures. Teaching practices should encourage reflective thinking and questioning of assumptions through cooperative learning. Power shifts alter the teacher from just bestowing knowledge and instead encourage students to think and reflect on knowledge. Students are encouraged to generate multiple solutions instead of looking for a single answer to a problem (Banks & Banks, 1995).

Teacher identity plays a huge role in the way curriculum is enacted in public schools, as a “teachers’ beliefs about the nature of knowledge have important implications for designing and teaching multicultural curriculum” (Sleeter, 2005, p. 28). After all, a teacher’s epistemological beliefs factor into how he or she perceives and teaches the curriculum (Sleeter, 2005). Teachers will need to learn to work with multiple perspectives, multiple frames of reference, and multiple funds of knowledge in order to fully understand the intricate needs to diversify curriculum (Sleeter, 2005). The online PLC encouraged the study and discussion of different ideologies, epistemologies, perspectives, and assumptions surrounding multiculturalism and curriculum. PD should engage teachers in a variety of reading and analysis of diversity in the realm of education. The online PLC in the current AR study considered a wide range of readings about diversity in the realm of education as pertinent to GT education and best practices.
Drawing from Milner (2014) and Baszile (2006), the inherent danger in scripted, narrow, and politicized curriculum revolves around equity versus equality. These types of curricula are geared to be equal; however, equality should not be the goal in this case but, rather, equity. Equity is not the same as equality in education. Students do not require the same education but, rather, the same opportunities to acquire the education they individually need in order to be successful. Curriculum should not be catered to the mean, median, or mode of the population but should be open and allow for individualization. A lack of rigor, under-prepared teachers, student knowledge gaps, and a lack of creativity and skills in other areas are often effects of scripted, narrow, and politicized curricula (Milner, 2014). Scripted curricula can also overshadow professional judgment and expertise of teachers in the classroom, which can be detrimental to student learning and success. Sleeter (2005) argues standards-based reform promotes equity through shared accountability and understanding of multiple stakeholders, such as students, parents, and teachers, as well as making goals public to community members and others. Sleeter (2005) comments, “The main problem is learning to value points of view and accumulated knowledge that is not dominant and has been routinely excluded from the mainstream” (p. 5). When looking at curriculum and assessment issues, PLCs should be looking at where the needs, the deficits, and weaknesses are, according to the data, and finding the main problem, which should be the focus when overcoming obstacles. The research on multiculturalism furthered my thinking and guided the direction of discussions throughout the implementation of the online PLC.

In the current study, teachers collaborated online about common assessments and district-wide units that are based on Ainsworth’s (2014) *Rigorous Curriculum*. These
curriculum units can be compared with Bruner’s curriculum, as they reflect authentic learning through performance tasks. Although the units are outlined, “the material[s] presented [are] woven loosely enough to permit the teacher to satisfy his [or her] interests in forming a final product to be presented to children” (Bruner, 2013, p. 91). Bruner outlines curriculum by the five great humanizing forces, including language, tool making, social organization, child rearing, and worldviews. His ideas can be seen in GT curriculum today, such as the College of William and Mary units, which are used in District X. The curriculum encourages academically gifted students to move beyond basics and find patterns throughout language and history. In addition to discussing the current units, the online PLC allowed teachers to move beyond the current curriculum to collaboratively create materials aligned with best practices for GT studies. For example, the TPs of 7th grade courses discussed the patterns of “the best of times” and “worst of times” throughout language, history, and art while collaborating on a unit, which included A Tale of Two Cities (Dickens, 1859).

**Underrepresentation in Gifted and Talented**

Throughout the literature, there are reports of certain ethnic and cultural groups of students not being identified as gifted through traditional methods. One method that has been implemented to better identify students of minorities is the Student Task Assessments and Rubrics method, which is also known as STAR Performance Tasks.

[The STAR] initiative was primarily designed to broaden the avenues for identifying giftedness in all student populations and secondarily to respond to the need to promote equity in the identification of underrepresented populations in gifted programs across the state, particularly African American students and
populations from low socioeconomic backgrounds. (Van Tassel-Baska, Johnson, & Avery, 2002)

In District X, a multicriteria identification process is used and the STAR Performance Task Assessment is part of that GT identification process.

The underrepresentation of minorities in GT programs is a quintessential example of how curriculum has marginalized certain populations. “Political and cultural struggles over power have shaped the contours and dimensions of racism differently in different eras” (Lipsitz, 2013, p. 79). Today, inequality and oppression are still exemplified in educational institutions and curriculum. Although some may not see the inequalities, as they have become so ingrained within society. When racism becomes a societal norm, it causes ripples of racism to form elsewhere too, such as in legislation, culture, and even curriculum. It becomes so normalized that people do not question it as wrong.

Dr. Cornell Pewewardy of the University of Kansas calls this kind of racism “dysconscious racism,” or, in other words, racism that the people themselves who exhibit it are unaware of. (Roppolo, 2013, p. 74)

“Although the terrain of struggle has shifted from the early days of the civil rights era, the struggle continues and takes on new forms” (Carlson, 2008, p. 29). Today the struggle continues in the terrain of schools and curriculum but can be combatted through reflection, such as the discussions that are an inherent part of PLCs.

According to Ford (2010), “At least 500,000 Hispanic and Black students are not being challenged to reach their potential in schools nationally” and “further analyses indicate[s] that Black and Hispanic males are more underrepresented than all other groups” (p. 32). She explains issues surrounding deficit thinking, colorblindness, and
White privilege that have been embedded in the structural fabric and cultural workings of education and beyond. To effect meaningful change, she suggests specific implementations, such as changing the mindset of teachers from colorblindness to cultural responsiveness and teachers working collaboratively to make curriculum and instruction rigorous and culturally responsive (Ford, 2010). Teachers cannot be blind, as “differences have to be noticed and named in order to make significant progress in overcoming discrimination and inequality of opportunity” (Carlson, 2008, p. 27). PD and PLCs need to bring issues of deficit thinking, colorblindness, and White privilege to the forefront of discussions, so notions of cultural responsiveness and rigor can be discussed while planning curriculum. “When the curriculum is rigorous and multicultural—culturally responsive—then more Black and Hispanic students will be engaged and motivated” and “with engagement and motivation comes performance; with high performance or achievement comes greater representation in gifted education” (Ford, 2010, p. 35). In addition to changing the curriculum, Dr. Carol Dweck, a social psychologist at Stanford University, advises educators to change the mindsets of students (Dweck, 2007). She defines a fixed mindset as the belief that intelligence is a static trait and defines a growth mindset as the belief that intelligence can be developed. The ideology of a growth mindset encourages students to work hard and to perceive failure as an opportunity to grow (Dweck, 2007). Blackwell, Dweck, and Trzesniewski (2007) conducted a longitudinal study of several hundred middle school students over the course of two years. Although students achieved similarly at the start of the study, their grades diverged. Throughout the study, students with a growth mindset outperformed students with a fixed mindset (Blackwell et al., 2007). A growth mindset is especially important to
GT students, as they often become obsessed with grades or always being right as well as struggle with characteristics of perfectionism. “In addition, studies demonstrate that having a growth mind-set is especially important for students who are laboring under a negative stereotype about their abilities, such as Black or Latin students or girls in mathematics or science classes” (Dweck, 2010b, p.26).

GT can often be a controversial topic, as separating students by ability can also be a separation of students by class or race, especially when there is not a multicriteria identification process. Fortunately, the district in the current AR study uses a multicriteria identification process, which includes the STAR Performance Task and broadens the identification of all student populations, specifically students from minority populations and low socioeconomic backgrounds.

**Criticism of Gifted and Talented**

Issues of identification and underrepresentation are not the only criticisms of GT courses or programs. The emergence of Social Darwinism, influenced by Herbert Spencer, in the early 20th century is often associated with the elite view of GT; this elitist view of Social Darwinism was that the rich were those best endowed and their rise to the top was preordained by their fitness to succeed (Lawrence & Glenn, 1994). Although it is not so directly stated today, elitism can still be associated with GT courses and programs, as students are homogenously grouped or separated in secondary school by different tracks. Furthermore, critics of GT courses cite how tracking was accelerated in the 1960s in response to Civil Rights laws, “creating schools within school where those on different tracks rarely met” (p. 8). This view of tracking and homogeneous grouping to separate students is used to criticize GT courses and programs. However, researchers in gifted education argue that gifted students need to have opportunities to work with students with
similar ability and experience connection with like-minded peers to avoid negative self-concept, intellectual and emotional frustration, and the concealment of abilities (Walsh, Hodge, Bowes, & Kemp, 2010). A concern that arises from homogenous grouping is equal quality and resources between courses and classes.

Concerns about equal facilities and equal resources are easy to quantify, but beliefs are another concern, about equality, that are harder to quantify. For example, students may begin to believe that certain abilities are inherent and that their ethnicity or gender does not have them. Similarly, educators can decide that certain students are not capable and, therefore, not identify them as gifted or take steps to help them develop to their potential (Dweck, 2010b). But, “if stereotyped students have a growth mind-set – even if they grant that their group may have underperformed historically – they believe that through their effort and the support of educators they can develop their abilities” (Dweck, 2010b, p.29). It is essential for all students to work hard and be challenged to grow, and it is essential for educators to think about the malleability of intelligence in all students. When teachers believe that giftedness is innate or static or that some students are gifted while most are not, it reflects a fixed mindset. A fixed mindset can be detrimental in not identifying minority students as gifted or assuming once a student is identified as gifted, they are always going to be able to perform high.

Which leads to another criticism of GT programs – the practice that once a child is identified as gifted, he or she is automatically in GT courses for the rest of his or her elementary and secondary educational careers. Or, on the other hand, if a student is not identified as gifted, then he or she is not capable of more difficult work. These are both overgeneralizations and examples of a fixed mindset. Increasingly, giftedness and growth
mindset are being intertwined and aligned, so students can be as smart as they want to be (Dweck, 2010a). Educators are beginning to think more about the differentiation of gifted students, in terms of challenge, complexity, depth, and abstractness, instead of just acceleration. “Fast learning is not always the deepest and best learning,” especially for high ability students (Dweck, 2010a, p.18). This notion is why District X in the current AR study has increasingly begun to offer more difficult courses for students instead of allowing students to be promoted early. The differentiation strategies of making content more abstract, challenging, or complex were just a few of the strategies discussed among teachers during the online PLC and reflected upon to make the action plan. Teachers in the current AR study were encouraged to collaboratively think about the notion of a growth mindset and about a more equitable approach to public education and the curriculum for GT students.

**Importance of Gifted and Talented Collaboration**

Although some may argue that already high achieving students do not need as much focus and attention, because they will perform well without extra help, my claim contradicts this notion. This is especially true when one considers the special needs for exceptional students on the high end of the special education (SPED) spectrum or minority students or students of lower socio-economic status. Students who are identified as GT require a different educational approach. Gallagher (2004) argues that identified GT students are being short-changed and require competent educational services and experiences in order for their special needs to be met. Teachers need to be informed and continually discussing best practices for GT students. “By raising a teachers’ awareness of the signs of giftedness, fewer ethnically diverse gifted students are likely to languish in mainstream education classes” (Warne, 2009, p. 51-52).
Noddings (2013) argues that “equality of quality” cannot be achieved by forcing all students to take the same exact path. She questions whether the traditional “education for the best” is truly the “best” for the most academically able students. She states her view that educators must give equal respect to the talents and aspirations of students, take their interests into account, and consider them wholly and as self-advocates if they are to provide “equality of quality” in education. The current AR study focused on an online PLC designed to meet the specific pedagogical and professional needs of teachers of GT students in ELA courses in grades six through eight.

With funding issues and an already small population that is often set aside as less important, it is vital to continue research on online PLCs that are designed for teachers who teach students who are identified as GT. Cohen and Ambrose (1993) provide a metaphor of theory for differentiated education of the gifted by comparing it to a necklace with each link, pearl, or jewel representing, respectively, aspects to be explained by theory, research efforts, and practice. They discuss multiple theorists in the field of GT who focus on theories related to giftedness, intelligence, and creativity. I believe that these theorists are springboards for conversations about online PLCs that focus on best practices for students who are identified as “gifted and talented” and the ELA teachers who teach them.

In my experience in my current school district, the brick-and-mortar PLC PD sessions often focus on remediation and intervention practices to help teachers support students who are identified as achieving below the mean, but teachers of GT ELA courses require a different kind of PD in order to serve the GT students they teach.
Issues with Gifted and Talented Collaboration

Often, the teachers of GT students do not make up the majority of most schools and are either collaborating with teachers of traditional courses or planning in isolation at their respective schools (Blitz, 2013; Hardman, 2012; Little & Housand, 2011; Liu, et al. 2009). There is difficulty with collaboration associated with SPED because teachers are generally distributed across multiple school sites (Hardman, 2012). Just as Liu, et al. reports that pre-service training does not include engineering, so too, teachers are not educated on how to integrate it into the curriculum; the same is often true of pre-service teacher education not including GT training. And unlike other SPED teachers, those who teach students on the gifted spectrum have to provide high levels of expertise in both the content knowledge of the subject taught and specific pedagogy that is needed to adapt the disciplinary content to meet specific instructional needs of gifted students. Hardman (2012) reports that a PLC approach to PD is a better fit for the practice of SPED because it is student-centered and can be individualized according to teachers’ instructional needs.

Online Learning Communities for GT Collaboration

Little and Housand (2011) illustrate the issue of GT as a secondary objective in many schools because of other initiatives, and then explain how online learning opportunities have the potential to offer more opportunities for professional growth dedicated to best practices for GT. Their article focuses on the coherence of curriculum, active engagement, sustained attention, and administrative support in relation to online platforms and best practices for GT while emphasizing ideas to support such a venture.

In a meta-analysis of 74 relevant peer-reviewed journal articles, Blitz (2013) reports that online communities of teachers can achieve the goals of traditional face-to-face PLCs. “Whether a PLC is web- or site-based it is not location that gives the
community its meaning, but rather the work its members do; how they accomplish that work; and most importantly, the effect that work has on student achievement” (Hardman, 2012, p. 19). “Online activities may present effective ways of connecting gifted education professionals across multiple schools and districts and provide professional learning experiences” (Little & Housand, 2011, p. 19). Therefore, an online PLC was implemented as a possible solution to the collaboration and professional growth issues discussed in the PoP for the current AR study.

**Application to the Current Study**

The literature recommends establishing specific and meaningful goals for professional learning as well as ensuring that teachers have opportunities to reflect on and engage in discussions relevant to their own environments and classrooms (Blitz, 2013; Hardman, 2012; Little & Housand, 2011; Liu, et al., 2009). It is vital that facilitators recognize and respect where learners are and help them grow at their varying levels.

The online PLC of the current AR study had clear expectations and objectives for participants focused on collaboration of creating and refining lessons and assessments associated with units, participating in problem-solving, as needed, and growing through an online PLC and PD experience. Following Doll (2013b) and the Four Rs (Richness, Recursion, Relations, and Rigor), the pragmatic objective of the online PLC included:

1. Refining knowledge and skill;

2. Identifying problems and solutions;

3. Focusing on best practices for GT;

4. Sharing resources; and

5. Increasing knowledge of ELA curriculum and pedagogy.
Participants were offered the opportunity to grow and collaborate in areas of ELA content, best practices for GT, multiculturalism, and equity pedagogy.

**List of Keywords/Glossary**

The following keywords and their definitions are found in the literature and are important to understanding the current action research study.

*Action Research* – According to Mertler (2016), action research is a systematic approach by teacher practitioners to study their own practices in order to better understand them and to be able to improve their quality of effectiveness.

*Community* – “Individuals coming together in a group in order to interact in meaningful activities to learn deeply with colleagues about an identified topic, to develop shared meaning, and identify shared purposes related to the topic” (Hord, 2009, p. 41).

*Constructivism* – Educational Broadcasting Corporation (2004) defines constructivism as an overarching theory based on observation and scientific study about how people learn. It says that people construct their own understanding and knowledge of the world through experience and reflection.

*Curriculum* – “Even a simple definition of ‘curriculum’ such as ‘what educating institutions should teach’ compels answering a vast, possibly overwhelming set of questions including: what subject matter should be selected and by what criteria, how should the subject matter be organized, to whom should it be taught and by what methods and with what materials, how is it most effectively learned, and how might [educators or researchers] judge the success of the undertaking” (Flinders & Thornton, 2013, p. ix).

*Effectiveness* – the extent to which the goals of the PLC are being met.
Efficiency – the terms of reaching effectiveness at a reasonable cost, whether the cost is money, time, or other variable.

Essentialism – Theories and assumptions about cultural differences that render them natural phenomena (Schramm-Pate, 2005).

Evidence-Based Practices (EBP) are the practices that have been shown to have a positive effect on student learning when tested under carefully controlled research conditions (Hardman, 2012).

Gifted – The 1972 Marland Report to Congress is where the current federal definition of gifted students was originally developed, but it has been modified to the definition below, which is located in the Elementary and Secondary Education Act (U.S. Department of Education, 2016) Title IX – General Provisions (§901), Part A – Definitions (§9101):

“Students who give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, and need services and activities not ordinarily provided by the school in order to fully develop these capabilities” (para. 22).

Google Sites – A free structured wiki- and web page-creation tool offered by Google as part of Google Apps for Work productivity suite.

Hybrid PLC – PLC that combines online and face-to-face interactions (Blitz, 2013).

Learning – “The activity in which professionals engage in order to enhance their knowledge and skills” (Hord, 2009, p. 41).
Learning Events – This term is defined by the PR, as learning objects or items combined with directives, in order to create a monthly PD opportunity or learning event on the online platform.

MasteryConnect – An online platform that incorporates a mastery tracker that monitors student performance, common assessment creation and sharing, resource pins, learning communities, grading tools, reports, and more (MasteryConnect, 2017).

Multiculturalism – “The view that the various cultures in society merit equal respect and scholarly interest. In education, it refers to a movement affecting curricula, teaching methods, and scholarship in a variety of disciplines” (Schramm-Pate, 2005, p. 9).

Online PLC – According to Blitz (2013), an online PLC is loosely defined as teams of educators who use digital and mobile communication technologies, at least part of the time, to communicate and collaborate on learning, joint lesson planning, and problem-solving.

Platform – A platform is a technology term used to describe an online program that is used, as a base upon which other applications, processes, or technologies are developed.

Portal – An online platform maintained by the district’s technological instructors.

Professionals – “Those individuals who are responsible and accountable for delivering an effective instructional program to students so that they each learn well. Professionals show up with passionate commitment to their own learning and that of students, and share responsibility to this purpose” (Hord, 2009, p. 41).
Professional Learning Communities – According to Venables (2011), PLCs have been around since the late 1980s but were known as Critical Friends Groups (CFGs). He defines PLCs as “teachers meeting regularly to look at teaching and learning in ways that improve their craft through focused dialogue and honest examination of their work and the work of their students” (p. 9).

Theory – A theory is a cohesive justification for intricate, observed phenomena that systematically describes the fundamental relationships or principles of those phenomena.

Web 2.0 Technology – web technology that aims to enhance creativity, information sharing, and collaboration among online users (Holmes, 2013).
CHAPTER 3

METHODOLOGY

Introduction

The purpose of Chapter 3 is to describe the action research (AR) methods of the present study. The present AR study involved the implementation of an online professional learning community (PLC) for middle level teacher-participants (TPs) who teach English language arts (ELA) to students identified as gifted and talented (GT) in three rural middle schools in District X. It was a limited mixed design study, including quantitative and qualitative elements, to discover the effects on collaboration and professional growth focused on best practices for GT instruction. Quantitative data were collected through Likert scale surveys (Appendix B and Appendix C) and nominal response items (Appendix D) administered to teacher participants. Quantitative data may sometimes be perceived as being only analytical in content and characteristic, but it can include feelings, interests, and attitudes of participants (Mertler, 2017). The research tradition was a descriptive research design that acquired information through Likert scale surveys (Appendix B and Appendix C). The surveys were specifically designed to collect data on collaboration and professional growth as part of this AR study. The qualitative data were collected through guided and semi-structured interview questions and were transcribed before being analyzed and reported. In accordance with AR, the results of this study were used to develop an Action Plan designed to solve the problems associated with PLCs for teachers of GT ELA courses.
Positionality Statement

Autobiographical Sketch

The PR became a teacher of GT students because she, herself, was identified as GT at an early age. I came into teaching because of some exceptional teachers that influenced me and changed my life. They went outside their call of duty to identify me as GT, when I was from a low-socioeconomic household and helped me grow as a student and a person. I began an education program as an undergraduate student with the purpose of making the same difference in students’ lives that teachers had made in mine. I was educated in the district where I now serve as an instructional coach and was lucky enough to be identified early as GT and benefit from support and programs that are not always available to rural and poor schools across the state. This personal experience led me to complete a M.Ed. in Teaching, Learning, and Advocacy focused on GT policy, to pursue an Ed.D. in Curriculum and Instruction, and has deepened my interest in supporting teachers with resources for the GT learners in local communities who might otherwise be overlooked and may not achieve positive educational outcomes without support and customization. To provide myself with a more global educational perspective and in the efforts of furthering my research, I took a leave of absence in lieu of sabbatical, during which I served as a Visiting Fellow at the University of Buckingham and as a member of the Oxford Education Society, as well as a member of the New College Middle Common Room at the University of Oxford. These experiences allowed me to collaborate with a broad range of teachers and to delve deeper into the theoretical underpinnings of the study. The three schools that were part of the current study are located in rural areas of District X. The implementation of an online PLC was meant to increase collaboration and professional growth for teachers in those schools.
Purpose Statement

The purpose of this limited mixed design study was to discover the effects of implementing an online PLC for ELA teachers of 6th–8th grade GT students in three rural middle schools in SC’s District X. Since this research was to consider and refine an application and collect data during implementation, it is considered applied research. According to District X’s priority statement, a PLC was specifically defined as educators committed to working together to achieve better results for the students they serve and enhancing student achievement and teacher effectiveness. With alignment with District X’s priority, the online PLC supported the belief that the key to improved learning for students is continuous for all educators. Within the online PLC, TPs focused on learning, building a collaborative culture, and working toward results. The overall goal of this study was to improve learning for GT students through implementing an online PLC that allows teachers to build a community and effectively develop their knowledge of best practices for GT instruction specifically aligned with the GT curriculum. This collaboration would normally not have been possible, due to each teacher being the only GT teacher of the specific ELA course within his or her school. The more general purpose of this study was to continually develop a protocol and structure aimed at delivering authentic and personalized opportunities for learning and collaboration, specifically for GT instruction and training, online.

The current AR study focused on the implementation of an online PLC specifically for teachers of GT students. It was composed of quantitative measures incorporating descriptive statistics and measures of central tendency used to assess how implementation of the online platform affected collaboration and the professional growth of best practices for GT instruction, and the qualitative measures were used to enhance
the description of the study and further explain the quantitative findings. The qualitative measures incorporated guided and semi-structured interview questions as well as observations by the PR. While the overall goal of the problem in practice (PoP) was to improve learning for GT students, the research focused on building a community of learning online for teachers to improve their pedagogical knowledge of best practices for teaching GT learners in District X.

**Problem Statement**

**Research Question**

How does the implementation of an online PLC effect collaboration and professional growth for ELA teachers of 6th–8th grade GT students in three rural middle schools in SC’s District X?

**Hypothesis**

It was hypothesized that an online PLC would increase collaboration and professional growth for ELA teachers of 6th–8th grade GT students in three rural middle schools in SC’s District X.

**Research Objective**

The objective was to discover the effects on collaboration and professional growth after implementing online PLCs for ELA teachers of 6th–8th grade GT students in three rural middle schools in South Carolina’s District X.

The online PLC had clear expectations and objectives for TPs focused on collaboration, creating and refining lessons and assessments associated with units, participating in problem-solving, as needed, and growing through professional learning. The by-products of these objectives included refining knowledge and skill, identifying problems and solutions, focusing on best practices for GT, sharing resources, and
increasing knowledge of ELA curriculum. The overall goal was to improve learning for GT students through building a community of teachers online that continually developed their instruction of best practices for GT learners.

**Research Design**

The research design was a limited mixed design, including quantitative and qualitative measures. Specifically, the quantitative measure was a survey research design, as information was acquired via surveys. Although the responses were aggregated across all the participants and subgroups of participants, such as by school and grade level, the quantitative data were reported all together due to the small number of TPs (n=9). The qualitative data were collected through guided and semi-structured interview questions in order to elaborate on and further explain the quantitative findings. According to Mertler (2016), this type of research is best described as an explanatory mixed-methods design, as the quantitative data were collected first and the qualitative data were used to help support, explain, and elaborate on the quantitative results. The quantitative data and analysis provided the main focus for the overall study and the qualitative data provided a closer look at outliers (Mertler, 2017). The purpose of this research was to determine if online PLCs positively affect collaboration and professional growth focused on best practices for GT learners. A pre-implementation survey (Appendix B) was administered to teachers via Google Forms prior to beginning the online PLC and a post-implementation survey (Appendix C) was administered after 8 weeks of implementing the online PLC. These surveys (Appendix B and Appendix C) were used for a descriptive analysis of teacher perceptions of the implementation of an online PLC. The survey questions were aligned to collaboration and professional growth, as it was important to
keep the research focused to best answer the proposed question and address possible concerns of validity. Validity is essential to quantitative research and ensures that what is measured is what is intended to be measured, based on the focus of the study (Mertler, 2017). The research design also addressed concerns of reliability with a paired t test and reported p values. Furthermore, the PR tried to ensure quality of the qualitative data by member checking and allowing TPs to review transcripts of the interviews via Google Docs. Lastly, nominal items were included with the interviews to further ensure the quality of the research through multiple data-collection methods (Mertler, 2017).

**Quantitative Data**

Baseline data were collected through a Likert scale survey (Appendix B) before implementation to better measure changes and effects. After implementation, participants took a final summative Likert scale survey (Appendix C). Both surveys were analyzed through descriptive statistics, measures of central tendency, and measures of dispersion. “Descriptive statistics are simple mathematical procedures that serve to simplify, summarize, and organize” data (Mertler, 2017, p. 3360). TPs completed Likert scale surveys, so descriptive statistics were used through mean and median, and although the range was analyzed, only standard deviation was reported for measures of dispersion. The quantitative data allowed the PR to identify the effects of implementing an online PLC and the qualitative data were used to further describe the effects. Collaboration and professional growth were measured through quantitative measures and analyzed through descriptive statistical analysis. Descriptive statistics used measures of central tendency, such as mean and median as well as measures of dispersion, such as standard deviation.
The data collection methods were administered online through Google Forms computer software and analyzed through the use of Microsoft Excel Data Analysis tools.

The pre-implementation and post-implementation surveys each had a total of 18 statements with a Likert scale of four options ranging from 1 (strongly agree) to 4 (strongly disagree). Fifteen out of the 18 statements were comparable across both surveys. The mean, median, standard deviation, mean difference, degrees of freedom, and p value are all reported for the 15 items that were comparable. The 3 non-comparable items on the pre-implementation survey and the 3 non-comparable items on the post-implementation survey were also analyzed, using descriptive statistics, and the mean, median, and standard deviation for each. Since there were 15 dependent statistical tests being performed simultaneously on a single data set, a Bonferroni adjustment was performed to adjust the p value accordingly. The PR divided the starting significance or critical p value of 0.05 by the number of comparisons, 15, and therefore adjusted the critical p value to 0.003. This new critical p value or new comparison significance level was then used to perform a paired t test and report p values for the 15 comparable questions. During post-implementation, teacher-participants were given a nominal survey on which they marked all perceived advantages and disadvantages to the implementation of the online PLC. The nominal items were analyzed to report the most common to the least common perceived advantages and disadvantages of the online PLC.
Table 3.1

*Overall Design for Examining the Research Question*

<table>
<thead>
<tr>
<th>Construct to be Measured</th>
<th>Data Collection Method</th>
<th>Data Analysis</th>
<th>Data Concerns to Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components' Features of PLC Specifically for Gifted and Talented</td>
<td>Qualitative-Observations and semi-structured teacher interviews</td>
<td>Deductive Analysis- Interviews were conducted, transcribed, and coded via Google Docs and then analyzed using deductive analysis, which was based on the quantitative findings.</td>
<td>Accuracy Credibility Dependability</td>
</tr>
</tbody>
</table>

Results are presented in narrative form, using tables and figures.

Qualitative Data

The qualitative data were collected through guided and semi-structured interview questions to elaborate on and further explain the quantitative findings. The survey questions were aligned with topics of collaboration and professional growth, as it was necessary to keep the research focused to best answer the proposed research question. Interviews were conducted and transcribed via Google Docs and then analyzed using
deductive analysis, which was based on the quantitative findings. The TPs were assigned a code, which was used throughout the research, according to their school and grade level: AT6, AT7, AT8, BT6, BT7, BT8, CT6, CT7, and CT8. The schools were coded with the letters “A,” “B,” and “C,” while marked with “T” for teacher and then numerically with 6, 7, and 8 to indicate grade level. Therefore, the schools were referred to as School A, School B, and School C through the research. Quotes and observations, from the interviews were used to further describe the quantitative findings and were shared with the TPs for member checking before being reported.

**Description of Online Platform**

The research took place on an online platform, the classic form of Google Sites, a free structured wiki- and web page-creation tool offered by Google as part of Google Apps for Work productivity suite, and the district portal, which is maintained by the district’s technological instructors. The Google Site was shared with TPs via their district login for ease of access, and the link was posted on the district portal. Google was selected because all teachers have access to Google Apps through their district login. The PR set up a Google Site for each grade-level and included a homepage and 5 separate webpages for curriculum units, stems and vocabulary, grammar, technology, testing and warm-up resources. The homepage of the Google Site had each teacher of the specific ELA course listed by school, so teachers could easily see who taught the same course across the district. Teachers used the homepage to introduce themselves to each other and to the PR. Subpages were included under each webpage to allow for organization of materials and resources. For example, the webpage for curriculum units had six subpages for each of the six units and the technology webpage had a subpage for tips and tricks and another subpage for websites and online resources. Webpage and subpage titles were
informally discussed and recommended by TPs. The webpages were set up at the top level with the Web Page template provided by the classic form of Google Sites, while the subpages were set up under the webpages with the File Cabinet template provided by the classic form of Google Sites. The File Cabinet template allowed for resources and materials to be more easily shared via file, link, or from Google Drive, as well as allowing for organization into different folders on the subpages. Both the webpages and subpages allowed for TPs to comment and discuss topics, as needed. The PR used the comments on each page to communicate and interact with TPs during the implementation.

**Conclusion**

In essence, this AR study was implementing a plan, reflecting on the outcome, making a new plan based on the reflection, and then implementing another plan and reflecting again. It is a continuous cycle that involves deep reflection at each stage. “Professional reflection is an important component to [the analysis of results] step in the process” of AR (Mertler, 2017, p. 3987). The TPs engaged in reflective practices to see where the research had taken them, to see what they had learned, and to see where the research will continue to take them as they move forward (Mertler, 2017). The research was well-organized and precisely planned in order to deliver more reliable and valid results. Reflection led to making significant conclusions more solid and was used while analyzing results and moving forward as well as being used throughout the research at every step and after the research was completed as part of a retrospective examination. The PR utilized the ideas and specific questions recommended by Mertler (2016) while reflecting on the overall research question and methodology of the action research plan. Retrospectively analyzing a past research implementation can always lead to new and
innovative ideas for future research, as Mertler (2016) points out, hindsight usually allows for sharper thinking. Reflecting on the research while it unfolded allowed for deeper analysis and allowed for rational adjustments to be made with a purpose. Reflecting during the results stage allowed for a better plan of the next steps, and retrospectively, reflecting inspired more advanced studies for the future.
CHAPTER 4
FINDINGS AND INTERPRETATION OF RESULTS

Introduction

The purpose of Chapter 4 is to present the findings and interpretation of the results that were analyzed within the limited mixed action research paradigm. Quantitative measures were a survey research design, as information was acquired via surveys. Qualitative data were collected through guided and semi-structured interview questions to elaborate on and further explain the quantitative findings. The quantitative data are presented first to directly answer the research question and describe the effects of implementing an online professional learning community (PLC) for teachers of gifted and talented (GT) students; qualitative data are presented second to further describe the effects of the implementation. A pre-implementation survey and a post-implementation survey were administered to participants via Google Forms and the results were analyzed using Microsoft Excel Data Analysis tools. Interviews were conducted and transcribed via Google Docs and then analyzed using deductive analysis, which was based on the quantitative findings.

The nine TPs were from three different schools and taught across three different grade levels. Therefore, each school in the study had one teacher from each grade level. The teachers ranged in experience from a first-year teacher to veteran teachers of more than 20 years and were selected due to their geographic location in or near a rural area and the fact they are the sole teachers of their GT ELA courses on their campuses. For the
purposes of this research study, a rural area is identified by the school district. Two of the
schools are located within a national forest and the third school is less than five miles
from the national forest. The TPs were assigned a code, which was used throughout the
research, according to their school and grade level: AT6, AT7, AT8, BT6, BT7, BT8,
CT6, CT7, and CT8. The schools in the study are referred to as School A, School B, and
School C. The researcher-participant visited each school at least two times, with the first
time to explain the online platform and administer the pre-implementation survey. After
eight weeks of implementation of the online PLC, the researcher-participant visited each
school again to administer the post-implementation survey and conduct interviews with
each of the TPs.

The objective of the research questions was to discover the effects on
collaboration and professional growth after implementing online PLCs for ELA teachers
of 6th-8th grade GT students in three rural middle schools in SC’s District X. The
qualitative data were collected through guided and semi-structured interview questions to
elaborate on and further explain the quantitative findings. The survey questions were
aligned with topics of collaboration and professional growth, as it was necessary to keep
the research focused to best answer the proposed question. It was hypothesized that an
online PLC would increase collaboration and professional growth for ELA teachers of
6th-8th grade GT students in three rural middle schools in SC’s District X. The overall
goal was to improve learning for GT students through building an online community, in
which teachers could collaborate and continually develop their instruction of best
practices for GT learners.
The pre-implementation and post-implementation surveys each had a total of 18 statements with a Likert scale of four options ranging from 1 (strongly agree) to 4 (strongly disagree). Fifteen out of the 18 statements were comparable across both surveys, as seen in Table 4.1. The responses for the 3 statements, in the pre-implementation survey that are not comparable can be found in Table 4.3 and the 3 statements in the post-implementation survey that are not comparable can be found in Table 4.4.

Table 4.1

*Pre-Survey and Post-Survey Question Comparison*

<table>
<thead>
<tr>
<th>Topic</th>
<th>Pre-Survey</th>
<th>Post-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>GT Planning</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Time</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Confidence</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Enthusiasm</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Effective Time</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Growth</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Weekly</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Monthly</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Processing</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Differentiation</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Curriculum</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Solving</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Resources</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>

*Note:* The pre-survey questions can be found in Appendix B and the post-survey questions can be found in Appendix C.

The pre-implementation and post-implementation survey results are reported together, in Table 4.2, so they can more easily be compared for the questions that mirror
each other from one survey to the next. Table 4.2 displays mean, median, standard deviation, mean difference, degrees of freedom, and p value. The three questions from the pre-survey that are non-comparable to the post-survey are reported in Table 4.3, and the three questions from the post-survey that are not comparable with the pre-survey are reported in Table 4.4. Tables 4.3 and 4.4 display mean, median, and standard deviation, but do not display mean difference or p value, as they were noncomparable items. It is important to note that higher values mean less agreement from the TPs, as strongly agree is represented by 1 and strongly disagree is represented by 4. Nominal items for the advantages of the online PLC are reported in Table 4.5 and the nominal items for the disadvantages of the online PLC are reported in Table 4.7. In addition to showing percentages of each response for nominal items in Tables 4.6 and 4.8, an “X” marks advantages or disadvantages selected by each TP in Tables 4.5 and 4.7, so patterns can be easily displayed.

Interview questions were shared with TPs via Google Docs and the researcher-participant recorded and typed the interview, as TPs answered. Each response was reviewed with the TP and approved or clarified before being accepted by the researcher-participant. Responses were shared with TPs to ensure the PR represented their ideas accurately. Transcriptions of the interviews were then deductively analyzed to further explain and describe the quantitative data and quotes from the TPs were reported alongside the quantitative findings.

**Findings and Interpretations of Results of the Study**

The survey results indicated that 6 items have a statistically significant difference (p < 0.003) from the online PLC include:
Item 1 (pre) / Item 4 (post): I regularly attend/participated in a (face-to-face/online) PLC.

Item 3 (pre) / Item 6 (post): I (regularly/was able to) plan with at least one other teacher who teaches the same grade-level and GT content.

Item 10 (pre) / Item 11 (post): I am growing/grew professionally, in best practices for GT, by participating in my current face-to-face (online) PLC.

Item 15 (pre and post): Differentiation strategies specifically aligned to the needs of GT students are regularly discussed during (my current face-to-face/the online) PLC.

Item 16 (pre and post): GT curriculum (is/was) discussed during (my current face-to-face/the online) PLC.

Item 18 (pre and post): Participating in (my current face-to-face/the online) PLC provides me with resources aligned to the GT curriculum.

The only two items to have a negative mean difference were on topics of participation and confidence, which means participation and confidence did not increase with the implementation of the online PLC. Confidence will be discussed later in the chapter. TPs noted that participation in their face-to-face (ftf) PLCs was mandatory, while participation in the online PLC was voluntary. This is further explained with the interviews, as TPs noted they often forgot about the online PLC, as it had not been part of their normal routine since the beginning of the school year. For example, when the researcher-participant asked, “What, if any, were the challenges of the online PLC?” AT6 responded, “Time was a challenge, as [I] just ran out of time, which was mainly due to
the end of the year and extra responsibilities [and] just having it at the beginning of the year would help.” AT8, from the same school, stated,

I think I will like it better next year because it will allow me to plan for next year at the beginning. I was already past some of the items that were posted and it was therefore not as helpful at the time. Also, the end of the year is hectic, as we had testing, end-of-course exams, field day, recommendations to complete, promotion ceremony, Read-to-Succeed courses, and had to complete final grades.

BT6 mentioned how she did not add any items because she was behind her pacing at the end of the year but “would definitely add things next year.” And in response to the same question, BT7 stated,

Participation was a challenge, but I think this had to do with the fact it was at the end of the year. It would have been different if it would have been at the beginning of the year when I was still planning my units and not when I was finishing them.

Lastly, CT7 stated,

Not having the site from the start of the year was a challenge. I would have liked to have it at the beginning of the year, so that it becomes habit. I plan on using the site next year, especially because every year I do something different and I never do the same thing. I look forward to getting new ideas from the sites and using it to plan something different.

Another common theme that emerged throughout the interviews regarding participation was the TPs’ confidence to post, share, and collaborate. This topic will be discussed later in the chapter.
The two items with the largest mean difference were items about curriculum and resources, with a corresponding mean difference of 2.22 and 2.44. The mean is reported as the arithmetic average of the results from the pre-implementation and the post-implementation. The mean is a “measure of central tendency, [which is a] statistical procedure that indicate[s], with a single score, what is typical or standard about a group of individuals” (Mertler, 2017, Location 3360). This translates to the notion that the greatest change between the pre- and post- were seen in curriculum and resources. These two topics had the lowest standard deviation, which is a measure of dispersion. “Where measures of central tendency indicate what is similar or typical about a group, measures of dispersion indicate what is different within a group of scores” (Mertler, 2017, Location 3403). This indicates that the TPs were most consistent across the group regarding their responses about curriculum and resources. In fact, each TP mentioned curriculum and/or resources as benefit of the online PLC. TPs mentioned curriculum and/or resources in response to multiple questions during the interview, as seen in their responses.

In response to Question 1, *How was it, as a teacher, to participate in an online PLC?* AT6 stated, “I enjoyed it and felt like I could benefit from what works with other people, and I could share resources, so I could spend more time to tweak things instead of spending time looking for resources or making them.”

In response to Question 4, *Describe the perceived benefits and/or drawbacks, as a teacher, for participating in an online PLC*, AT6 stated,
Table 4.2

*Paired t-test and Descriptive Statistics for Pre- and Post-survey Comparison (N=9)*

<table>
<thead>
<tr>
<th>Questions</th>
<th>Surveys</th>
<th>M</th>
<th>SD</th>
<th>Mdn</th>
<th>Mean Diff.</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 1 (pre) / Item 4 (post): I regularly attend/participated in a (face-to-face/online) PLC.</td>
<td>Pre</td>
<td>1.00</td>
<td>0.00</td>
<td>1</td>
<td>-1.89</td>
<td>8</td>
<td>0.0003</td>
</tr>
<tr>
<td>Post</td>
<td>2.89</td>
<td>0.93</td>
<td>3</td>
<td></td>
<td>0.89</td>
<td>8</td>
<td>0.0207</td>
</tr>
<tr>
<td>Item 2 (pre) / Item 5 (post): (My current/the online) PLC (is/was) effective.</td>
<td>Pre</td>
<td>2.33</td>
<td>1.19</td>
<td>2</td>
<td>1.78</td>
<td>8</td>
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</tr>
<tr>
<td>Post</td>
<td>1.44</td>
<td>0.53</td>
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<td></td>
<td>-0.22</td>
<td>8</td>
<td>0.5588</td>
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<tr>
<td>Item 3 (pre) / Item 6 (post): I (regularly/was able to) plan with at least one other teacher who teaches the same grade-level and GT content.</td>
<td>Pre</td>
<td>3.78</td>
<td>0.67</td>
<td>4</td>
<td>1.22</td>
<td>8</td>
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<td>1.00</td>
<td>2</td>
<td></td>
<td>1.00</td>
<td>8</td>
<td>0.0531</td>
</tr>
<tr>
<td>Item 4 (pre) / Item 7 (post): I feel my time (is/was) well spent in (my current face-to-face/the online) PLC.</td>
<td>Pre</td>
<td>2.56</td>
<td>1.01</td>
<td>2</td>
<td>1.22</td>
<td>8</td>
<td>0.0100</td>
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<td>Post</td>
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<td>0.50</td>
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<td></td>
<td>1.78</td>
<td>8</td>
<td>0.0022</td>
</tr>
<tr>
<td>Item 5 (pre) / Item 8 (post): I feel confident in my ability to add value to (my current face-to-face/the online) PLC.</td>
<td>Pre</td>
<td>1.89</td>
<td>0.93</td>
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<td>8</td>
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<td>1.00</td>
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<td>0.0531</td>
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<td>Item 6 (pre) / Item 9 (post): I (am/felt) enthusiastic about participating in (my current face-to-face/the online) PLC.</td>
<td>Pre</td>
<td>2.33</td>
<td>1.19</td>
<td>2</td>
<td>1.22</td>
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<td>0.50</td>
<td>1</td>
<td></td>
<td>1.78</td>
<td>8</td>
<td>0.0022</td>
</tr>
<tr>
<td>Item 7 (pre) / Item 10 (post): Time is/was effectively spent in my current face-to-face (the online) PLC.</td>
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<td>1.01</td>
<td>2</td>
<td>1.22</td>
<td>8</td>
<td>0.0100</td>
</tr>
<tr>
<td>Post</td>
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<td>0.50</td>
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<td></td>
<td>1.78</td>
<td>8</td>
<td>0.0022</td>
</tr>
<tr>
<td>Item 10 (pre) / Item 11 (post): I am growing/grew professionally, in best practices for GT, by participating in my current face-to-face (online) PLC.</td>
<td>Pre</td>
<td>3.44</td>
<td>0.88</td>
<td>4</td>
<td>1.78</td>
<td>8</td>
<td>0.0022</td>
</tr>
<tr>
<td>Post</td>
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<td>0.50</td>
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<td>1.22</td>
<td>8</td>
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Table 4.2 (continued)

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<th>Questions</th>
<th>Surveys</th>
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<th>SD</th>
<th>Mdn</th>
<th>Mean Diff.</th>
<th>df</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>Item 12 (pre and post): I collaborate weekly or bi-weekly with other gifted and talented teachers.</td>
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<td>0.78</td>
<td>8</td>
<td>0.0653</td>
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<td>0.78</td>
<td>3</td>
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<td></td>
</tr>
<tr>
<td>Item 13 (pre and post): I collaborate monthly with other gifted and talented teachers.</td>
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<td>8</td>
<td>0.0158</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>0.73</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 14 (pre and post): I have/had enough processing time during my current face-to-face (the online) PLC to add value to conversations.</td>
<td></td>
<td>0.44</td>
<td>8</td>
<td>0.2721</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>3.00</td>
<td>1.12</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
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<td>2.56</td>
<td>1.13</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Item 15 (pre and post): Differentiation strategies specifically aligned to the needs of GT students are regularly discussed during (my current face-to-face/the online) PLC.</td>
<td></td>
<td>1.78</td>
<td>8</td>
<td>0.0012</td>
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<td></td>
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<tr>
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<td>0.78</td>
<td>2</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Item 16 (pre and post): GT curriculum (is/was) discussed during (my current face-to-face/the online) PLC.</td>
<td></td>
<td>2.22</td>
<td>8</td>
<td>0.0003</td>
<td></td>
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<td>0.73</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>1.22</td>
<td>0.44</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 17 (pre and post): Problem solving for issues concerning GT students (takes/took) place during (my current ftf/the online) PLC.</td>
<td></td>
<td>1.56</td>
<td>8</td>
<td>0.0033</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
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<td>0.53</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post</td>
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<td>1.00</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 18 (pre and post): Participating in (my current face-to-face/the online) PLC provides me with resources aligned to the GT curriculum.</td>
<td></td>
<td>2.44</td>
<td>8</td>
<td>0.0001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>3.56</td>
<td>0.73</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>1.11</td>
<td>0.33</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*M = mean, SD = standard deviation, Mdn = median, df = degrees of freedom
*p < 0.003
Sharing resources is great. It is great for new teachers or seeing things that are not working. You can work smarter and not harder. [Resources were] stored and organized, so I [didn’t] have to go searching for things in the Google Drive, as they are all right on the site on separate pages for units.

In response to Question 2, *Describe what it was like, in regards to collaboration, participating in the online PLC*, AT6 stated,

I feel like the online PLC may not have been as much about conversing as for sharing resources. I would like to continue to share items and have other people share items.

In response to Question 4, *Describe the perceived benefits and/or drawbacks, as a teacher, for participating in an online PLC*, AT6 mentions resources again and stated, “It is good to connect resources from other teachers.”

Finally, in response to Question 3, *Was participating in the online PLC different from face-to-face PLCs? If so, how?*, AT6 mentions curriculum one last time and states,

I think the online PLC is more catered to what I need to be doing for the curriculum, and the face-to-face PLC is more catered to school needs and not curriculum needs. Also in my ftf PLC, we mainly discuss strategies for lower achieving students and a broad spectrum of looking at pacing.

In response to Question 2, *Describe what it was like, in regards to collaboration, participating in the online PLC*, AT8 stated,

I got to see some items and resources from other teachers…I like the idea of taking, adding, and also commenting or asking questions. Getting feedback is also
very helpful. The ability to comment and ask questions [about the resources] is awesome.

In response to Question 4, *Describe the perceived benefits and/or drawbacks, as a teacher, for participating in an online PLC*, AT8 mentions collaboration and the sharing of resources again by stating,

> It was beneficial to have a variety of different things to choose from. For example, you may have posted one thing on character development and another teacher posted a different strategy on character development. It was great to have multiple resources and strategies to peruse on the same skill or topic.

During the interview, AT8 mentioned how she holds a master’s degree in gifted education and would like to expand the curriculum portions of the online PLC to include professional development. She stated,

> I don’t feel like the way we do GT is correct. I feel like we mainly give them more difficult work instead of giving them true GT work. From my experience, GT should be about exploratory and building creative skills. There is so much put into the units, and a lot of it is just giving more and harder and not truly differentiating. Also, sometimes GT students need some scaffolding because they do not always come to us ready for this type of curriculum. I wish there was more time for the enrichment piece.

**Researcher-Participant:** *Would you be interested in sharing your knowledge, perhaps through a PD page on the site?*

**TP:** I would like that and would add to it. For my masters, we had to think about an enrichment camp and sessions, and at the end, we got everyone’s ideas. I have binders and would love to share information about Talents Unlimited, which is basically about thinking skills for GT. I wish I could do all of
the stuff that I know, such as the synectics - thinking method. It is different lessons or skills, such as analogies and creative problem-solving skills.

Researcher-Participant: I appreciate your enthusiasm to share your knowledge with others. Is there anything I did not ask you that you want me to know about this?

TP: I think it would be a good idea to add enrichment centers for each unit to have for students to work on when they finish or as an enrichment time for the whole class.

At School B, teachers continued to mention curriculum and resources in their responses to multiple questions. In response to Question 1, How was it, as a teacher, to participate in an online PLC?, BT6 stated,

It was a positive experience in that resources were readily available, and it influenced me with thought-provoking activities that I could pull from it. It also provided different strategies to use. I had ideas that were similar to the resources or strategies that were posted or that someone recommended, but the site helped them solidify and supported me in developing the ideas further.

In response to Question 2, Describe what it was like, in regards to collaboration, participating in the online PLC, BT6 continued to mention collaboration and the broadening of ideas via the online PLC, as she stated,

Collaborating online would allow teachers in different schools to combine ideas and would allow you to teach things differently, as you could get new ideas and would allow you to broaden ideas, especially if you are new to the district or to teaching in general. I think it creates an awesome resource bank. I think I could also build materials with someone as well as just sharing and then reflecting with each other on what went well and what needs revamping and or modifying.
Finally, in response to Question 5, *Do you feel that the online platform was conducive to collaboration and professional growth? If so, how? If not, why?*, BT6 elaborates on collaboration one more time and states,

Yes, the online platform was conducive to collaboration because Google Sites allows you to share files, links, videos, lessons, assessments, and leave comments. I also believe it could be used for professional growth. For example, if I had time to go into my classroom to work or a specific time to work on a specific goal during a planning, it would allow me to grow professionally by seeing what others had shared, finding resources, or making resources to share.

At the same school, and in response to Question 3, *Was participating in the online PLC different from face-to-face PLCs? If so, how?*, BT7 mentions how curriculum is not part of her face-to-face PLC and stated,

Face-to-face PLCs don’t usually relate to content specific. I haven’t talked about GT ELA curriculum one time in my face-to-face PLC and that it [is] the primary focus of the online PLC. The online PLC is content-specific and GT-specific and that is not something I get during my face-to-face PLC.

In response to Question 4, *Describe the perceived benefits and/or drawbacks, as a teacher, for participating in an online PLC*, BT7 mentions resources one more time and stated,

One of the benefits to the online PLC was gaining a variety of resources from teachers across the district who teach the same content.

In response to Question 1, *How was it, as a teacher, to participate in an online PLC?*, BT8 stated,
Mainly, I used the materials and resources. I was probably logging on to the online PLC about 2-3 times a week.

In response to Question 3, *Was participating in the online PLC different from face-to-face PLCs? If so, how?*, BT8 elaborates more on how he used the online PLC mainly for resources and stated,

Yes, it was different because sometimes face-to-face is all talking but not as much of sharing the resources, as teachers often forget to email. It was instant and at your own time instead of at one set time.

Furthermore, in response to Question 4, *Describe the perceived benefits and/or drawbacks, as a teacher, for participating in an online PLC*, BT8 stated,

Benefits would be flexible time frame, instant collaboration, unlimited resources and opportunities, ability to reach more teachers.

At School C, in response to Question 2, *Describe what it was like, in regards to collaboration, participating in the online PLC*, CT6 stated,

I definitely think the online PLC helps with collaboration. Especially because I do not have another teacher on my campus to collaborate with of my same content and grade. It was great being able to share resources and not have to do everything on my own and benefit from new and fresh ideas from younger teachers. I think new teachers may be learning new things in university which is helpful to me, as it has been 35 years since I have been in education courses. I feel like I could learn from just simple ideas that new teachers get from courses, but also veteran teachers and their pearls of wisdom.
In response to Question 4, *Describe the perceived benefits and/or drawbacks, as a teacher, for participating in an online PLC*, CT6 gives a recommendation about resources by stating,

> I would like for there to be more of the supporting documents and resources and ideas and strategies that were used with each unit. If each teacher were to add something, then we would have a lot more resources to select from and modify for our teaching. If the district were to add more items, that would be great. For example, if the coordinator shared something with one teacher, then they could add the idea to the site and everyone would benefit from that one conversation.

In response to Question 3, *Was participating in the online PLC different from face-to-face PLCs? If so, how?*, CT7 stated,

> The online PLC was different because it was more about learning as a community and not just following a form. I don’t know when ftf PLCs became more about following a form and bringing data than about curriculum and instruction. Sometimes the ftf PLCs are not as helpful; the online PLC had more about content and resources. Looking at data every week in the ftf PLC with no talk about the curriculum and content and connecting the learning to the data isn’t very helpful. I like how the online PLC was more about content.

In response to Question 1, *How was it, as a teacher, to participate in an online PLC?*, CT8 stated,

> I thought it was a pretty good idea to have the online interaction with other teachers. And it offered me more resources, which is a good thing, as I am so by
myself. There are not other 8th grade English teachers, so it was very beneficial to see what other teachers were doing at other schools.

Lastly, in response to Question 4, *Describe the perceived benefits and/or drawbacks, as a teacher, for participating in an online PLC*, CT8 explains how collaboration and the sharing of resources is beneficial by stating,

> There are so many tools and resources there that can be used, and I think it makes me better because I can offer my students a variety of exercises to understand the concept that I am teaching. It is helpful in thinking about multiple ways to teach learners who learn in a variety of ways.

Overall, TPs greatly utilized the online PLC to share and collect resources from other teachers across District X.

All topics indicated a positive mean difference apart from participation and confidence. Again, it is important to note that this is due to higher numbers meaning less agreement to the study because 1 indicates strongly agree and 4 indicated strongly disagree. Confidence resulted in a decrease of 0.22 in mean difference and had the highest $p$ value with 0.28. Although an interview question never directly asked about confidence, a theme of confidence issues emerged throughout the analysis of interviews. Different rationalizations were offered for the reason TPs lacked confidence in posting or sharing items during the online PLC. One confidence issue was due to the fear of scrutiny by other teachers or district officials, while another confidence issue was due to not being able to put a face or personality to the name, and yet another had to do with lack of technological training. Confidence issues could be addressed by implementing a blended
model that incorporates both ftf and online PLCs and perhaps focusing more on building relationships among teachers in the PLC.

Although only one TP mentions the word confidence, at least six TPs allude to confidence issues in their responses to questions. For example, AT6 mentions she is “hesitant on giving certain feedback, as [she] does not feel [she] has ownership of the site.” She goes on to discuss how she did not want her comments to be public and wonders if it would be okay to have private chats on the online PLC, so she would feel more comfortable. AT7 mentions how she “would like to ask questions, but would not feel comfortable giving feedback or commenting on a resource because of personality and not wanting to offend anyone.” AT8 seemed confident throughout her interview but stated that she “was hesitant to upload anything, as [she] was unsure of what to share and what not to share.” BT7 mentions she is a first-year teacher and therefore did not add much to the site. She continues to state that “[she] feel[s] like instructional coaches are the gurus and it may be beneficial to have them participate more in the PLC and add items and give feedback.” It is important to note that the researcher-participant is an instructional coach and that the TP was aware of this when making the statement. Although BT8 was not a first-year teacher, he did state that it was his “first year teaching the course, and [he] was not as comfortable creating and sharing resources.” BT8 also went on to mention that, “with anything that is online, everything is open to interpretation. So, if you have questions or want to say something, meaning can sometimes get lost.” This may have also been a rationalization for a confidence issue in posting comments or questions during the online PLC. Out of the three schools in the study, School C seemed to have the most concern with confidence while participating in
the online PLC. It is important to note that School C is the most rural of the three schools and is the furthest from the District Office and therefore a bit more isolated from the rest of the schools in District X. CT6 made the following statements, which the researcher-participant associated with issues of confidence:

I did not add anything to the site and probably won’t because I am scared of sharing my own work for fear of scrutiny. I even worry when I am posting or emailing because I want to make sure things are perfect before posting.

Sometimes, I don’t have time for perfection in the teaching profession.

CT7 made the following statements, which the researcher-participant associated with issues of confidence:

I didn’t upload things sometimes because I felt like my ideas are something that everyone already does. I worry that my feedback may hurt people’s feelings, so collaboration is tricky on the site. There are people I feel comfortable commenting on and others that I think it would hurt their feelings.

CT8 made the following statements, which the researcher-participant associated with issues of confidence:

I was reluctant to leave a comment, as I was concerned I was the only one who had this feeling. I would like to be able to leave a private comment.

I didn’t add anything, but I almost did and was unsure. Later, I saw that someone else added the same thing I was going to add. I commented at least once on the site.
I would have liked to have more information about how to use some of the resources with students, but I was always nervous about leaving a comment. Perhaps it would help, if I could ask my question to one individual instead of the whole community, so I feel more confident in commenting or I feel like more people are having the same issue.

Out of the remaining topics listed in Table 4.2, effective time stands out the most, as it has a fairly large mean difference of 1.22 with a $p$ value of 0.0054, which shows that there is both a change from the implementation. It also has a standard deviation of 0.50, which is a lower reported SD on Table 4.2 and shows that participants did not differ as much among their responses to that statement on the post-implementation survey. The effective time question on the survey stated, “Time was effectively spent in the online PLC,” so with a positive mean difference, the survey results indicate that TPs feel time is more effectively spent in the online PLC versus the ftf PLC. AT8 states,

> When you have a ftf PLC…everyone has to be on the same page at the same time and sometimes [she] is not at the same place as the other teachers, so the online PLC is beneficial to being able to go at your own pace.

This may be one of the reasons that the online PLC is perceived to be more effective, as it is asynchronous and allows everyone to utilize their time according to their specific needs at the moment. According to BT8, ftf and online PLCs differ because “Sometimes face-to-face [PLCs are] all talking, but not as much of working or sharing resources.” She goes on to say that she liked that the online PLC “was instant and at your own time instead of at one set time.” AT7 mentioned time in response to the PT asking about perceived benefits and/or drawbacks to participating in the online PLC. AT7 stated
that timing was a benefit to the online PLC, as she “didn’t have to do it at the same time
during the week each time and [could] check it when needed or possible.” From these
comments, the researcher-participant associated time effectiveness closely tied with
flexible time allotment, as it seemed TPs felt their time was more effectively spent when
they were given the flexibility of time and could cater the PLC to their specific needs.
Effectiveness and effective time seemed to mirror each other in the survey results for
both the pre-implementation and post-implementation with roughly the same measures of
central tendency and only slightly different measures of dispersion with effective time
having a 0.33 higher mean difference than overall effectiveness. Interestingly, the mean
difference between the ftf and online PLC survey results for the question on processing
time only varied by 0.44. The question, on the pre-implementation or ftf PLC survey
stated, “I have enough processing time during my current face-to-face PLC to add value
to conversations” and the question, on the post-implementation or online PLC survey
only changed slightly to, “I had enough processing time during the online PLC to add
value to conversations.” The comments suggest that the processing time would have
increased more on the post-survey, but it increased less than 0.50. Processing time would
be an interesting topic to investigate further and to clarify in the research.

From the data displayed in Table 4.2, it appears that TPs feel more enthusiastic
about participating in the online PLC in comparison to the ftf PLC, as the mean went
from 2.33 to 1.33 and the lower the number indicates a trend more to the selection of
strongly agree. Also, collaboration with other GT teachers, both weekly and monthly
increased by a mean of 0.78 and 1.22, respectively. The notion of collaboration among
GT teachers may need to be examined further, especially since it is a primary aspect of the overall research question being examined in this study.

Out of the 18 questions on the pre-implementation and post-implementation surveys, only 3 questions per survey did not mirror a question from the other survey. Tables 4.3 and 4.4 display the data from these non-comparative questions. Table 4.3 displays the non-comparative pre-implementation survey data from TPs with the percentage selected for each response. There was a rather equitable dispersion of responses on both ends of the Likert scale in response to the question of collaboration issues due to time restraints or mileage. This may be due to the two aspects being in the same question and may require further investigation to narrow the collaboration issues reported. TPs’ desire to collaborate with other teachers of the same grade level and GT content, as indicated with responses more toward strongly agree with 0 TPs indicating strongly disagree. The only non-comparative question to have a total agreement among TPs was with time issues associated with meeting with teachers of same grade level and GT content. One-hundred percent of TPs strongly agreed there are time issues related to meeting with other GT teachers, as seen by the mean of 4.00 with a $SD$ of 0.00, so it may be worth investigating further.

Although TPs did not agree 100% on any of the non-comparative post-implementation survey questions displayed in Table 4.4, there are trends toward strongly agree and agree for all questions. The researcher-participant reviewed the responses of each TP and found that BT6 was the only one to select disagree or strongly disagree for a response to the three questions in Table 4.4.
Table 4.3

Non-Comparative Pre-Implementation Survey Data from Teacher-Participants

<table>
<thead>
<tr>
<th>Questions</th>
<th>M</th>
<th>SD</th>
<th>Mdn</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. I have not been able to make meetings focused on GT because of time restraints or mileage.</td>
<td>2.44</td>
<td>1.33</td>
<td>2</td>
</tr>
<tr>
<td>9. I would like to collaborate with other teachers who teach the same grade-level and GT content.</td>
<td>1.56</td>
<td>0.88</td>
<td>1</td>
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<tr>
<td>11. I can easily find time to meet with teachers of my same grade-level and GT course.</td>
<td>4.00</td>
<td>0.00</td>
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</tr>
</tbody>
</table>

*M = mean, SD = standard deviation, Mdn = median*

Interestingly, BT6 selected strongly disagreed to the online PLC being a positive experience but then responded strongly agree to the online PLC being beneficial. In response to the interview question, “How was it, as a teacher, to participate in an online PLC?,” BT6 stated, “It was a positive experience in that resources were readily available, and it influenced me with thought-provoking activities that I could pull from,” but later, in response to challenges of the online PLC, stated,

There were some instances where I would prefer having a ftf conversation, so that was a challenge. I like the socializing aspects and found it harder to build a relationship with other teachers just online.

The preference for social interaction may have been a reason for the discrepancy in the responses of BT6, and it is also a rationale for a blended model rather than a solely online model. It is also important to note that BT6 selected 12 out of 12 nominal items for advantages to the online PLC. All participants, with the exception of BT6, indicated they strongly agreed with the desire to continually participate in the online PLC. This indication is a rationale to continue with the online PLC, but leads the researcher-
participant to examine how to best improve the online PLC implementation for the action plan.

Again, it is important to note in Table 4.4 that the lower means indicate a higher agreement. This indicates that the TPs, overall, had a positive experience, found the online PLC beneficial, and would participate in another online PLC. Almost all participants mentioned their interest to continually participate in the online PLC throughout the summer and next school year.

Table 4.4

Non-Comparative Post-Implementation Survey Data from Teacher-Participants

<table>
<thead>
<tr>
<th>Questions</th>
<th>M</th>
<th>SD</th>
<th>Mdn</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I had a positive experience with the online professional learning community (PLC).</td>
<td>1.67</td>
<td>1.00</td>
<td>1</td>
</tr>
<tr>
<td>2. I found the online PLC beneficial to me as a teacher.</td>
<td>1.22</td>
<td>0.44</td>
<td>1</td>
</tr>
<tr>
<td>3. I would participate in another online PLC.</td>
<td>1.22</td>
<td>0.67</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note: M = mean, SD = standard deviation, Mdn = median

In addition to pre-implementation and post-implementation surveys, TPs were given a set of nominal items to select all of the advantages and all disadvantages of the online PLC implementation. The researcher-participant provided a list of items to select from and also allowed for participants to add their own perceived advantages or disadvantages to the list. Table 4.5 displays the perceived advantages of the online PLC with an “X” next to the participant code for each of the nominal items selected. The corresponding nominal item selections are listed in the notes below both tables. It is obvious by glancing at Table 4.5 and Table 4.7, TPs perceive more advantages than disadvantages when it comes to the implementation of the online PLC. The only nominal
items to be indicated by all TPs as an advantage was the broadening repertoire of strategies.

Table 4.5

*Advantages that apply to the online PLC*

<table>
<thead>
<tr>
<th>Participant Code</th>
<th>Item #1</th>
<th>Item #2</th>
<th>Item #3</th>
<th>Item #4</th>
<th>Item #5</th>
<th>Item #6</th>
<th>Item #7</th>
<th>Item #8</th>
<th>Item #9</th>
<th>Item #10</th>
<th>Item #11</th>
<th>Item #12</th>
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<tr>
<td>BT7</td>
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</table>


Table 4.6 ranks the advantages indicated by TPs from most to least commonly selected. A broadened repertoire of strategies and an increased number of resources were the most perceived advantages to the online PLC. Seventy-eight percent of TPs selected flexible time allotment, breadth of ideas, having thought time, knowledge gained, and growth as a teacher as advantages. The advantages least common, with less than half of
TPs indicating them, are social networking, asynchronized meetings, skills gained, and personality conflicts negated.

Table 4.6

*Most to Least Common Advantages that Apply to the Online PLC*

<table>
<thead>
<tr>
<th>Advantages to Online PLC</th>
<th>Number of Participants that Selected</th>
<th>Percent of Participants that Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broden repertoire of strategies</td>
<td>9</td>
<td>100%</td>
</tr>
<tr>
<td>Increased number of resources</td>
<td>8</td>
<td>89%</td>
</tr>
<tr>
<td>Flexible time allotment</td>
<td>7</td>
<td>78%</td>
</tr>
<tr>
<td>Breadth of ideas</td>
<td>7</td>
<td>78%</td>
</tr>
<tr>
<td>Having thought time</td>
<td>7</td>
<td>78%</td>
</tr>
<tr>
<td>Knowledge gained</td>
<td>7</td>
<td>78%</td>
</tr>
<tr>
<td>Growth as a teacher</td>
<td>7</td>
<td>78%</td>
</tr>
<tr>
<td>Ability to revise</td>
<td>5</td>
<td>56%</td>
</tr>
<tr>
<td>Social networking</td>
<td>4</td>
<td>44%</td>
</tr>
<tr>
<td>Asynchronized meetings</td>
<td>4</td>
<td>44%</td>
</tr>
<tr>
<td>Skills gained</td>
<td>4</td>
<td>44%</td>
</tr>
<tr>
<td>Personality conflicts negated</td>
<td>4</td>
<td>44%</td>
</tr>
</tbody>
</table>

Although, increased number of resources was close to having 100%, CT7 did not identify it as an advantage of the online PLC. Upon examination of the interview responses with CT7, the researcher-participant noticed that it was indeed not resources that CT7 utilized from the online PLC, but ideas. In response to the question of describing the perceived benefits and/or drawbacks of participating in the online PLC, CT7 stated,
It was beneficial to have a wealth of ideas that may not have been thought about before. Some of the ideas that I got from another teacher at another school were very helpful and some of the ideas that I got off of the site, I had to pay for before, from Teachers-Pay-Teachers, but they were on the PLC site for free.

In response to the second part of the question, CT7 stated,

Technology knowledge is definitely a drawback for me. I am getting better everyday, but I have been teaching for over 18 years, and it has been difficult learning new technology every year and time. I have to work on a computer a lot to learn it, and time is already very unlimited.

CT7 noted lack of technological training as a disadvantage to the online PLC, and it may explain the absence of selecting resources as an advantage. In contrast to the ideas, which were easily visible and posted on the site, the resources were housed on file cabinet webpages on the site and would have had to be accessed and downloaded from the site, which may have required more technological training.

Other than broadening repertoire of strategies and increased number of resources, the most selected advantages were flexible time allotment, breadth of ideas, having thought time, knowledge gained, and growth as a teacher. Seven TPs selected each of the previously mentioned advantages to the online PLC. The least selected advantages, with only four TPs selecting them, included social networking, asynchronized meetings, skills gained, and personality conflicts negated. Five TPs selected ability to revise as an advantage of the online PLC. Overall, advantages had more selections than disadvantages with five additional advantages reported by teachers in the nominal item section. AT6 identified “having people to plan with” as an additional advantage, while AT7 identified
“knowing what other teachers are doing in the district and being able to compare” as an additional advantage. BT7 stated, “development of community with teachers of GT and same GT content” as an advantage. And finally, at School C, CT7 identified “collaboration of same content” as an additional advantage and CT8 identified, “offering a different perspective” as an additional advantage. These additional advantages directly answer the research question and imply that the implementation of an online PLC does indeed help with collaboration issues associated with teachers of GT ELA content in District X.

Table 4.7 displays the perceived disadvantages of the online PLC with an “X” next to the participant code for each of the nominal items selected. The corresponding nominal item selections are listed in the note below the table. The most selected disadvantage to the online PLC, with three TPs selecting it, was “prefer face-to-face,” followed closely, with two TPs selecting “lack of technological training” and “lack of familiarity to the platform.” Lastly, one TP selected “lag time” as a disadvantage to the online PLC. Interestingly, no one mentioned during the interviews, lag time as an issue associated with the online PLC. Contrarily, one teacher did mention lag time as an issue associated with the ftf PLC, as CT6 stated,

Sometimes, in the face-to-face PLC, people do not come with things done and it takes longer, but the online PLC allows things to be done at that moment and not waiting a week until the next face-to-face PLC.
Table 4.7

Disadvantages that Apply to the Online PLC

<table>
<thead>
<tr>
<th>Participant Code</th>
<th>Item #1</th>
<th>Item #2</th>
<th>Item #3</th>
<th>Item #4</th>
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<th>Item #6</th>
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Note: The above items correspond to the following – 1. Login issues, 2. Prefer synchronized meetings, 3. Lag time, 4. Lack of technological training, 5. Prefer face-to-face, 6. Lack of familiarity to platform, 7. Device issues

Table 4.8 ranks the perceived disadvantages in order from most commonly selected to least commonly selected by TPs. Overall, TPs select far less disadvantages than advantages to the online PLC. Interestingly, no TPs selected login issues, a preference for synchronized meetings, or device issues as disadvantages to the online PLC. The one TP, BT6, who indicated lag time as a disadvantage, mentioned a specific instance of posting a question on the online PLC and not hearing back from a colleague for almost a week. Although only 33% of TPs indicated a preference for ftf, it is still intriguing to pursue a possibly blended model of ftf and online for a PLC implementation.
Table 4.8

*Most to Least Common Disadvantages that Apply to the Online PLC*

<table>
<thead>
<tr>
<th>Disadvantages to Online PLC</th>
<th>Number of Participants that Selected</th>
<th>Percent of Participants that Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefer face-to-face</td>
<td>3</td>
<td>33%</td>
</tr>
<tr>
<td>Lack of technological training</td>
<td>2</td>
<td>22%</td>
</tr>
<tr>
<td>Lack of familiarity to platform</td>
<td>2</td>
<td>22%</td>
</tr>
<tr>
<td>Lag time</td>
<td>1</td>
<td>11%</td>
</tr>
<tr>
<td>Login issues</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Preferred synchronized meetings</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Device issues</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

There were six additional disadvantages reported by TPs. AT7 stated both “forgetfulness” and “a preference for talking” as additional disadvantages to the online PLC. At school B, BT7 stated “lack of accountability” as an additional disadvantage to the online PLC, while BT8 stated, “don’t like not having a direct purpose” as a disadvantage to the online PLC. Finally, CT8 added, “uncertainty of how to use resources” as an additional disadvantage to the online PLC. Overall, there were not as many disadvantages as advantages to the online PLC. Although fewer, the disadvantages should be analyzed by the researcher-participant to further improve the implementation.

**Conclusion**

While collaboration with other GT teachers both weekly and monthly increased by a mean of 0.78 and 1.22, respectively, it would be beneficial to see the mean and standard deviation lower for both, as the research question directly examined collaboration among GT teachers. Although not mentioned during the interviews, it is
possible that lag time is an issue of the online PLC, as a teacher may post something and it may not be seen right away, as the online PLC is asynchronized. Furthermore, while the interview responses would imply that the processing time would have increased more on the post-survey, in actuality, it increased less than 0.50. Therefore, processing time would be an interesting topic to investigate further and clarify in the research.

The objective of the research study was to discover the effects on collaboration and professional growth after implementing an online PLC. Overall, the data indicated the primary effects, on collaboration, were an increase of discussion and the sharing of resources aligned with the GT curriculum. Unexpectedly, the PR noticed teachers avoided the articles posted in the online PLC, especially articles that were from academic journals, theoretical, or controversial in topic. The reader should be aware these are the PR’s observations, as the TPs did not mention the articles during the interviews but, instead, discussed the more applicable sections of the PLC, such as the sharing of resources or discussion of curriculum. TPs did mention they would appreciate professional development opportunities being shared on the Google Site and agreed it should be part of the action plan for the next steps in the implementation. AT8 offered to share enrichment centers, as an additional professional growth for teachers.

Finally, the notion of time issues associated with collaboration among GT teachers may need to be examined further, especially since it is a primary aspect of the overall research question being examined in this study. Specifically, because time restraints or mileage were listed together in the initial survey question for collaboration issues, it may require further investigation to narrow the problem. Aspects of time had a larger standard deviation in the quantitative findings, which alludes to a discrepancy
among TPs. Since 100% of TPs strongly agreed there are time issues related to meeting with other GT teachers, it may be worth investigating further.
CHAPTER 5
SUMMARY AND DISCUSSION

Introduction

The purpose of this study was to examine the effects of implementing an online professional learning community (PLC) designed explicitly for teachers of gifted and talented (GT) English language arts (ELA) courses. The research question examined how the implementation of an online PLC effected collaboration and professional growth for ELA teachers of 6th–8th grade GT students in three rural middle schools in one school district in SC. A summary of the research findings concluded that implementing an online PLC for teachers of GT ELA courses had more advantages than disadvantages and was most beneficial to collaboration and professional growth by sharing resources and ideas specific to the GT curriculum. From the study, I learned about the different perspectives of online collaboration from teachers ranging in years of experience from 1 year to over 20 years. When asked about recommendations for the implementation, TPs mentioned it would have been helpful to have specific expectations for the online PLC as well as weekly or bi-weekly reminders sent via email. Recommendations for future cycles of action research include further examining collaboration through professional development opportunities as well as confidence issues of teachers to share and post online. Furthermore, future cycles of research may include an examination of the issues associated with time, such as weekly versus monthly collaboration among GT teachers, synchronous versus asynchronous meetings as well as any issues associated with lag time.
or processing time. It was also suggested that the implementation of an online PLC be expanded to teachers of other courses, including traditional courses, other contents, and more grade levels.

**Focus of the Study**

An online PLC was designed and implemented explicitly for teachers of GT ELA courses in SC’s District X. The study was in response to collaboration issues among teachers of GT courses, especially in small or rural schools. Teachers were either planning in isolation or traveling many miles across the district to collaborate with teachers of the same course. Although teachers at 14 middle schools in District X participated in the study, data were only collected from nine teachers at three rural schools; this was due to the nature of rural schools being geographically isolated and having a smaller population of students identified as GT. The limited mixed design study focused on the implementation of an online PLC for teachers of GT ELA courses. Specifically, the purpose of the study was to discover the effects on collaboration and professional growth of implementing an online PLC. Furthermore, the study described the implementation and analyzed the advantages and disadvantages to collaboration online for teachers of GT ELA courses. In accordance with action research, the study identified a problem with collaboration among GT teachers, reflected upon the problem, found a possible solution of implementing an online PLC, and in due course tested the effectiveness of the implementation. The PR collected and analyzed data, then reflected on the findings with the TPs to further develop an action plan.
Overview of the Study

The research design was a limited mixed design, which included quantitative and qualitative measures. A survey research design was used for the quantitative measures—nine teachers in three rural middle schools in District X, completed a pre-survey and post-survey. The questions on the Likert scale surveys were aligned to topics relevant to collaboration and professional growth to directly answer the research question. Each survey had a total of 18 statements and participants indicated their degree of agreement or disagreement for each statement. Fifteen out of the 18 statements were comparable across both surveys and were comparatively analyzed with descriptive statistics. Measures of central tendency and measures of dispersion were used to describe and analyze the data from the surveys. Furthermore, a paired $t$ test was used to compare the pre- and post-implementation surveys and draw conclusions about the impact of the implementation on collaboration and professional growth. In addition to the surveys, nominal items were given to the TPs to examine the perceived advantages and disadvantages of the online PLC. Finally, the PR interviewed each TP post-implementation to further describe the data collected from the surveys.

Summary of the Study

Overall, the implementation of the online PLC, for teachers of GT ELA courses in grades 6-8, increased the discussion of GT curriculum and access to resources aligned with the GT curriculum as seen in Figure 5.1 and Figure 5.2. The statements on the pre- and post-implementation surveys were directly comparable and are shown above the figures. Prior to the implementation of the online PLC, 89% of the TPs indicated GT curriculum was not discussed during PLCs, but 100% of TPs indicated GT curriculum
was discussed during the online PLC. According to the nominal items, 100% of TPs indicated a broadened repertoire of strategies as a perceived advantage of the online PLC. The topic of curriculum had a mean difference of 2.22, which was the largest reported mean difference besides the topic of resources, which had a mean difference of 2.44. Both topics had a $p$ value of less than 0.01, which although indicative of a statistical significance, it is important to note the small sample size (n=9) and non-generalizable nature of action research. Figure 5.1 displays the responses to the statement of GT curriculum being discussed during ftf PLCs versus the online PLC. Overall, a majority of TPs indicated they strongly disagreed GT curriculum was discussed in their ftf PLCs but strongly agreed GT curriculum was discussed during the online PLC.

![Figure 5.1 Pre- and post-implementation responses to topic of GT curriculum](image)

Figure 5.1 Pre- and post-implementation responses to topic of GT curriculum

Note: Figure 5.1 pertains to item #16 on the pre-implementation survey statement: GT curriculum is discussed during my current face-to-face PLC, and on the post-implementation survey statement: GT curriculum was discussed during the online PLC.
The largest reported impact of the online PLC implementation was the sharing of resources, which is directly aligned with collaboration. Prior to the online PLC, 89% of TPs indicated their face-to-face PLC did not provide them with resources aligned to GT curriculum. However, as seen in Figure 5.2, 100% of TPs indicated the online PLC provided them with resources aligned to the GT curriculum. According to the nominal items, 89% of TPs indicated an increased number of resources as a perceived advantage of the online PLC. During the interviews, TPs elaborated on how the online PLC not only provided resources aligned to the GT curriculum but furthered their thinking of GT strategies, saved them time from developing materials in isolation, and saved them money from having to buy materials, since they were able to create them with other teachers.

Figures 5.1 and 5.2 display how impactful the online PLC was on discussing GT curriculum and providing resources for the curriculum. Curriculum and resources that discussed and made by teachers are significant and influential in positively impacting the lives of students (Ford, 2010). It is essential to remember, it is not just the sharing of materials but the discussion of strategies and best practices that can alter not only the knowledge of students but their thinking and mindset, as well (Dweck, 2007).

Overall, the study showed an increase in collaboration of GT curriculum through a sharing of resources. While the implementation was found to be effective in certain aspects, the quantitative data and interviews indicate a need for modification. For example, the survey responses on the topic of confidence decreased with a mean difference of -0.22. Although only 22% of TPs indicated they did not feel confident in adding value to the online PLC, 67% of TPs alluded to confidence issues in their
responses to interview questions. The survey data shows TPs agree more strongly with their confidence in a face-to-face PLC than in an online PLC. Likewise, 33% of TPs indicated a preference for face-to-face PLCs, as a disadvantage, to the online PLC, via the nominal items. An implication of these findings is that a blended PLC, incorporating both online and face-to-face may be more effective.

![Pre- and post-implementation responses to topic of resources](image)

*Figure 5.2 Pre- and post-implementation responses to topic of resources*

Note: Figure 5.2 pertains to item #18 as follows: On the pre-implementation survey statement: Participating in my current face-to-face PLC provides me with resources aligned to the GT curriculum, and on the post-implementation survey statement: Participating in the online PLC provided me with resources aligned to the GT curriculum.

**Discussion of Major Points of the Study**

After analyzing the data obtained from the pre-survey and post-survey, as well as the nominal items and interviews, three major points have emerged:

1. Collaboration not only leads to new materials and resources but also to new knowledge and ideas that would otherwise not exist without collaboration.

Overall, collaboration of resources and ideas was the most beneficial aspect of
the online PLC. Positive remarks about collaboration were made 22 times during the semi-structured interviews, and 8 out of the 9 participants mentioned the advantages of collaboration more than twice during the interviews. Although only 2 of the interview questions directly asked about collaboration, participants mentioned collaboration when answering 5 out of the 6 interview questions. The most perceived advantages of the online PLC were associated with collaboration, such as increased breadth of ideas, knowledge, and resources, as well as a broadened repertoire of strategies and growth as a teacher.

2. There are confidence issues associated with the implementation of an online PLC. According to the interviews, these issues are due to a lack of ownership of the online site, fear of scrutiny in front of a larger audience, self-doubt in quality, worry of others’ feelings and perceptions, the public nature of posts, and lack of technological training and familiarity to the platform.

3. Time is a topic to be investigated further, as aspects of time had a larger standard deviation in the quantitative findings, which alludes to a discrepancy among TPs. Although TPs indicated flexible time allotment and having thinking time as perceived advantages, it seems that asynchronous meetings can bring other issues, such as lag time between posts. Sometimes a more immediate response is needed and the asynchronous aspect can be a limitation rather than a strength. Also, on the topic of time, TPs mentioned a need for reminders or protected time throughout the week to actively engage in the
online PLC. Contrary to the same time needed in a face-to-face PLC, the online PLC protected time can be different amounts and at different intervals.

Collaboration and confidence are topics that will be developed within the action plan, while time is a topic suggested for future research. Although collaboration was indicated as an effect of the implementation, it is important to further develop collaboration within the action plan. It is vital to build confidence, so teacher feel comfortable sharing, posting, and discussing topics within the online PLC. Since time has multiple variables, such as traveling time, time of day, duration of PLC, wait time, and lag time, a closer examination of time is suggested for future research.

**Action Plan: Implications of the Findings**

After reviewing the research question and methodology as well as analyzing the data obtained and, most importantly, reflecting on the results with TPs, an action plan was developed. To collaborate beyond just sharing ideas and resources, it was decided a professional development page will be added to the online PLC Google Site. TPs agreed professional growth opportunities will need to be more individualized, as they reported a wide variety of needs. Articles and resources on a specific topic will be posted, so teachers can examine and discuss them, thus collaborating to create and integrate new knowledge into their teaching. In addition to articles and resources, teachers requested videos or modules be uploaded to explain topics. Although a few TPs requested specific expectations be posted, such as assignments or required posts, it was discussed that this made it too much like a course and should not be included in the action plan. Topics of multiculturalism, equity pedagogy, and the underrepresentation of minorities and students of lower-income households in GT, will be discussed as part of the online professional
development. Originally, these topics were supposed to be a part of the first cycle of implementation, but TPs either did not have interest or did not have enough time due to the end-of-the-year implementation.

In addition to collaboration, professional development can also be directly linked to confidence issues, as professional development can be offered to extend knowledge of technology and familiarity to the platform, which will build self-confidence in participating in the PLC. CT6 and CT7 highly agreed that access to professional development would make them feel more comfortable participating in the online PLC. During the semi-structured interview, AT8 mentioned she would be interested in sharing her knowledge through a professional development page on the site and recommended an additional page be added with enrichment centers. Upon reflection, all TPs were enthusiastic about the addition of enrichment to the Google Site but specifically asked for the enrichment centers to be at least somewhat aligned with the curriculum units. The notion of enrichment activities ties directly back to the literature on best practices for GT, as students should not be doing more of the same or even working at a faster pace but, instead, should be enriching their learning by thinking deeper and more complexly about subjects (Blackwell, et al., 2007; Cohen & Ambrose, 1993; Dweck, 2007 Gagné, 1995). To continually encourage collaboration and professional growth of teachers of GT ELA courses, the following action plan will be implemented:

1. After the units are revised over the summer, they will be uploaded to the Google Site by the PR. This will allow teachers to continue to collaborate over the summer and begin planning prior to the beginning of the school year.
Responsive curriculum revisions to the units are made by teams of instructional coaches and teachers working together.

2. During the course of the year, TPs will continue to collaborate, share, and discuss GT curriculum and resources via the online PLC, as this was the most positive impact seen during the initial implementation.

3. At the beginning of the school year, during August and September, all TPs will communicate needs and recommendations to improve the PLC and Google Site. According to DuFour et al. (2008), PLCs should have a commitment to continuous improvement.

4. In October, the PR will reach out to other instructional coaches, coordinators, and instructional technologists for professional development opportunities, resources, and modules to be uploaded to the Google Site. Specifically, the PR will inquire about professional development aligned with GT best practices and technology support for the Google Site.

5. During November, instructional coaches, coordinators, and instructional technologists will upload professional development opportunities, resources, and modules to the professional development page of the Google Site. Although aligned with GT best practices, the professional development may also align with district priorities, such as alignment of curriculum, instruction, and assessment, gathering and analyzing data for instructional planning, Literacy/R2S, Real-World Learning, technology integration, the new SC teacher evaluation with the 4.0 Rubric, STEAM aspects, or the Makerspace movement.
6. By December, AT8 will begin to add enrichment centers to the Google Site for teachers to explore and use. The centers will be aligned with the units and uploaded to the corresponding unit pages of the Google Site. The centers may include GT differentiation strategies, such as acceleration, complexity, depth, challenge, creativity, or abstractness.

7. In January, the PR and TPs will invite other schools and teachers to join the PLC. This will allow teachers to build a district-wide collaborative culture in which they work together interdependently and assume collective responsibility for the learning of all GT students (DuFour et al., 2008).

8. At the end of the school year, in April and May, the online PLC will be reevaluated via a Google Form and further discussed via a Google Hangout. Evaluating the online PLC may lead to new and innovative ideas for future implementations. The discussion will allow for further reflection, deeper analysis, and better planning for detailed next steps.

**Suggestions for Future Research**

The online PLC implementation was designed to encourage collaboration of teachers of GT ELA courses in grades 6-8, across a district and to increase professional growth. However, it is suggested that future cycles of research more closely examine issues pertaining to time, as the quantitative findings alluded to a discrepancy. There was a larger standard deviation for the survey items aligned with issues of time, such as time intervals of weekly, bi-weekly, or monthly, as well as a discrepancy among responses to time being effectively spent or the PLC allowing for processing time. It is possible that the discrepancy is due to a small sample size (n=9) or limitations to specific parameters.
out of the control of the PR. For example, TPs requested protected time for the online PLC to be integrated into their school day or in place of other meetings, but these would be administrative decisions at the school level. Furthermore, time should be investigated further due to the vast variables associated with time, such as travel time, duration, time of day, wait or thinking time, and lag time between posts. Perhaps, a study should be conducted examining time issues associated with synchronous meetings versus time issues associated with asynchronous meetings. Also, a study could be conducted to examine the effects of implementing specific solutions for issues of time, such as the issue of lag time associated with asynchronous meetings or issues of scheduling conflicts or travel time associated with synchronous meetings.

**Conclusion**

In conclusion, this action research study has shown that implementing an online PLC for teachers of GT ELA courses in grades 6-8 had more reported advantages than disadvantages. Quantitative and qualitative data were used to directly answer the research question of how the implementation on the online PLC effected collaboration and professional growth for teachers in the three rural school in SC’s District X. A summary of the research findings concluded that the implementation was beneficial to collaboration by sharing resources and ideas that are specific to GT curriculum. However, professional growth was found to need modification and, therefore, was reflected upon in the action plan to be included in the next cycle of implementation. Although a greater understanding of the issues of time were developed, it is suggested that future cycles of research more closely examine these issues.
Future cycles will focus on an examination of confidence of teachers to share and/or post online, as six TPs alluded to issues of confidence during the interviews. It is vital for teachers to feel comfortable posting and sharing and is a topic evident in the literature of PLCs (DuFour, et al., 2008), communities of practice (Wenger, 1998), and activity systems (Enegström, 2000). Each of the aforementioned notions are associated with social learning theory and cultural-historical activity theory and lend notable insights to future cycles of research on teachers collaboratively and confidently working together to improve instructional and therefore teaching and learning.

Lastly, it is suggested that the implementation of an online PLC be expanded to other courses, content, and grades to examine the effects, further describe, or possibly compare implementations. All of the teachers in this study teach at least one other course and at least three TPs mentioned a desire to collaborate online for those courses, as well. It may be valuable to collect data from schools other than the rural schools to better analyze the effects of the implementation on different populations.

Students do not all require the same education but, rather, equitable access to opportunities to acquire the education each needs. In general, the study sought to provide a solution to teachers who often plan in isolation and do not get offered the chance to collaborate on best practices specific to GT students. The online PLC offered collaboration opportunities to teachers on specific differentiation strategies, resources, and ideas aligned with the GT curriculum, so they could offer equitable growth opportunities to their GT students. According to DuFour (2016), schools can be improved “by creating a culture in which teams of teachers are helping one another get better” (p. 15). In essence, the online PLC was a community of teachers helping one another.
REFERENCES


Lawrence, B. K., & Glenn, C. (1994). *Beware the gifted*. Unpublished manuscript.


APPENDIX A
ONLINE PLC SURVEY RESULTS FOR INITIAL INTEREST

Summary

Where do you teach?

What grade do you teach?

- 8th grade GT English Language Arts 11 (29%)
- 7th grade GT English Language Arts 14 (36%)
- 8th grade GT English I 13 (33%)
- Other 0 (0%)

Will you participate in the online GT PLC during the 2015-2016 school year?

- YES, I will participate. 34 (87%)
- NO, I will not participate. 5 (13%)
APPENDIX B
PRE-IMPLEMENTATION LIKERT SCALE SURVEY

1. I regularly attend a **face-to-face** professional learning community (PLC).
   
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<th>Strongly Agree</th>
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2. My current **face-to-face** PLC is effective.
   
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<th>Strongly Agree</th>
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3. I regularly plan with at least one other teacher who teaches the same grade level and GT content.
   
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<th>Strongly Agree</th>
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4. I feel my time is well spent in my current **face-to-face** PLC.
   
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<th>Strongly Agree</th>
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5. I feel confident in my ability to add value to my current **face-to-face** PLC.
   
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6. I am enthusiastic about participating in my current **face-to-face** PLC.
   
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<th>Strongly Agree</th>
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7. Time is effectively spent in my current **face-to-face** PLC.
   
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8. I have not been able to make meetings focused on GT because of time restraints or mileage.
   
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9. I would like to collaborate with other teachers who teach the same grade level and GT content.
   
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10. I am growing professionally, in best practices for GT, by participating in my current **face-to-face** PLC.
    
    | Strongly Agree | Agree | Disagree | Strongly Disagree |
    |----------------|-------|----------|-------------------|
    |                |       |          |                   |
11. I can easily find time to meet with teachers of my same grade level and GT course.

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12. I collaborate weekly or bi-weekly with other gifted and talented teachers.

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13. I collaborate monthly with other gifted and talented teachers.

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14. I have enough processing time during my current **face-to-face** PLC to add value to conversations.

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15. Differentiation strategies specifically aligned to the needs of GT students are regularly discussed during my current **face-to-face** PLC.

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16. GT curriculum is discussed during my current **face-to-face** PLC.

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17. Problem solving for issues concerning GT students takes place during my current **face-to-face** PLC.

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18. Participating in my current face-to-face PLC provides me with resources aligned to the GT curriculum.

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APPENDIX C

POST-IMPLEMENTATION LIKERT SCALE SURVEY

1. I had a positive experience with the online professional learning community (PLC).

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2. I found the online PLC beneficial to me as a teacher.

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3. I would participate in another online PLC.

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4. I regularly participated in the online PLC.

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5. The online PLC was effective.

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6. I was able to plan with at least one other teacher who teaches the same grade level and GT content.

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7. I feel my time was well spent in the online PLC.

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8. I feel confident in my ability to add value to the online PLC.

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9. I felt enthusiastic about participating in the online PLC.

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10. Time was effectively spent in the online PLC.

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11. I grew professionally, in best practices for GT, by participating in the **online** PLC.

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14. I had enough processing time during the **online** PLC to add value to conversations.

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15. Differentiation strategies specifically aligned to the needs of GT students were regularly discussed during the **online** PLC.

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16. GT curriculum was discussed during the **online** PLC.

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APPENDIX D
POST-IMPLEMENTATION NOMINAL ITEMS AND SEMI-STRUCTURED
INTERVIEW QUESTIONS

Check all advantages that apply to the online PLC:

☐ Flexible time allotment
☐ Social networking
☐ Breadth of ideas
☐ Ability to revise
☐ Asynchronous meetings
☐ Having thought time
☐ Knowledge gained
☐ Skills gained
☐ Broaden repertoire of strategies
☐ Increased number of resources
☐ Growth as a teacher
☐ Personality conflicts negated
☐ __________________________

Check all disadvantages that apply to the online PLC:

☐ Login issues
☐ Prefer synchronous meetings
☐ Lag time
☐ Lack of technological training
☐ Prefer face-to-face
☐ Lack of familiarity to platform
☐ Device issues
☐ __________________________

Guided and Semi-Structured Interview Questions:

1. How was it, as a teacher, to participate in an online PLC? What, if any, were the challenges of the online PLC?
2. Did the online PLC allow you to collaborate with other teachers of ELA GT courses? Describe what it was like, in regards to collaboration, participating in the online PLC.
3. Was participating in the online PLC different from face-to-face PLCs? If so, how?
4. Describe the perceived benefits and/or drawbacks, as a teacher, for participating in an online PLC.
5. Do you feel that the online platform was conducive to collaboration and professional growth? If so, how? If not, why?
6. Is there anything I did not ask you that you want me to know?