

ABSTRACT

Gifted and Talented Professional Development: A Case Study of the Effectiveness of Online Courses for Elementary Teachers

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Professional development is imperative for gifted and talented teachers' improvement in classrooms. However, many professional development courses are not meaningful for teachers and are not presented effectively. Using effective researched strategies, leaders can create better professional development courses. Professional development leaders should observe gifted and talented courses for strategies to ensure professional development courses are beneficial. Examining professional development courses allows for constant improvement of and reflection on professional development design for teachers. Using researched effective strategies when designing gifted and talented professional development courses is imperative to see a positive change for teachers.

This research utilized a case study design to understand effective strategies for online gifted and talented teacher professional development courses. This study builds upon researched strategies of professional development, online teaching, and andragogy. Gifted and talented teacher professional development courses can improve and develop

effective classroom teachers by implementing researched strategies. This case study allowed the researcher to observe four separate online gifted and talented professional development courses for effective strategies. After observation, the researcher examined the four professional development courses for similarities and differences between the courses. The collection of data highlights strategies currently being implemented in the courses and allows the researcher to make recommendations for future improvement of online gifted and talented professional development courses for teachers.

This study informs key stakeholders of gifted and talented professional development programs on the importance of effective professional development courses for teachers. Through sharing the findings with key stakeholders, leaders can better understand what is involved in professional development and in what ways could strategies be employed to effectively engage teachers. Additionally, the study provides an observation tool through which professional development leaders may examine the effectiveness of their online professional development courses using researched strategies focused on effective professional development, online teaching strategies, and andragogy. The tool can be utilized and modified by professional development leaders to improve professional development courses for teachers.

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Gifted and Talented Professional Development: A Case Study of the Effectiveness
of Online Courses for Elementary Teachers

by

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DEDICATION

To the teachers who have sat through professional development and felt as if their voices were not heard

I hope this is the beginning of change for professional development that encourages school districts to invest in meaningful and effective professional development for their teachers.

Thank you to the teachers and administrators I have been blessed to work with; you have shaped me and encouraged me to be the teacher I am today.

CHAPTER ONE

Background and Needs Assessment

Introduction

Teachers in the United States currently face numerous challenges in the classroom learning environment. To learn about and combat these challenges, gifted and talented teachers need meaningful and beneficial professional development. Effective professional development courses for teachers are crucial to the future of public-school education (Learning Forward, 2009). However, teachers are not improving their teaching practices with current professional development (Darling-Hammond et al., 2017; Hill et al., 2013). Gifted and talented teachers need meaningful professional development courses to understand and face the challenges arising in the classroom.

A primary way to understand the effectiveness of current gifted and talented professional development courses is by evaluating for content, delivery, and impact of the instruction. However, Gubbins et al. (2002) found that “the majority of districts do not evaluate the impact of their professional development practices in gifted education on teachers and students” (p. viii). Evaluation of professional development programs based on what research has deemed as effective professional development strategies is vital to understanding the effectiveness of the programs.

This case study seeks to understand current practices in gifted and talented teacher professional development. Through careful observation, professional development courses can continuously improve teachers’ teaching practices. Observation of

professional development also ensures teachers are being treated as adult learners during courses and are able to see value the professional development they attend.

Statement of the Problem

Across the country, teachers spend countless hours in professional development sessions to improve their teaching practices. Professional development is a primary way for the education system to improve (Darling-Hammond et al., 2009). Research has shown school districts and teachers invest countless hours and dollars into their professional development (Desimone, 2009; Jacob & McGovern, 2015). Despite the importance of improvement and investment, teachers are unlikely to improve their teaching practices through the current professional development they attend (Darling-Hammond et al., 2017; Hill et al., 2013).

Although professional development is integral for teacher improvement, many teachers negatively perceive the professional development they attend (Bill & Melinda Gates Foundation, 2014; Jacob & McGovern, 2015). Some professional development planners treat teachers as passive learners whose goals are not included (Louws et al., 2017). Teachers want professional development responsive to their ideas and voices (Patton et al., 2015). However, many teachers feel that traditional professional development does not improve their professional teaching (Gulamhussein, 2013; Siko & Hess, 2014). In many situations, the more traditional professional development programs do not consider teachers' contribution to the practice (Smylie, 2014). Teacher contribution to professional development is critical for effective learning to occur (Patton et al., 2015). Teachers cannot continue to view professional development as ineffective or

meaningless due to the lack of consideration for the teacher attending the professional development course.

Due to the importance of teacher professional development courses, courses need continuous evaluation to improve their quality and benefit to teachers (Guskey, 2000). Evaluation of teacher professional development courses is vital to improving the current professional development courses offered to teachers. Professional development should be measured using common features found in the research, including content-focused, active learning, coherence, duration, and collective participation (Desimone, 2011). As Killion (2008) expressed, “the most useful evaluations result from a desire to improve both the program and its results” (p. 140). School districts across the country must want to improve the professional development courses they offer to teachers and understand the important role courses play in a teacher’s development.

Teachers in Texas must spend a specific number of professional development hours maintaining their teaching certificates. Teachers participate in thirty hours of training for an initial certificate and an additional six hours each year to teach gifted and talented students (Texas State Plan for the Education of Gifted/Talented Students, 2019). Without this updated certificate, teachers cannot teach gifted and talented students in their classrooms. A certificate simply means that the teacher attended six hours of training, but not that the training was beneficial or meaningful for the teacher. Beginning teachers lack the knowledge and skills to meet the needs of gifted and talented students in their classrooms (Hudson et al., 2010; Troxclair, 2013). Effective teacher professional development courses for gifted and talented teachers are imperative to the success of gifted and talented programs offered by school districts.

The Quincy Independent School District (pseudonym) in North Texas provides teachers with professional development courses at no cost, including gifted and talented professional development. The school district creates and provides professional development for teachers using district curriculum coaches and educational technology trainers. The district does not evaluate the courses offered to teachers for effectiveness, but asks teachers complete a survey at the end of the course to determine if the course content was learned. Professional development leaders need to learn more about online gifted and talented teacher professional development courses for their use of research strategies to be effective in improving gifted and talented teachers' instruction in the classroom.

Literature Review

Specific research-based instruction is needed to meet the needs of gifted and talented students. Effective teacher professional development improves teaching to provide students with the most appropriate education possible. The following literature review argues the importance of implementing adult learning theories into professional development to provide teachers with effective courses that improve their pedagogies. The literature review unfolds in five sections. After establishing a general definition of professional development, this literature review begins by offering research on two of the most popular professional development models. The next section examines the essential qualities needed to implement successful professional development. The third section looks at online teaching as a strategy for conducting professional development. The fourth section explores research related to current adult learning theories. The fifth section provides a snapshot of the specific requirements of professional development in

the world of gifted and talented education. Following this first section, I offer a synthesis of the literature. Finally, the literature review concludes by drawing out the implications of using adult learning theories with teacher professional development. Before getting into the research, I provide a basic definition of professional development within the context of teaching.

While professional development looks like many different things across various industries, within the realm of education, professional development typically refers to a school or district-based training teachers receive beyond their college degrees. The National Staff Development Council, currently known as Learning Forward (2009), defined professional development as “a comprehensive, sustained, and intensive approach to improving teachers’ and principals’ effectiveness in raising student achievement” (p. 12), which “may be supported by activities such as courses, workshops, institutes, networks, and conferences” (p. 16). While different educational organizations and schools offer their definitions for PD, this definition shows what is most important—that these courses have as their goal student improvement. The length of time may vary, and the avenues through which the development occurs may change, but the common goal is to help teachers grow in their craft to help their students learn. The following section offers a quick review of the professional development requirements for teachers in Texas, followed by research on two common professional development models.

Models of Teacher Professional Development

Teachers need continuous practice and skills training to keep their pedagogies in shape like other professionals. To begin a career as a certified teacher in Texas, teachers must obtain a bachelor’s degree, complete an educator preparation program, and pass all

certification tests required for their subject and grade level. Through professional development, teachers have the opportunity to stay up to date on the latest research and engage in hands-on training with new teaching practices. To maintain a teaching license year after year, educators must complete 150 continuing professional education hours (TEA, 2021). The district mandates some professional development courses for all teachers in the district, and other courses are available from which teachers may choose based on their needs and interests. These courses occur in both online and in-person learning environments. Two of the most popular forms of professional development models are coaching and professional learning communities, also called PLCs.

Coaching. Coaching is one type of professional development between two or more teachers. Coaching involves a cycle of teaching, observing, and providing feedback between the teachers (King et al., 2015). Coaches model teaching strategies to help facilitate changes in the other teachers' instructional practices (Poglinco & Bach, 2004). Poglinco et al. (2003) found that coaches positively affected teaching teachers' standards to use in the classroom and impact their teaching. Coaches are effective when they observe and provide continuous feedback (Matsumura et al., 2009). Alsaleh et al. (2017) reported that peer coaching sessions positively impacted teachers' professional growth in as little as three months. Coaching is a beneficial form of professional development for teachers.

Professional learning communities. Professional learning communities (PLCs) are a type of professional development model that promotes collaboration between teachers who come together to study a particular problem or address a specific need in

their school environment (Hoaglund et al., 2014). In professional learning communities, educators work together as a team to meet the needs of learners and analyze data (DuFour, 2004). Professional learning communities provide teachers the opportunity to learn and work together (Thornton & Cherrington, 2019). DuFour et al. (2016) frame professional learning communities as having three main qualities: having a focus on learning, having a collaborative culture and collective responsibility, and being results-oriented. Broader research shows five characteristics of professional learning communities: shared values and vision (Andrews & Lewis, 2007; Stoll et al., 2006), collective responsibility (King & Newmann, 2001), reflective professional inquiry (Louis et al., 1995), collaboration (Louis et al., 1995; Hargreaves, 2003), and group and individual learning (Louis et al., 1995). Stoll et al. (2006) also identified mutual trust and respect, inclusive membership, and openness through networks and partnerships as key to successful PLCs.

Professional learning communities positively impact teaching practices and student achievement, and leaders can tailor PLCs to meet specific school needs. Through a PLC, Hollins et al. (2004) showed teachers a shift of thinking for visualization strategies which helped to provide better writing instruction for African American students. Jones et al. (2013) found science teachers who participated in a PLC saw a positive impact on their lesson planning and assessment practices and helped develop a strong instructional norm. Strahan (2003) found PLCs increased teachers' acceptance of working with specialists which resulted in changes to their reading instruction and subsequently saw state achievement tests scores rise from 50% proficient to over 75%. Although coaching and PLCs are two of the most common models for implementing

professional development, research supports certain qualities that successful professional development programs have in common.

Qualities of Effective Professional Development

Teachers must believe in the professional development they attend. For teacher professional development to produce meaning for teachers, it must change teachers' classroom practices, student learning outcomes, and teachers' beliefs and attitudes about the practice (Guskey, 1986). "Staff development programs are a systematic attempt to bring about change—change in the classroom practices of teachers, change in their beliefs and attitudes, and change in the learning outcomes of students" (Guskey, 1986, p. 5). Professional development is ineffective without teacher motivation to participate (Archibald et al., 2011). Once teachers see how professional development impacts their teaching style and students' learning, they can positively view professional development.

While districts use numerous platforms to facilitate professional development, they must follow specific research-based qualities to be truly effective (Darling-Hammond et al., 2017). These strategies are vital for professional development to be effective and for teachers to implement content learned into their teaching practices. After content is implemented into practice and teachers see an impact on student learning, teachers can change their teaching beliefs (Guskey, 1986). According to Darling-Hammond et al. (2017), effective professional development includes strategies aligned with teacher goals, utilizing active learning, implementing a coaching model, facilitating collaboration, and sustained over an extended period. The following sections describe the research-based qualities professional development should include for teacher effectiveness.

Alignment with teachers' goals. Aligning the professional development with teachers' professional goals is essential for professional development to be effective for teachers. When professional development aligns with teachers' goals, teachers are able to choose the professional development courses they attend because they see an immediate need for it rather than a course assigned to them by someone who does not understand their specific needs. Teachers who select their own goals and then select the training aligned with them invest in their professional learning because they see its immediate value (Johnson, 2018). The requirement each year for teachers in the state of Texas is to set professional goals through different evaluation systems chosen by their school district. A prevalent evaluation system is the Texas Teacher Evaluation and Support System (T-TESS), which districts use for teachers to set goals and for administrators to evaluate teachers. A domain goal of T-TESS is for teachers to continuously reflect on their practice using goal setting and professional development (TEA, 2021). Learning Forward (2017) also recommends including teachers in choosing their professional learning with the help of their school leaders. A study conducted on the effectiveness of goal setting found teachers viewed goal setting as a positive way to spend their time and improve their teaching practices (Camp, 2017). Goal setting allows teachers to be intentional in the professional development courses they attend.

Active learning. Professional development courses that teachers attend must utilize active learning in order to be effective. Teachers need to have active learning and the opportunity to apply new strategies and ideas learned while in the professional development setting (DeMonte, 2013; Desimone, 2011). Garet et al. (2001) found four dimensions to be necessary for active learning, including: "observing and being observed

teaching; planning for classroom implementation; reviewing student work; and presenting, leading, and writing” (p. 925). Active learning for teachers allows them to be a part of the lesson creating process and observe or be observed by other teachers, administrators, or specialists. Allowing teachers to participate in the work allows active learning to occur.

Active learning allows teachers to participate in the same learning opportunities that students experience to improve teacher learning and deepen their content knowledge (Borko, 2004). For example, a professional development regarding a California high school program for biology teachers used the same types of learning that students use, resulting in increased student achievement (Greenleaf et al., 2011). In another example, Buczynski and Hansen (2010) examined how providing science teachers with a professional development opportunity that used science kits for science classrooms offered the experience of engaging in the same materials their students would be using. The science kits allowed teachers to become students and learn from the materials before conducting learning with students. In general, active learning enables teachers to better understand their students’ learning process by engaging with the same materials during professional development used in the classroom (Buczynski & Hansen, 2010).

Coaching. A coaching model provides teachers with numerous opportunities throughout the school year to improve their practices with the help of a mentor. Mentor teachers are experts in their field who coach other teachers to improve their teaching practices. Implementing a coaching model can occur in an in-person setting and a web-based environment with video recordings and discussions for teachers (Shaha & Ellsworth, 2013). Allen et al. (2011) utilized remote mentors with whom teachers

collaborated throughout the school year, with the primary purpose of improving student achievement. Implementing this concept in a science professional development setting, Roth et al. (2011) used video cases to analyze to improve their teaching practices. The study used university scientists as coaches to teach courses for teachers and found that teachers' content knowledge and teaching practice significantly improved after attending the professional development.

Collaboration. An integral aspect of all professional development programs, whether in-person or web-based, is a collaboration between teachers and other professionals (Martin et al., 2014). When teachers collaborate with others, not only do the teachers benefit, but the students in their classrooms benefit from outstanding teaching (Hirsh & Killion, 2009). Collaboration between teachers and administrators also occurs among grade-level teams, shared content areas, outside researchers, and other organizations and community members. In Lara-Alecio et al. (2012), Texas school district teachers collaborated with paraprofessionals through ongoing workshops and staff development sessions. The collaborative programs improved the districts' scores for English language learners on state assessments. Another research study illustrating the importance of teacher collaboration occurred with teachers in New Zealand who collaborated with other teachers, school leaders, and a literacy facilitator to improve the schools reading and writing scores (Meissel & Timperley, 2016). Collaboration among teachers is an essential characteristic of effective professional development programs.

Extended time. Professional development research shows the importance that the length of time of the course has on the effectiveness of professional development for

teachers (Garet et al., 2001). Professional development courses or programs conducted for a sustained amount of time, such as over a summer, semester, or even school year, positively affect student learning (Darling-Hammond et al., 2009). Johnson and Fargo (2014) discovered that a two-year transformative professional development model significantly impacted Hispanic student achievement on state science assessments. Similarly, Doppelt et al. (2009) found that teachers who attended five workshop sessions lasting four hours each increased student achievement compared to teachers who did not participate. In a study conducted by Landry et al. (2009), pre-school teachers participated in four hours of literacy training over the school year. The study found that teachers who attended the professional development had the highest student improvement in their literacy. Professional development sustained over time has a positive impact on teacher training through student achievement on standardized tests (Johnson et al., 2008). Maintaining professional development courses over time provides effective teacher learning.

Summary. Using research-based effective professional development strategies is vital for school districts to consider when planning and implementing their professional development courses for teachers. Aligning professional development courses to teacher goals improves teachers' effectiveness, and a coaching model utilizing collaboration improves teachers across the district. Like students, teachers benefit from learning that occurs over a prolonged time. These strategies help improve teacher performance in the classroom and help improve student test scores on district and state assessments. While these strategies work well when implemented in an in-person setting, course facilitators

can adapt the strategies for an online format. The following section discusses key components of online teaching.

Online Teaching Strategies

Online teaching occurs in public school systems, higher education, and even professional development courses across disciplines. Due to the changing world of education amid a pandemic, many teacher professional development courses moved to online platforms over the last few years (Hartshorne, 2020; Karchmer-Klein & Pytash, 2020). Reviewing effective online teaching strategies will help identify professional development courses' characteristics to better accommodate adult learners on an online platform. While many of the aspects of effective professional development touched on in the previous section translate easily to an online setting, those in charge of planning and conducting professional development in an online setting should also consider the specific aspects of effective online teaching that would benefit their programs and further enrich their teachers' learning experiences.

Forms of online instruction. Online teaching takes many different forms, but the three most common are synchronous, asynchronous, and blended learning (Banna et al., 2015). An effective online course provides multiple opportunities for students to retain information through asynchronous and synchronous activities (Liu et al., 2010; McInnerney & Roberts, 2004). In online learning, synchronous instruction means that the facilitation of the course is through a live online video platform. The instructor interacts with a live group of students participating in the class. An asynchronous model represents students participating in activities through an online platform but not interacting with a teacher or facilitator live. In the blended online learning model, students meet live with a

facilitator and participate in activities outside of that scheduled time related to the content.

Benefits of online instruction. Online teaching provides many benefits to instructors and participants. Online courses increase the number of students enrolled while simultaneously reducing the cost of the course (White et al., 2010). Online learning also allows students to participate in the class from anywhere (Means et al., 2013), which reduces the cost of travel and saves students time (Chen et al., 2005). Recording online courses allows students unable to attend the in-person course to participate later, instead of the instructor having to reteach and repeat the same information over again (Cunningham, 2014). Online courses provide a custom-created course to support teachers' learning goals (Affinito, 2018). Instructors and students benefit from participating in an online course.

Essential elements for successful online instruction. Online learning has essential components to follow in order to be successful. Before beginning an online course, students should acquaint themselves with the different learning features the class uses and interact with course elements. Learning about the specific operational features of online learning platforms allows students to feel more comfortable with the technological components of the course. Additionally, students should interact with other course elements, such as discussions, chat areas, files, and any specific online features for the course (Shrum et al., 2005). Students can then ask questions about navigating the online learning space before beginning course content instruction. Understanding technology

components allows students to familiarize themselves and become comfortable before beginning a course.

One of the most critical elements of an effective online course is the element of design (Carter et al., 2016). Instructors have the task of planning and organizing an online course section (Anderson et al., 2001). Major (2010) identified that the time invested in planning the course is essential to make the class successful. To begin online course design, the instructor must first determine the type of technology students will need and consider each student's specific needs (Osman, 2005). The course design includes various methods for sharing content with students. Course design also includes providing different activities for students to complete and interact with (Bao, 2020). Dixon (2010) found a variety of activities made students feel engaged during the course. The initial setup of the course is crucial to the effectiveness of the online class.

Another essential element of online courses is allowing students to discuss course content and reflect on information learned. Online discussions enable every participant the opportunity to participate in conversation with others (Robles & Braathen, 2002). Online discussions also allow participants to learn from others in the course by engaging in conversation (Wu & Hiltz, 2004). Course discussions allow facilitators to understand how well students comprehend the information learned from the course (Angelo & Cross, 1993). Interaction between students allows for collaboration and community (Chadha, 2017). Discussions are a meaningful way to make online courses effective.

Effective online course planners also consider the daily struggles students and instructors face by being flexible. Flexibility is a crucial factor for students that choose to learn online (Northrup, 2002; Tricker et al., 2001). Online learning allows students

flexibility in their schedule and time management (Young, 2006). Technology does not always do what it is supposed to do in an online learning environment, so technical support is essential for students and instructors if something does not work correctly. Flexibility is a critical factor for participating in an online course, and instructors and students must remember this understanding if things do not go perfectly (Osman, 2005).

For an online course to be successful, communication between the instructor and students is essential (King, 2014). Communication is one of the central elements of a successful online course (Young, 2006). Communication occurs through asynchronous means such as email or discussion boards or synchronously during live course sessions. Swan (2001) found that students who interacted with their instructor more reported higher satisfaction and levels of learning than students who did not interact with their instructor. Communication in online courses among all parties involved is key to making the course a success.

Summary. Effective online courses allow participants to evaluate the content, delivery, and even technological components. An evaluation system enables students to take their time and provide meaningful responses (Johnson, 2001). Cheung (1998) suggests that feedback from an evaluation improves academic quality. Evaluation of a course allows students to give their input and feel that their voice was listened to regarding the effectiveness of the course.

Online courses provide an opportunity for participants to participate in a course no matter where they are (Means et al., 2013). When designed appropriately and providing various learning opportunities, online courses are effective (Bao, 2020). Effective communication and flexibility are critical components of online courses that

make them successful for participants (Young, 2006). Online courses are practical when they follow these characteristics that make them appropriate for adult learners. Whether looking to use an in-person or online environment for professional development, course designers should consider how adult learners differ from youth learners. The following section discusses key current research on adult learning theories and andragogy principles.

Adult Learning Theories

In adult learning, numerous theories and ideas help show the different ways that adults learn best. These theories are essential for professional development because those attending professional development are adults, and it is necessary to treat them as adult learners. The following theories regarding adult learning are crucial to understanding the impact adult learning has on professional development courses for teachers.

Principles of andragogy. The first learning theory related to adult learning is the theory of andragogy. Knowles (1968) introduced the theory of andragogy as a focus on helping adults learn. Andragogy is like the term in education, pedagogy. Merriam-Webster.com dictionary (2021) defines pedagogy as “the art, science, or profession of teaching.” Knowles (1980) expanded on his meaning of andragogy when he identified four assumptions for adult learners. Later, Knowles (1984) added two more principles to his work, creating six principles of andragogy. These six principles encompass andragogy in adult learning and offer useful concepts for designing and implementing successful professional development.

The first fundamental principle of andragogy is an adult’s need to understand why they are learning information (Knowles, 1984). Adults must understand how the

information applies to their current situation and what specifically they are going to learn. In professional development, this happens before teachers sign up for a professional development course by describing the material covered during the professional development course. Fitzgerald (2014) found teachers felt they learn best when given the objectives or purpose of the professional development course. Those leading professional development begin a class by outlining what the course will cover and the activities in which adults participate. Clear communication of the course goals is critical for effective professional development (Guskey, 2014). Understanding the information covered and how it applies to them is essential in planning professional development for teachers.

Adult learners also have a self-concept that drives them to be self-directed learners. Knowles (1975) defined self-directed learners as those identifying their own learning goals, what they need to learn these goals, and evaluating the outcomes. Setting goals and achieving them is possible when adults establish what they want to improve. Tough (1978) found that adults prefer to direct their learning path. In this way, teachers set their own professional learning goals each school year and choose professional development courses to help them achieve this goal. Moretti et al. (2013) found that teachers want to be responsible for their professional development instead of administrators. The Bill and Melinda Gates Foundation (2014) found that teachers want to choose their professional development courses. When teachers have their own learning goals it pushes them to be self-directed learners.

Each adult brings their own experiences to a learning opportunity that is an essential resource (Lindeman, 1961). Adults' experiences make their learning situation unique from children's (Kidd, 1973). Prior experiences help adults relate previous

information learned to new data shared with them (Knowles, 1980). Activating adults' prior knowledge before receiving further information during professional development courses is fundamental. Collins & Liang (2015) found adults felt their prior knowledge was not considered based on the content of the course and took offense. Previous experiences make new information more beneficial to adult learners and allow stronger connections between old and new information.

All adults have different social roles in which they are a part, and these roles continuously change throughout their lives (Knowles, 1980). An adult's readiness to learn information relates to the social roles they are a part of (Knowles, 1980). Aligning professional development with these different social roles and specific to the needs of individuals is essential.

In most cases, adults choose to learn information that will help them solve a problem or apply the information to their current situation. In this way, adults are problem-centered learners (Knowles et al., 1998). Fitzgerald (2014) found teachers felt they learned best when training involved problem-solving activities. This critical aspect of adult learning relates to the previous four principles of andragogy. Adults must desire to learn new information by knowing why they need it and how it will impact them. In the case of professional development, content needs to align with the goals that teachers are working towards. When professional development helps teachers improve their instruction or help them achieve a goal it becomes applicable, and teachers want to participate.

The final adult learning principle is an adult's motivation to learn new information. All adults, in some way, have an intrinsic motivation to learn (Knowles et

al., 2012), whether they want to improve something, solve a problem, better themselves personally, or even improve their life situation. Professional development helps teachers improve their instruction, earn a certificate to become more qualified, receive a stipend, or simply learn new information. Professional development courses should utilize teachers' intrinsic motivation to attend the course to improve their practices and maximize the course's effectiveness. Those planning professional development need to understand the different motivations that bring teachers to the professional development course.

Other theories associated with adult learning. In connection with Knowles' (1984) theory of andragogy is the principle of metacognition. Metacognition is the process of planning, monitoring, and evaluating one's learning (Schraw, 1998). Adults plan their learning by what is relevant to them and then assess the information learned and how well they learned it (Tough, 1978). When provided the opportunity to choose their professional development topics, teachers determine what they want to learn and decide if they have learned the information well enough or need more training in the specific area.

Another theory in adult education is Mezirow's (1991) transformative learning theory. A key component of transformative learning theory is how adults transform their thinking using their personal experiences to make meaning (Schraw, 1998). Teachers use their own teaching experiences to make meaningful connections to improve their teaching practices. Mezirow (1991) also outlines the different types of reflection adults perform, including content, process, and premise. These different types of reflection are

key as adults consider how information and experiences transform their thinking and practice.

Adult learning theories are relevant to teacher professional development because teachers are adults who learn in specific ways. Adults are motivated to do something to progress in their current position (Knowles, 1984). This idea of advancement relates to the workplace and, for teachers, improving their current practices. Metacognition allows for the understanding that adults plan out what they want to learn and demonstrate that they have learned it (Schraw, 1998). Transformative learning theory encompasses how adults make meaning from their learning and the reflection process adults go through to transform their thinking (Schraw, 1998). Each of these adult learning theories is important to understand the uniqueness of adult learners, ensuring professional development courses for adult teachers follow the practices of the ideas. Knowledge of adult learning theories is critical to composing professional development courses that meet the needs of adult learners. While the pedagogical techniques used in professional development are key to success, course designers must also understand the particularities of the content of the course. The following section discusses key elements of gifted and talented learning.

Gifted and Talented

Gifted and talented teachers support a special population of students in their classrooms. While teachers of gifted and talented can utilize professional development aimed at the broader school population, these teachers require specific professional development in order to support their students. Gifted and talented teaching standards set by the National Association for Gifted Children (2013) and the State of Texas outline

how to meet the needs of this special population to grant all students an equal opportunity for gifted education. The following sections discuss specific professional development for gifted and talented teachers including research on identifying gifted and talented students and their unique needs and characteristics that teachers must address in the classroom.

Professional development. Gifted and talented teachers require instruction on certain topics to meet the needs of the special population in their classrooms. Teachers in Texas must receive thirty hours of training for an initial certificate and an additional six hours each year following to teach gifted and talented students (Texas State Plan for the Education of Gifted/Talented Students, 2019). The initial 30 hours is a basic certificate that requires six hours in each of the following areas: Nature and Needs, Social and Emotional, Identification and Assessment, Differentiated Curriculum, and Creativity and Instructional Strategies.

Gifted and talented teachers must continuously participate in professional development to support the learning of this special population of students (National Association for Gifted Children & Council for Exceptional Children, 2013). Included in the development is the importance of differentiating instruction for gifted students (Callahan et al., 2014). Specific approaches for gifted and talented students target how to meet their specific needs met in the classroom (Baldwin, 2015), which are different than the needs of non-gifted students (Tomlinson, 2005). Quality professional learning regarding these needs informs teachers to identify students with disabilities who are also gifted and talented (Coleman & Johnsen, 2011). Unfortunately, even though teachers require specific training for gifted and talented students, teachers' professional

development practices are limited (Westberg et al., 1998). Meeting the needs of gifted and talented students requires teachers to have specific effective training.

Online professional development. Online gifted and talented professional development provides school districts and teachers with positive opportunities. One such reason for online deployment is the benefit of accessibility for teachers and instructors (Siegle, 2002). Online professional development on gifted and talented education allows for adaptability and differentiation based on the attendees. First, teachers can build collaborative relationships with colleagues across the country rather than just in their school district (Eriksson et al., 2012; Little et al., 2011). Second, the inclusion of current articles and differentiated learning approaches offer best practices to employ strategies learned (Eriksson et al., 2012). These aspects enrich professional development experiences, and the online environment enhances them. Overall, online professional development for gifted education teachers should include collaboration, asynchronous activities, and problem-solving activities (Hull et al., 2000). Professional development courses provided online for gifted and talented teachers provide beneficial learning opportunities. The following sections discuss specific ideas to include in professional development courses for teachers including how to identify gifted and talented students and how to address their specific needs and characteristics in the classroom.

Identifying giftedness. Researchers have developed numerous definitions and models to help understand and identify gifted students. Terman (1926) defined giftedness as scoring in the top 1% on an intelligence assessment. Renzulli (1979), however, began to associate giftedness with multiple characteristics. Renzulli created a multidimensional

approach to define giftedness in the Three Ring Conception of Giftedness. Renzulli's theoretical framework includes Above Average Ability, Task Commitment, and Creativity to show giftedness not just as an intellectual ability but includes different bits of intelligence. In 1982, Renzulli further divided giftedness into two types: creative giftedness and schoolhouse giftedness. Tannenbaum (1983) believed that giftedness relied on five connected factors: general ability, special ability, non-intellective facilitators, environmental influences, and chance. Gagné's (1995) Differentiated Model of Giftedness and Talent proposed developing student gifts into talents. Definitions and models of giftedness continue to evolve with time and research.

Characteristics of gifted students. Gifted and talented students have specific traits used to help identify them. Clark (2008) breaks gifted characteristics into four areas: cognitive, creative, affective, and behavioral. Cognitive traits include interest in problem-solving, large vocabulary, curiosity, persistence, and independence. Creative traits include a sense of humor, flexibility, self-acceptance, and creativeness. Affective traits include emotional depth, empathy, high self-expectations, the need for emotional support, and a sense of justice. Characteristics of behavior include enthusiasm, high energy, constantly questioning, impulsiveness, high levels of frustration, and temper. To consider a student gifted, they do not need to possess all of these traits (Clark, 2008). Gifted students may change their behaviors, and characteristics can change as they grow and learn to adapt to them. The traits of gifted students can be grouped by cognitive and non-cognitive characteristics (Heckman et al., 2006). Cognitive characteristics refer to ability such as on an achievement test, while non-cognitive characteristics refer to behaviors, skills, and attitudes that cannot be measured on an achievement test (Farrington et al.,

2012). Jones et al. (2016) found that the characteristics within the two categories are not equally exclusive to identifying giftedness.

Research has also shown specific traits of gifted and talented students related to their social and emotional lives. Gifted and talented students encounter numerous social and emotional difficulties due to their specific traits (Eren et al., 2018). Some gifted children can experience a difficult time communicating with others (Roedell, 1984). Research also shows gifted students are victims of bullying (Peterson, 2009). Metha and McWirther (1997) found gifted students experienced depression while under stress. Social-emotional difficulties have contributed to many gifted students being diagnosed with Attention Deficit and Hyperactivity Disorder (ADHD; Webb et al., 2016).

Needs of gifted students. Due to the unique characteristics of gifted and talented students, they have specific instructional needs in the classroom setting for success. An instructional strategy used for gifted and talented students is differentiation. Gifted and talented students need differentiated instruction for their specific learning needs (Mulrine, 2007; Tomlinson & Imbeau, 2010; Spencer-Waterman, 2014). Gifted students must also have their social and emotional needs met. Freeman (1985) found supporting gifted students' emotions important to reach their potential. Meeting the needs of gifted students' social and emotional intelligence is imperative (Manring, 2013). The characteristics of gifted students require instructional and emotional needs to support students.

Synthesis of Literature

Teacher professional development courses improve not only teacher practices but also student achievement. The use of researched effective strategies helps to ensure

courses are meaningful for teachers. Following online learning strategies confirms courses are organized and delivered appropriately for teachers. The inclusion of andragogy is essential to safeguard teachers' learning as adults. To ensure online gifted and talented professional development courses are beneficial for teachers, district leaders must evaluate the courses for their content of effective researched strategies.

Current research supports specific strategies and the importance of course evaluation; however, creating a tool that includes all the strategies for professional development, online teaching, and andragogy has not supported course evaluation. This case study is critical because professional development is imperative for teacher growth, and implementing adult learning strategies into professional development courses ensures the consideration of teachers as adult learners. This case study fills that gap in the literature by understanding the current use of andragogy in online gifted and talented professional development courses for teachers. This case study researches professional development that includes adult learning characteristics to guide school districts in providing effective online professional development courses for gifted and talented teachers.

Theoretical Framework

The theoretical framework for this study employed a three-pronged approach. Research from the fields of effective professional development strategies (Darling-Hammond et al., 2009; Garet et al., 2001; Knowles, 1980; Martin et al., 2014), online teaching strategies (Anderson et al., 2001; Cheung, 1998; Liu et al., 2010; Wu & Hiltz, 2004; Young, 2006), and adult learning theory (Knowles, 1975, 1980, 1984; Knowles et al., 2012) grounded the theoretical framework for the study. The overlap of the three

research fields was the lens used to examine the online gifted and talented professional development courses. Figure 1.1 shows how these three distinctive fields form the theoretical framework for data analysis. These three components merged to generate a unique approach because their combination has not previously occurred. Each component addressed an essential aspect necessary for professional development program leaders to understand and improve programs. They are further described below.

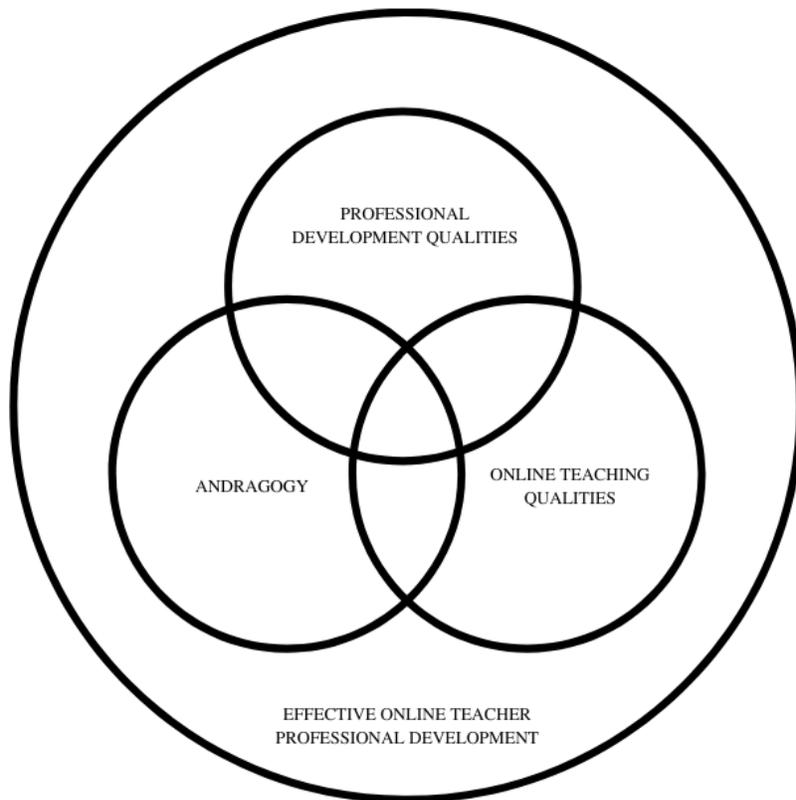


Figure 1.1. Theoretical framework.

Firstly, the following characteristics of effective professional development informed this study: effective professional development aligns with teachers' goals (Johnson, 2018), professional development courses implement active learning (Garet et al., 2001), collaboration amongst teachers occurs during professional development

(Martin et al., 2015), and professional development happens over a sustained amount of time (Darling-Hammond et al., 2009). These characteristics of effective professional development provide a lens to learn more about how the gifted and talented professional development courses utilize effective professional development strategies.

Secondly, in the area of online teaching strategies, the researcher applied the following qualities for this study: online professional development courses allow teachers to discuss the information learned through a chat option or verbally (Wu & Hiltz, 2004), online professional development enables teachers to evaluate the professional development course (Cheung, 1998), and online professional development courses include asynchronous and synchronous activities to keep teachers engaged throughout the learning process (Liu et al., 2010). These online teaching strategies contributed to the theoretical framework of the study by providing a way of understanding how the online platform creates specific challenges for professional development courses.

Thirdly, the researcher utilized five of the six principles of andragogy, as outlined here. First, adults must understand why they are learning the information and how it impacts them (Knowles, 1984). Second, adults are self-directed learners who create and accomplish their own goals (Knowles, 1975). Third, each adult brings their own prior experiences to a new learning opportunity as a resource (Knowles, 1980). Fourth, considering how adults are part of different social roles when engaging in a unique learning experience informs activities and strategies (Knowles, 1980). Fifth, adults are problem-centered learners who want to learn further information to change their current situation (Knowles et al., 2012). The sixth principle of andragogy, focusing on adults as intrinsically motivated for the study, was not included because the research design would

not reveal adults’ motivations for attending the course. Utilizing these five principles of andragogy was the third component of the study’s theoretical framework.

Implementing the three areas of the research—effective professional development strategies, online teaching strategies, and adult learning theories—to the theoretical framework for this case study provided the researcher with a unique opportunity to investigate online professional development courses. The lens which the researcher used to conduct the study implemented specific pieces from each of the three categories outlined in the theoretical framework. Table 1.1 illustrates the research grounding the elements of the theoretical framework for this study.

Table 1.1

Elements of the Theoretical Framework

Theoretical Framework	Element	Research
Effective Professional Development	Continuous Course	(Darling-Hammond et al., 2009)
	Prior Knowledge Activated	(Knowles, 1980)
	Active Learning	(Garet et al., 2001)
	Collaboration	(Martin et al., 2015)
Online Teaching Strategies	Discussion	(Wu & Hiltz, 2004)
	Asynchronous	(Liu et al., 2010)
	Synchronous	(Liu et al., 2010)
	Evaluation	(Cheung, 1998)
	Organized Interaction	(Anderson et al., 2001) (Young, 2006)
Principles of Andragogy	Explanation for Learning	(Knowles, 1984)
	Self-Directed Learning	(Knowles, 1975)
	Prior Experiences	(Knowles, 1980)
	Social roles	(Knowles, 1980)
	Problem-Centered	(Knowles et al., 2012)

Conclusion: Purpose of the Study

The purpose of this case study was to observe online professional development courses for gifted and talented teachers in the Quincy Independent School District and to learn about the ways in which the course implemented the effective research strategies of online instruction, professional development, and the relation of these strategies to andragogy. As part of the data collection process, the researcher developed an observation tool for the Quincy Independent School District personnel to use to better understand the effectiveness of the content and delivery of online gifted and talented professional development courses. The creation of the observation tool occurred using research surrounding effective professional development, online teaching strategies, and five of the six principles of andragogy. Using this tool and observation field notes, the research observed four online gifted and talented professional development courses to learn more about how the theories forming the theoretical framework operated in one school district's professional development.

The findings of this study will inform district leaders to improve the effectiveness of teacher professional development courses in the Quincy Independent School District. Using these findings, district leaders may be better prepared to implement effective professional development strategies, online learning strategies, and adult learning theories outlined in the theoretical framework to make gifted and talented professional development more effective for teachers throughout the district. The following chapter details the research design and methodology followed throughout the research process.

CHAPTER TWO

Methodology

Introduction: Research Questions

Considering the specific needs of gifted and talented students in Texas, researched effective professional development strategies, online learning strategies, and adult learning theory, the current problem of practice focused on observing the gifted and talented professional development courses offered by the Quincy Independent School District teachers. This case study sought to address the following questions:

1. What effective strategies were employed by gifted and talented professional development online courses?
2. How were effective professional development strategies used in online professional development courses for elementary teachers related to the principles of andragogy?

Researcher Perspective and Positionality

As a fourth-grade gifted and talented teacher in the Quincy Independent School District, I have attended and participated in the gifted and talented training investigated within this research. My own experiences of district professional development have been both positive and negative, which is why I chose to research the district's gifted and talented online professional development courses. I chose the research to understand better how professional practices can continue to improve in the community.

Quincy Independent School District is where I grew up and received formal education from kindergarten through 12th grade and where I graduated from high school. This district has been my home for over twenty years and is a place I invest. I want the

community to continue to improve. To do this, I examined the district's needs. One of those needs, from my experience, was the professional development course offered for teachers. Through this research, I hope the district implements a policy for professional development practices in our district to improve the professional development of teachers.

The courses studied are taught by people I have worked with and know in the district. This connection to the research is strong. It is essential to identify this connection to the study before beginning to ensure that my bias and perspective of district professional development do not interfere with the research process. I follow a post-positivism worldview throughout the study (Creswell & Poth, 2018). I conducted the study to understand teacher professional development in my district better. The research uses an observation tool and uses a priori theory to develop the theoretical framework (Creswell & Plano Clark, 2018). The use of post-positivism allows for an unbiased opinion on the professional development courses I investigate.

Theoretical Framework Application

The researcher utilized three different components in the theoretical framework for this study: researched effective professional development strategies, researched online teaching strategies, and principles of andragogy. Based on the literature review, the researcher used the following elements of each component for the theoretical framework. The strategies essential for effective professional development are continuous courses (Darling-Hammond et al., 2009), participants' prior knowledge being activated (Knowles, 1980), participants have the opportunity for active learning (Garet et al., 2001), and participants collaborating with others (Martin et al., 2015). The most effective

online teaching strategies provide participants with a discussion opportunity (Wu & Hiltz, 2004), asynchronous and synchronous activities (Liu et al., 2010), a course that is easy to follow (Anderson et al., 2001), the interaction between the facilitator and participants (Young, 2006), and participants an opportunity to evaluate the course (Cheung, 1998). The key principles of andragogy included in professional development are an explanation for learning (Knowles, 1984), opportunities for self-directed learning (Knowles, 1975), sharing prior experiences (Knowles, 1980), social roles considered (Knowles, 1980), and problem-centered activities (Knowles et al., 2012). The researcher combined the different elements to form the theoretical framework necessary to view the research to and investigate teacher learning in online gifted and talented professional development courses.

The theoretical framework helped further understand the effective strategies used in the online gifted and talented professional development courses. The framework addresses the representation of andragogy during the professional development courses and its impact on the effectiveness of the professional development course. Notably, the theoretical framework helped create the Research-Based, Online Professional development that is Effective observation tool (ROPE) to observe the gifted and talented online professional development courses. The researcher created the ROPE using all the components of the theoretical framework. The steps followed in creating the observation tool are found in Figure 2.1.

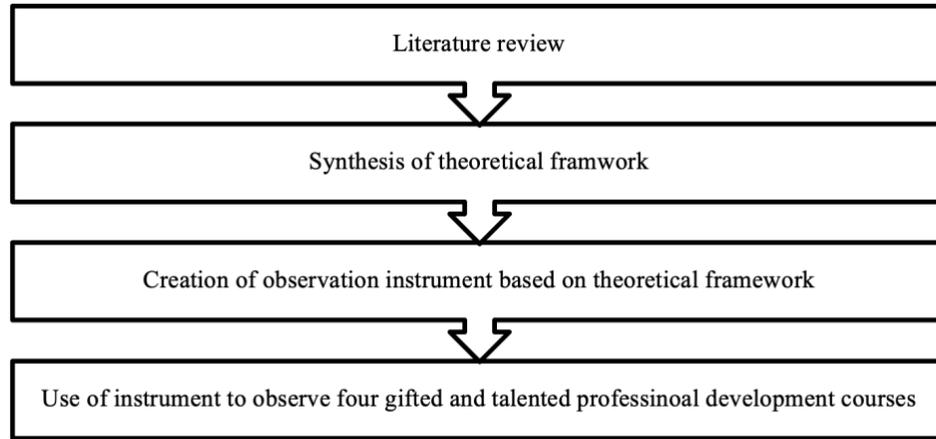


Figure 2.1. Steps in observation tool creation.

The researcher selected a case study based on the theoretical framework for the research. Choosing a case study allowed the researcher to focus on the three components and their impact on the effectiveness of online gifted and talented professional development courses in the Quincy Independent School District (Yin, 2018). The different components of the framework came together to examine the professional development courses and their effectiveness through the specific lens developed with effective professional development strategies, online learning, and andragogy. The theoretical framework informed the creation of the ROPE observation tool as well as the topics the researcher chose to investigate during the observed professional development courses.

Before beginning the observations, the researcher established initial codes to analyze the data using the theoretical framework (Creswell & Clark, 2018). The researcher chose keywords found in the three theoretical framework components of effective professional development, online teaching strategies, and principles of

andragogy. The established initial codes created by the researcher using the a priori theoretical framework are listed in Table 2.1.

Table 2.1

Established Codes with Theoretical Framework

Connection to Theoretical Framework	Initial Code Utilized
Effective Professional Development	Collaboration Active Learning
Online Teaching Strategies	Discussion Activities Interaction
Principles of Andragogy	Objectives Problem-Centered

Research Design and Rationale

A single-case study allowed the researcher to understand the best effective professional development strategies and their impact on teachers (Yin, 2018) and “provide an in-depth understanding” (Creswell & Poth, 2018, p. 100) of the professional development courses offered to teachers. The study provides details about the observed strategies implemented during online gifted and talented professional development courses for teachers and proposes activities for non-observed properties to improve course design.

The single-case study included four units of analysis (Yin, 2018). For the study, the four units were four online gifted and talented professional development courses. The researcher used an a priori framework to code data into the categories of the theoretical framework. A case study allowed the researcher to conduct a sub-unit analysis for each of

the four courses and followed by a framework analysis to converge the data into similarities and differences.

Site Selection and Sampling

The study occurred with one school district in the state of Texas. This section outlines the research site and sampling technique utilized to offer context for the study. The student population and teacher demographics highlight the representations of those within the district. The researcher chose this district because the researcher currently teaches in the district and was granted access to district-provided recordings of online gifted and talented professional development courses. Following the depiction of the site, the researcher outlines how the unit of analysis provided the specific sources of evidence from the data.

Site

The Quincy Independent School District, located in Quincy, Texas, defined the site for this study. The district is located in the Dallas-Fort Worth Metroplex. The district encompasses 94 square miles and serves students across eight metroplex cities. During the 2020–2021 school year, the district served 35,582 students across 49 different campuses. The district reports four main subgroups of students including economically disadvantaged, English language learners, students who receive special education services, and gifted and talented students. Table 2.2 shows the demographics of the students.

The district employed 4,374 staff members, 2,278 of which were full-time teachers. Female teachers are the highest reported gender category of teachers over males. White is the primary race of teachers employed by the district. The highest

percentage of a degree obtained by teachers is a bachelor's degree. Table 2.3 lists demographics for full-time teachers.

Table 2.2

Quincy Independent School District Student Demographics

Demographics	Student Enrollment
Gender	
Male	51.7%
Female	48.3%
Ethnicity	
African American	30.8%
Asian	7.7%
Hispanic	26.2%
American Indian	0.3%
Pacific Islander	0.1%
Two or More Races	4.8%
White	30.1%
Identified Subgroups	
Economically Disadvantaged	43.7%
English Language Learner	10.3%
Special Education Services	10.0%
Gifted Student Population	6.8%

Table 2.3

Quincy Independent School District Full-Time Teacher Demographics

Demographic	Percentage
Gender	
Male	24.2%
Female	75.8%
Ethnicity	
African American	17.5%
Asian	1.9%
Hispanic	11.3%
American Indian	0.3%
Pacific Islander	0.0%
Two or More Races	2.4%
White	66.6%
Highest Degree Earned	
No Degree	0.3%
Bachelor's degree	68.8%
Master's degree	29.8%
Doctorate Degree	1.1%

This site was chosen because it offers free professional development courses to all its teachers throughout the year. The district also provided an online format as an option for these courses. Specifically, the district provided specific training for gifted and talented teachers to meet their required six hours. Teachers chose between numerous courses offered but were not required to follow any set program of study.

Unit of Analysis

The focus of this study was on the implementation of online professional development for gifted and talented instruction. The district provided free online gifted and talented professional development courses for elementary teachers during the summers of 2020 and 2021. The researcher used purposive sampling (Creswell & Creswell, 2018). Four offerings for online gifted and talented professional development courses from the district options formed the units of analysis for this case study. Two of these occurred in the summer of 2020 and two from the summer of 2021, and district enrollment showed they were the most attended in the summers, respectively. Each course outlined in this section met the unit of analysis criteria of deployed through an online platform, categorized as professional development, and focused on gifted and talented instruction.

The first course the researcher chose, SCAMPER and RAFT, focused on differentiation strategies for teachers to use in their classrooms for gifted and talented students. The name of the course alluded to the two acronyms which promoted differentiation strategies. The acronym, SCAMPER, symbolized the strategy of Substitute, Combine, Adapt, Modify, Put to another use, Eliminate, and Reverse. The facilitator showed teachers how to use the strategy in the classroom and the various

subjects that teachers could apply SCAMPER. With the acronym RAFT, the other instructional strategy targeted the approach of Role, Audience, Format, and Topic. This strategy is applied to writing as a method to incorporate higher-level thinking skills. An advanced academic instructional coach employed by the Quincy Independent School District instructed the course.

During the second course chosen, Creativity with Adobe Spark, the course facilitator highlighted the different functions Adobe Spark allows teachers to use in the classroom. The facilitator shared different activities and project ideas for teachers relevant to facilitating instruction for gifted and talented students. The course facilitator walked through how to use the tools provided by the paid version the district bought for all teachers. An educational technology coordinator employed by the district facilitated this course.

Strategies for Cognitive Engagement was the third course selected as a unit of analysis. This course provided teachers with an overview of the different levels of cognitive engagement and how to engage gifted and talented students in the higher levels of cognitive engagement using differentiation in the classroom. The course provided fifteen strategies for teachers to use found in a book entitled *50 Strategies to Boost Cognitive Engagement* by Rebecca Stobaugh (2019). The same advanced academic instructional coach who facilitated SCAMPER and RAFT also facilitated this course.

The fourth course chosen, Serving the Underserved, focused on providing teachers with an understanding of the different types of giftedness they may see in the classroom. The course focused on teaching teachers about gifted students who may also be diagnosed or labeled with another such as dyslexia, special education, or other

diagnoses previously tested. A different advanced academic instructional coach for the district than two of the other courses led this professional development.

The courses utilized Microsoft Teams, with access granted through teachers' district accounts. The Microsoft Teams platform incorporated an online video for attendees to view the instructor and other teachers present in the course. The district offered two options for each course. The first choice was to attend the course during a live session. The second choice was provided after the live session when the district posted the course on the professional development site. Teachers who did not participate live could watch the session to earn their professional development credits. Depending on the mode of instruction, live or recording, teachers participated in synchronous or asynchronous learning, respectively. Teachers who selected the second option of viewing the recording of the professional development course had to take an assessment regarding the course content afterward to receive credit for attending the synchronous online course.

The site and unit of analysis defined the context for the study. In the following section, the data procedures depict what data were included in the study and how they relate to answering the research question. In all, the four courses allowed the same procedures to be followed, which created continuity across the units of analysis.

Data Collection Procedures

The data collection process began with the researcher creating an observation tool (Figure 2.3) for effective qualities of professional development, online teaching, and andragogy, based on the theoretical framework to observe four recorded gifted and talented professional development courses offered by the Quincy Independent School

District to teachers during the summers of 2020 and 2021. The researcher then observed the four courses and took field notes. Then the researcher used the observation tool to summarize the field notes of the observations. Following, the researcher transcribed each course for analysis. Figure 2.2 illustrates the steps in the data collection process followed by the researcher.



Figure 2.2. Steps in data collection.

This case study consisted of two different types of data collection samples. The first was the observation of professional development courses offered by the school district for teachers teaching gifted and talented students utilizing an original observation tool (ROPE) for summarizing field notes. The second was the transcription of the recorded professional development sessions. The researcher transcribed the audio from the whole, four-hour long courses. The researcher chose four online gifted and talented professional development courses provided by the Quincy Independent School District. The district presented courses during the summer of 2020 and courses during the summer of 2021. The researcher utilized the ROPE observation tool to complete direct observations of the four courses (Yin, 2018). After observing the courses and completing the observation tool, the researcher transcribed the recordings of the four courses.

Creation of the ROPE observation tool. Before data collection could begin, the researcher implemented the following steps to draft and create the ROPE observation tool used to observe the teachers' professional development courses (Yin, 2018). The observation tool is found below (Figure 2.3) and in Appendix A.

THE ROPE <i>An Observation Tool to Observe an Online Professional Development Course</i>		
Categories of Effective Instructional Practices	<i>Observed in Session</i>	<i>Observer Descriptive Notes</i>
Effective Professional Development		
Continuous course	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Prior knowledge activated	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Opportunities for active learning	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Collaboration with others	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Online Teaching Strategies		
Discussion opportunity	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Asynchronous Activities	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Synchronous Activities	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Evaluation of course	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Organized course easy to follow	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Interaction between the facilitator and teachers	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Principles of Andragogy		
Provided explanation for why teachers were learning the information	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Opportunities for teachers to be self-directed learners	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Teachers shared prior experiences	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Different social roles considered	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Problem-centered activities	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	

Figure 2.3. The ROPE observation tool.

This observation tool had a series of statements aligned with the essential aspects of effective professional development, online learning strategies, and adult learning theory based on the theoretical framework. In the column to the right of each statement, the observation tool included boxes where the observer could indicate whether the researcher observed the specific aspect during the course. The third column of the tool offered an open space where the observer could add notes describing and elaborating on how each item in the observation tool pertained to the course.

The effective professional development strategies included on the observation tool included the following practices based on the theoretical framework: activating prior knowledge, collaboration, active learning, and continued engagement. Activating teachers' prior knowledge before learning new information and active learning described in the theoretical framework ensured the researcher used the ROPE to record all active learning opportunities during professional development. Collaboration is an effective strategy for teachers, which warranted including it in the ROPE. The researcher used the ROPE to indicate if this was a standalone course or a piece of a more extensive program to determine if the professional development continued over a sustained amount of time.

In addition to the strategies for effective professional development, the ROPE offered a way of examining the effective online teaching strategies presented in the theoretical framework, including providing participants with a discussion opportunity, asynchronous and synchronous activities, a course that is easy to follow, the interaction between the facilitator and participants, and allows participants the opportunity to evaluate the course. The observation tool allowed the research to indicate if the teachers had the opportunity to discuss what they learned verbally or within a chat box during the

course. The ROPE included space to indicate the use of both asynchronous and synchronous activities that occurred during the course. The ROPE also offered a space to record whether or not the teachers could evaluate the course after taking it. The researcher used the observation tool to identify the organization of the course, easiness to follow for teachers, and if there was an interaction between the facilitator and teachers in attendance of the live professional development course.

The utilization of the principles of andragogy is the final piece of the theoretical framework integrated into the ROPE. The ROPE identified if providing an explanation for learning the information and if the course allowed self-directed learners. The ROPE identified if teachers shared their related prior learning experiences and considered their different social roles in the organization of the course. Finally, the researcher used the ROPE to indicate if problem-centered activities happened during the professional development course. Using these aspects of the theoretical framework—effective professional development strategies, researched online teaching strategies, and principles of andragogy—the researcher designed the ROPE to investigate the recorded professional development courses.

Use of ROPE observation tool. Once the researcher drafted the observation tool, data collection continued with the researcher using the ROPE to observe one of the professional development courses offered in the summer of 2020. The researcher observed the first 2020 course titled ‘SCAMPER and RAFT.’ To observe the first course, the researcher downloaded the file provided by the school district to the researcher’s password-protected laptop. The researcher sat through the entire hour-long course observing and taking field notes using the observation tool. The ROPE was printed on

paper for the researcher to take notes on while observing and then transcribed onto an electronic copy. The completed observation tools are in Appendix B. The researcher watched the course a second time to ensure correct documentation of all strategies. The researcher used the ROPE as formal data collection method to directly observe the four online gifted and talented professional development courses (Yin, 2018).

To demonstrate the tools' reliability, another researcher used the same observation tool to record field notes on the 'SCAMPER and RAFT' course during the summer of 2020. Inviting another reviewer and comparing results allowed the opportunity to confirm the observation tool's reliability (Yin, 2018). The second researcher was selected based on their teaching background and experience in professional development courses. The researcher introduced the second researcher to the observation tool by sharing the theoretical framework and background in creating the ROPE. The researcher and second researcher met to discuss and compare the findings of the course using the observation tool. The researcher revised the ROPE as needed based on the discussion of the observation tool with the second observer. The revision of the ROPE included changing the first professional development strategy to simply read 'continuous course' on the observation tool as observed or not observed. The first version read 'continuous or single course,' which discussion with the observer highlighted a need for change to make the tool clearer.

After confirming the tool's validity, the researcher used the observation tool to create field notes from the remaining three professional development courses. Yin (2018) offered the logic of replication when using an observation tool during case study research. The researcher used the same observation tool to conduct direct observation

when watching the recordings of the four gifted and talented professional development courses.

Transcription. After observing the four professional development courses, taking field notes, and completing the observation tool, the researcher transcribed the recordings of the professional development courses. The researcher uploaded the recordings into Otter.ai to electronically transcribe the courses. The researcher read through the transcriptions while watching the recorded sessions to check for accuracy before uploading the transcriptions into NVivo.

Conclusion. In summary, the data collection process consisted of multiple steps. After establishing the theoretical framework, the researcher created an observation tool to observe online gifted and talented professional development. The researcher took field notes and observed while completing the observation form for one course in the 2020 summer. A second researcher then validated the observation form by watching the same course and using the observation form. Then the researcher observed the remaining three online gifted and talented professional development courses and took field notes, and then completed the observation form. Following the observation of each of the four professional development courses, the researcher transcribed the courses using Otter.ai. The following section outlines the data analysis steps taken by the researcher.

Data Analysis Procedures

The data analysis occurred in multiple steps in tandem with the phases of data collection. The phases in the qualitative data analysis included: “(1) prepare for the data analysis; (2) explore the data; (3) analyze the data; (4) represent the data analysis; (5)

interpret the results; (6) validate the data and results” (Creswell & Plano Clark, 2018, pp. 210–211). The steps of data analysis, shown in Figure 2.4, followed the recommendations for any case study. While each step served a unique purpose, they often happened at the same time, or as Creswell and Poth explained, the phases in data analysis “are interrelated and often go on simultaneously in a research project” (Creswell & Poth, 2018, p. 185).

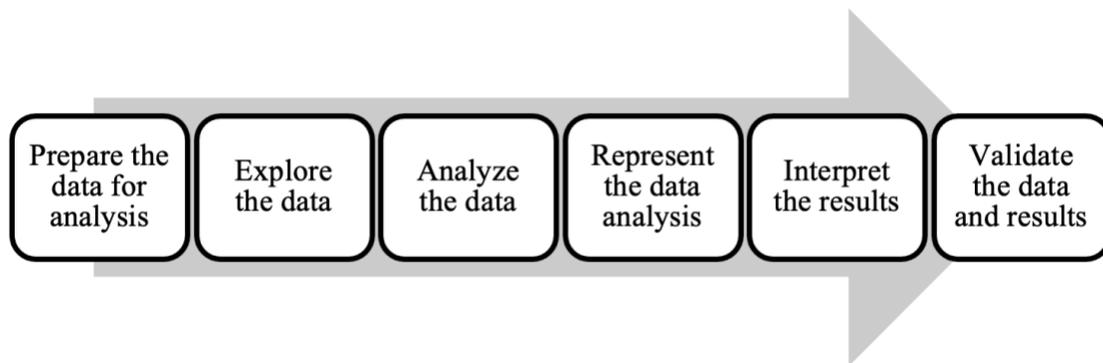


Figure 2.4. Case study steps in data analysis.

To prepare the data for analysis, the researcher uploaded the course recordings into Otter.ai. The program transcribed the recordings into a Word document. The researcher checked the four recordings’ transcriptions for accuracy (Creswell & Clark, 2018). After ensuring the transcriptions were accurate, the researcher prepared the data by entering the transcriptions into NVivo.

When exploring the data, the researcher read through all the field notes, completed observation forms, and transcriptions. While reading through the transcriptions the researcher wrote memos to begin exploring the data (Creswell & Poth, 2018). The memos allowed the researcher to begin making connections in the transcriptions with the initial codes established. After recording memos on the transcriptions of the four courses, the researcher began the coding process. The researcher

read through the transcriptions, finding sentences or paragraphs that matched the initial codes. Using NVivo allowed the researcher to highlight the exact text from the courses and assign code words to the various entries based on the established codes through the theoretical framework. The researcher created a codebook to analyze the transcriptions and field notes (Creswell & Poth, 2018). The codebook for effective professional development is found in Table 2.4, the codebook for online teaching strategies is found in Table 2.5, and the codebook for andragogy is found in Table 2.6.

Following data exploration, the researcher examined the observation forms for each of the four online gifted and talented professional development courses. The observation forms included what the researcher observed and did not observe in the content during the observation. The researcher represented this data in tables to show the observed properties during the observations. The researcher discussed what they observed and provided examples of what they expected to observe on the observation tool.

Interpreting the results began with the researcher summarizing the major findings in a framework analysis and explaining how the findings answered the research questions (Creswell & Clark, 2018). This being a qualitative study, the researcher brought in their personal view of the data and its impact on online gifted and talented professional development courses. The researcher interpreted the results and shared the current study's limitations. The researcher also provided implications for future research to conduct to further the information provided by the study.

The researcher triangulated the data using field notes, an observation tool, and codes established through the course transcriptions to validate the data (Yin, 2018). The

researcher captured observation evidence by video recordings of the four online gifted and talented professional development courses and field notes. To check for the validity of the data, the researcher ensured that the information was transferable to other studies and that other researchers could confirm the findings.

Table 2.4

Codebook for Effective Professional Development Qualities

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Effective Professional Development	Collaboration	Any evidence where participants work together	When the facilitator is discussing students working together in the classroom		When course participants are collaborating with each other	
	Active Learning	Any evidence where participants are actively completing a task	When the facilitator is discussing what tasks students can do in the classroom		When course participants are actively completing an activity	

Table 2.5

Codebook for Online Teaching Strategies

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Online Teaching Strategies	Discussion	Any evidence that participants are speaking to each other or the facilitator	When the facilitator discusses students discussing in the classroom		When course participants are having a conversation between each other	

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
	Activities	Any evidence where participants are completing a task	When the facilitator discusses students completing a task		When course participants are asked to complete an activity	
	Interaction	Any evidence that participants are interacting with each other or the facilitator	When the facilitator discusses students interacting in the classroom		When course participants interact with each other or the course facilitator	

Table 2.6

Codebook for Andragogy

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Andragogy	Objectives	Any evidence that the course facilitator discussed the course objectives	When the course facilitator discusses objectives in the classroom		When the course facilitator discusses the course objectives	
	Problem-Centered	Any evidence a problem was used as a tool for learning	When the course facilitator discusses problems in the classroom		When the course participants discuss and solve a problem	

In summary, the researcher used within-case and framework analysis practices to analyze the data (Yin, 2018). The researcher observed four online gifted and talented professional development courses offered during the summers of 2020 and 2021. The researcher conducted a within-case analysis for each of the four subunits of analysis.

After doing so, the researcher moved from within-case analysis to framework analysis to converge the data.

Trustworthiness and Authenticity

This case study used multiple sources of evidence to increase construct validity. Transcripts from each unit of analysis provided precise documentation of the exchanges that occurred. Additionally, direct observations generated interpretive documentation through field notes and the completed observation tool. Using the various sources of direct observations and field notes for evidence supported the increase in the study's construct validity (Yin, 2018). The researcher also maintained a chain of evidence to increase construct validity by providing all data found throughout the research process and ensured that all the data was considered in the findings (Yin, 2018).

Another approach to trustworthiness was the implementation of corroborating observation scores to ensure reliability. In this study, the researcher asked another professional researcher to review the observation tool and draft of the case study report to ensure reliability (Yin, 2018). The researcher followed a case study protocol to guide the data collection process to improve validity (Yin, 2018).

Ethical Considerations

Before beginning the study, the researcher obtained permission from Baylor University to oversee the study as well as permission from the school district and individuals at the site (Creswell & Poth, 2018). First, the researcher submitted this research proposal to the Office of Research Compliance for review and received a non-human subjects research determination through Baylor University to ensure the study followed guidelines for ethical research (Creswell & Poth, 2018). Then the researcher

approached district officials within the Quincy Independent School District about the study and obtained permission from the Quincy Independent School District to watch gifted and talented professional development recordings.

Throughout the study the researcher used multiple steps to protect the courses and participants. The researcher stored the transcriptions and recordings of professional development courses on a password-protected device. The researcher used a pseudonym for the school district. The researcher's post-positivist view made it important to remain unbiased by protecting the information throughout the research process.

Limitations and Delimitations

This case study had certain limitations, including sample size and course selections. The sample size of the case was small, including only four professional development courses as subunits of analysis. Another significant limitation that impacted the study was the impact that COVID-19 had on the public education system. Due to the pandemic, schools and professional development learning moved entirely online for the school district. Therefore, the study focused on online professional development courses since in-person courses were not occurring during the summers of 2020 and 2021. The district continued to keep teacher training virtual to protect the health and safety of staff members. The district asked teachers and administrators to continue to hold online meetings instead of in-person continuing into the 2021 school year.

To provide bounds, the researcher delimited the study by focusing only on the courses which offered an original live session. While the professional development was available for viewing after the live session, the researcher could not focus on anyone who took the course after the initial recording. The case was also bound by the inclusion of

only online courses and those designed for teachers looking to update their gifted and talented professional development hours. The researcher focused on summer online gifted and talented professional development courses from 2020 and 2021. Focusing specifically on gifted and talented professional development provided by only one school district is a delimitation of the study. Further, the researcher did not interview teachers for the study due to the research focusing on the content of the online gifted and talented professional development courses.

Conclusion

This case study examined the effective strategies utilized in online gifted and talented professional development courses offered by the Quincy Independent School District to elementary teachers and their connection to andragogy. Using a case study approach allowed the researcher to understand effective professional development strategies in separate subunits of analysis and find similarities and differences among the four courses. The results of this study have implications for improving online gifted and talented professional development courses for teachers. To that end, the following chapter examines the results and discusses the implications of the research findings.

CHAPTER THREE

Results and Implications

Introduction

This research followed a case study design to understand the use of effective strategies during four online gifted and talented teacher professional development sessions. The chosen method allowed the researcher to understand the similarities and differences in online gifted and talented professional development courses for teachers offered during the summers of 2020 and 2021 during the COVID-19 pandemic. The researcher utilized an observation tool created using research on effective professional development strategies, online teaching strategies, and adult learning theory. With the theoretical framework, this tool helped the researcher to understand what strategies were used within the Quincy Independent School District professional development for gifted and talented teachers during online professional development.

Using multiple sources, including, field notes taken while observing the courses (Yin, 2018), direct observations using the observation tool (Yin, 2018), and transcriptions of the courses, the researcher pursued to answer the following research questions:

1. What effective strategies were employed by gifted and talented professional development online courses?
2. How were effective professional development strategies used in online professional development courses for elementary teachers related to the principles of andragogy?

This chapter discusses the study's unit of analysis, the data derived from field notes taken for each course, direct observations using the observation tool, and

transcriptions, and how the findings related to the study's research questions. The findings from the direct observations, field notes, and transcriptions of the four online gifted and talented professional development courses allowed the researcher conduct a within-case analysis of each of the four courses. Next, the researcher conducted a framework analysis to relate the courses to each component of the theoretical lens. Finally, the results provided answers to the study's research questions about the effective strategies used during online gifted and talented professional development courses for the Quincy Independent School District teachers and their relation to the principles of andragogy.

Data Description and Unit Analysis

The researcher utilized purposive sampling to select gifted and talented courses offered online to teachers during the summers of 2020 and 2021. Each of the courses (Table 3.1) identified in this chapter are embedded units of analysis within the case study and enhance the researcher's understanding of the effective strategies employed in online gifted and talented courses for teachers. The researcher also examined which properties were not observed during the professional development courses to understand improvement areas better. To improve these areas of instruction, the researcher provides examples of activities possible to represent what was noticed during the observations.

The online gifted and professional development courses within this study consisted of four online professional development courses that the Quincy Independent School District offered for gifted and talented teachers. The courses were presented live online for teachers over the summer and recorded for teachers who could not attend to watch the recordings to receive credit. The researcher watched the recordings of the

online professional development gifted and talented courses. Due to the recording of the courses and the ability to watch later by teachers, the researcher could not determine details about the teachers who participated in the online courses. Each course lasted for one hour of instruction. The district provided all courses to teachers live through the districts’ Microsoft Teams platform and recorded through the district’s professional development website.

During the courses, facilitators focused course content on the specific needs of gifted and talented students in the classroom. The SCAMPER and RAFT course focused on an instructional strategy to challenge and extend the learning of gifted and talented students. In the Creativity with Adobe Spark course, teachers learned activities gifted and talented students could complete in the classroom to differentiate their learning opportunities. Strategies for Cognitive Engagement gave teachers tools to engage gifted and talented students based on their specific learning abilities. Serving the Underserved taught teachers the importance of identifying and supporting all gifted and talented students in the classroom based on their specific learning needs.

Table 3.1

General Descriptions for Each Unit of Analysis

Course	Year	Facilitated By
1: SCAMPER and RAFT	2020	Advanced Academics Instructional Coach
2: Creativity with Adobe Spark	2020	Educational Technology Trainer
3: Strategies for Cognitive Engagement	2021	Advanced Academics Instructional Coach
4: Serving the Underserved	2021	Advanced Academics Instructional Coach

Course 1: SCAMPER and RAFT

The first 2020 course focused on learning about SCAMPER and RAFT as a teaching strategy to differentiate learning in the classroom for gifted and talented students. A district advanced academic instructional coach led the course. The course was offered to teachers through Microsoft Teams and lasted one hour. Teachers received one hour of continuing education and one hour towards gifted and talented certificate renewal for attending the course.

Effective professional development. The strategies essential for effective professional development are continuous courses, participants' prior knowledge is activated, participants have the opportunity for active learning, and participants collaborate with others. While taking field notes, the researcher observed participants engaged in active learning. Table 3.2 illustrates the effective professional development strategies observed by the researcher during the SCAMPER and RAFT course.

Table 3.2

Course 1: Effective Professional Development Observed Properties

Effective Professional Development Quality	Observed
Continuous course	
Prior knowledge activated	
Opportunity for active learning	✓
Collaboration with others	

The researcher observed participants of the professional course practice completing a SCAMPER activity provided by the course leader. The course leader stated, "Let's do a quick practice run to help you kind of understand really what SCAMPER is."

Participants completed the activity provided on the screen. The facilitator saw participants' responses and commented on the various answers offered. After observing the course, the researcher coded the course transcriptions.

Using the established codes for effective professional development, the researcher read through the course transcriptions and identified examples of the code during the course. While reading through the transcriptions, the researcher identified course participants actively engaged in playing a Kahoot review game at the end of the course. Course participants logged in to the Kahoot website and answered questions related to the content learned during the SCAMPER and RAFT course. The codebook for effective professional development codes identified during the SCAMPER and RAFT course are shown in Table 3.3.

Table 3.3

SCAMPER and RAFT Effective Professional Development Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Effective Professional Development	Collaboration	Any evidence where participants work together	When the facilitator is discussing students working together in the classroom	“Both the teacher and the student could collaborate together to develop a raft.”	When course participants are collaborating with each other	
	Active Learning	Any evidence where participants are actively completing a task	When the facilitator is discussing what tasks students can do in the classroom	“That's a great station activity is to have them move through a choice board.”	When course participants are actively completing an activity	“If you have never played Kahoot it's a lot of fun. It's a lot, it can be a little bit crazy.”

Online teaching strategies. The most effective online teaching strategies are providing participants with a discussion opportunity, asynchronous and synchronous activities, a course that is easy to follow, interactions between the facilitator and participants, and allowing participants the opportunity to evaluate the course. Table 3.4 illustrates the online teaching properties that the researcher observed during the SCAMPER and RAFT course.

Table 3.4

Course 1: Online Teaching Observed Properties

Online Teaching Quality	Observed
Discussion opportunity	
Asynchronous activity	
Synchronous activity	✓
Evaluation of course	
Organized course	✓
Interaction between facilitator and participant	

Throughout the SCAMPER and RAFT course, the researcher observed participants complete synchronous activities using Mentimeter questions and Padlet to share different ideas related to RAFT. For the Mentimeter question, the course leader instructed participants to “go to menti.com and use the code.” Participants showed their engagement in the material by providing different responses based on the SCAMPER strategy. SCAMPER is an acronym that stands for substitute, combine, adapt, modify, put to another use, eliminate, reverse. Participants were shown a picture of fruit loops and asked to follow the steps of SCAMPER on the Mentimeter. After learning about the RAFT strategy, the instructor expected participants to “go ahead and post into this Padlet.

What are some RAFT ideas that you could use in your classroom?” Participants shared and were able to read through other ideas provided by participants concerning how teachers can implement RAFT in the gifted and talented classroom. After observing the course, the researcher coded the course transcriptions for examples of online teaching strategies. The researcher identified course transcriptions showing participants going through a SCAMPER activity to understand the elements of SCAMPER. The codebook for SCAMPER and RAFT is found in Table 3.5

Table 3.5

SCAMPER and RAFT Online Teaching Strategies Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Online Teaching Strategies	Discussion	Any evidence that participants are speaking to each other or the facilitator	When the facilitator discusses students in the classroom	“Have them work in pairs and have that think pair share where they talk out their ideas with their partners.”	When course participants are having a conversation between each other	
	Activities	Any evidence where participants are completing a task	When the facilitator discusses students completing a task	“The teacher had her students take a candy cane and she said, you're going to take this candy cane go through each letter of scamper.”	When course participants are asked to complete an activity	“Let's do a quick practice run to help you kind of understand really what scamper is.”
	Interaction	Any evidence that participants are interacting with each other or the facilitator	When the facilitator discusses students interacting in the classroom	“Mentimeter is a really fun way for students to engage together.”	When course participants interact with each other or the course facilitator	

Principles of andragogy. The SCAMPER and RAFT course provided participants with an element of andragogy. Table 3.6 shows the field notes taken on the properties of andragogy incorporated in the SCAMPER and RAFT course. The researcher observed the SCAMPER and RAFT course begin by the facilitator explaining why teachers were learning the given information. The professional development course leader explained that law requires differentiation for gifted and talented students. The leader explained, “It is actually a legal requirement; TEA does have the state plan for the gifted and in it states planning specifically require that identify gifted and talented students have their needs met through differentiation.” Participants were told the importance of the course information before beginning.

Table 3.6

Course 1: Observed Principles of Andragogy

Principles of Andragogy	Observed
Explanation why	✓
Self-directed learning	
Share prior experiences	
Social roles considered	
Problem-centered	

After observing the course, the researcher transcribed the audio, read the transcriptions, wrote memos, and then coded for elements of andragogy. The researcher identified the facilitator discussing the agenda in the transcriptions of the course. The codebook for andragogy in the SCAMPER and RAFT course is found in Table 3.7. The researcher used information from the SCAMPER and RAFT course observation, field notes taken, and transcription of the course to address the study’s research questions.

Table 3.7

SCAMPER and RAFT Andragogy Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Andragogy	Objectives	Any evidence that the course facilitator discussed the course objectives	When the course facilitator discusses objectives in the classroom		When the course facilitator discusses the course objectives	“Just some agenda and housekeeping”
	Problem-Centered	Any evidence a problem was used as a tool for learning	When the course facilitator discusses problems in the classroom	“Scamper is a way to incorporate creative problem-solving raft as a type of choice board that elicits the highest levels of critical thinking and enables us to incorporate writing cross curricular”	When the course participants discuss and solve a problem	

Research Question 1: What effective strategies were employed by gifted and talented professional development online courses? The SCAMPER and RAFT professional development course utilized active learning, allowing participants to participate in the course activities actively. The course allowed for synchronous or asynchronous activity, depending on if the participant was at the live course or watched the recording later. The course was organized and easy for participants to follow as the

facilitator led the course. In total, the researcher recorded one of the four professional development qualities and two of the six online teaching qualities.

Research Question 2: How were effective professional development strategies used in online professional development courses for elementary teachers related to the principles of andragogy? The SCAMPER and RAFT course highlighted the importance of adult learners knowing the course objectives and understanding why they learn the information. The course facilitator shared with participants how they could use the SCAMPER and RAFT strategies and gave clear course objectives before beginning the course. To summarize, the course exhibited one of the five principles of andragogy.

Course 2: Creativity with Adobe Spark

The second 2020 course focuses on educating teachers to use Adobe Spark. The district purchased the program for all teachers in the district to access. The course included explanations and uses of different features of Adobe Spark that teachers could use in the classroom to extend gifted and talented students' learning in the classroom.

Effective professional development. Creativity with Adobe Spark provided elements of effective professional development. Table 3.8 illustrates the effective professional development strategies the researcher took field notes on during the Creativity with Adobe Spark course. During the course, the researcher observed the facilitator encourage participants to open their own Adobe Spark program provided by the district to familiarize themselves with the tools explained during the course. The facilitator walked participants through how to open the program from the districts' Class

Link site. The facilitator showed participants different features and activities on the site by sharing their screen throughout the presentation.

Table 3.8

Course 2: Effective Professional Development Observed Properties

Effective Professional Development Quality	Observed
Continuous course	
Prior knowledge activated	
Opportunity for active learning	✓
Collaboration with others	

After observing the course, the researcher wrote memos, which helped the researcher code the course transcriptions for elements of effective professional development. While reading the transcription, the researcher identified opportunities for participants to engage in active learning, but participation was not required. The facilitator acknowledged the difficulty for participants to complete the activities at the same time while observing them, and therefore did not require participants to actively complete the activities if they found it too difficult. The codebook for effective professional development codes is found in Table 3.9.

Table 3.9

Creativity with Adobe Spark Effective Professional Development Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Effective Professional Development	Collaboration	Any evidence where participants work together	When the facilitator is discussing students working together in the classroom	“They can work well with others, and they become more effective learners.”	When course participants are collaborating with each other	

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
	Active Learning	Any evidence where participants are actively completing a task	When the facilitator is discussing what tasks students can do in the classroom or what participants can do later	“The other reason why we like technology is technology can equip students to independently organize their learning process. So instead of being passive recipients of information, they can become active users.”	When course participants are actively completing an activity	“After I get done with this, you are going to be able to go back and play. If you can, have me in a minimized window but it will be hard to go back and forth and see what I’m talking about.”

Online teaching strategies. Creativity with Adobe Spark provided participants with elements of online teaching strategies. The course was organized and easy for participants to follow. The facilitator shared their screen for all participants to see throughout the course. Table 3.10 illustrates the online teaching properties that the researcher observed during the Creativity with Adobe Spark course.

Table 3.10

Course 2: Online Teaching Observed Properties

Online Teaching Quality	Observed
Discussion opportunity	
Asynchronous activity	
Synchronous activity	
Evaluation of course	
Organized course	✓
Interaction between facilitator and participant	

After observing the course, the researcher transcribed the course and wrote memos while identifying codes of online teaching qualities. The researcher identified the course facilitator interacting with course participants by answering questions posted in the course chat box. The course facilitator verbalized the question asked in the chat and their response for course all participants. The codebook for online teaching qualities identified in the course transcriptions is found in Table 3.11.

Table 3.11

Creativity with Adobe Spark Online Teaching Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Online Teaching Strategies	Discussion	Any evidence that participants are speaking to each other or the facilitator	When the facilitator discusses students in the classroom	“Encourage discussions so that those kids that this creativity comes easier, and that they can lead the others to it”	When course participants are having a conversation between each other	
	Activities	Any evidence where participants are completing a task	When the facilitator discusses students completing a task	“So your littles, they could actually record their voice.”	When course participants are asked to complete an activity	
	Interaction	Any evidence that participants are interacting with each other or the facilitator	When the facilitator discusses students interacting in the classroom		When course participants interact with each other or the course facilitator	“One of the questions I answered in the chat was the difference between the Adobe Spark and the Adobe Spark A”

Principles of andragogy. During the course, the researcher observed the facilitator share with participants why they were learning the information and how it applies to their teaching of gifted and talented students. The facilitator treated participants as self-directed learners by allowing them to choose to open their program on their personal computer and follow along practicing the tools themselves instead of simply watching the course take place. Table 3.12 shows the properties of andragogy incorporated in the Creativity with Adobe Spark course.

Table 3.12

Course 2: Observed Principles of Andragogy

Principles of Andragogy	Observed
Explanation why	✓
Self-directed learning	✓
Share prior experiences	
Social roles considered	
Problem-centered	

During the Creativity with Adobe Spark course, the researcher observed the facilitator begin by explaining why technology is useful and how it benefits students. “I’m talking about skills of critical thinking. And some others will use the other C’s collaboration, communication, critical thinking, creativity, and it helps with problem-solving different things.” The course leader explained how the information learned would benefit students in their classroom.

Due to the course facilitator allowing participants to open their own Adobe Spark program to follow along, the research noted self-directed learning as observed. Participants were not required to open their program but were given a choice to simply

follow along by watching or actively direct their learning by practicing the tools with the facilitator on their screen.

After observing the course, the researcher transcribed the course and wrote memos to identify codes of the properties of andragogy. In the course transcriptions, the researcher noted the course facilitator discussing the specific course objectives for participants before beginning the course. The codebook for elements of andragogy during Creativity with Adobe Spark is found in Table 3.13. The researcher used information from the Creativity with Adobe Spark course observation, field notes, and transcription of the course to address the study’s research questions.

Table 3.13

Creativity with Adobe Spark Andragogy Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Andragogy	Objectives	Any evidence that the course facilitator discussed the course objectives	When the course facilitator discusses objectives in the classroom		When the course facilitator discusses the course objectives	“We’re going to talk about creativity, and specifically, we’re going to look at Adobe Spark to help with creativity with the GT student.”
	Problem-Centered	Any evidence a problem was used as a tool for learning	When the course facilitator discusses problems in the classroom	“We do want to encourage that they’re more open to new ideas and challenges. They’re more able to solve problems.”	When the course participants discuss and solve a problem	

Research Question 1: What effective strategies were employed by gifted and talented professional development online courses? The Creativity with Adobe Spark course utilized the opportunity for active learning by encouraging participants to open their Adobe Spark account and practice using the tools discussed during the course. The course was easy for participants to follow along as the facilitator shared their screen to show course progression through material. The course also allowed for interaction between the course participants and the facilitator by the facilitator answering participant questions in the chat. In total, data revealed that this course displayed two of the four professional development qualities and one of the six online teaching qualities.

Research Question 2: How were effective professional development strategies used in online professional development courses for elementary teachers related to the principles of andragogy? The Creativity with Adobe Spark course implemented andragogy by using course objectives and explaining to participants how to apply features of Adobe Spark in the classroom to meet the needs of gifted and talented students. The course also related to the principles of andragogy by treating participants as self-directed learners.

Course 3: Strategies for Cognitive Engagement

The third course, Strategies for Cognitive Engagement, provided examples for teachers to engage gifted and talented students in the classroom. The course provided fifteen strategies for engagement based on a book the facilitator read. The facilitator shared that all campuses in the district received a copy of the book to explain the strategies further. An advanced academic coach who led the 2020 case SCAMPER and RAFT led the course.

Effective professional development. During the observation of Strategies for Cognitive Engagement, the researcher noted the implementation of active learning opportunities for participants on their field notes. Table 3.14 shows the property of active learning noted by the researcher. The researcher observed active learning through the utilization of Pear Deck by the professional development course leader who explained, “The idea is that students can answer questions and interact with your slideshow on a one-to-one basis.” Using Pear Deck allowed the course leader to allow participant question submissions and provide participants an opportunity to engage in the application of course material. Throughout the course, participants answered various questions about the course material and followed along through the material.

Table 3.14

Course 3: Effective Professional Development Observed Properties

Effective Professional Development Quality	Observed
Continuous course	
Prior knowledge activated	
Opportunity for active learning	✓
Collaboration with others	

After observing the Strategies for Cognitive Engagement course, the researcher transcribed the course and wrote memos to help identify codes related to effective professional development. The researcher noted opportunities for active learning in the course transcriptions using embedded questions during the Pear Deck slideshow used by the facilitator and course participants. The codes for effective professional development qualities noted in the course transcriptions are found in Table 3.15.

Table 3.15

Strategies for Cognitive Engagement Effective Professional Development Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Effective Professional Development	Collaboration	Any evidence where participants work together	When the facilitator is discussing students working together in the classroom	“Divide the class into groups, research shows that three is better than two.”	When course participants are collaborating with each other	
	Active Learning	Any evidence where participants are actively completing a task	When the facilitator is discussing what tasks students can do in the classroom	“They can drag it and I can make it be numbers, I could change the colors.”	When course participants are actively completing an activity	“I've embedded questions throughout my slideshow to engage participants.”

Online teaching strategies. During the observation, the researcher recorded field notes that included the use of synchronous activities and an organized, easy-to-follow course. Table 3.16 illustrates the properties included in the researcher’s notes. The researcher observed the course facilitator use a Pear Deck to provide activities throughout the course for participants. Participants easily followed the course with all information on the facilitator’s screen. The Pear Deck activities provided synchronous activities for live course participants and those who watched the recording later. All the activities links stayed live so those watching the recording could complete the activities later to receive credit for attending the course.

Table 3.16

Course 3: Online Teaching Observed Properties

Online Teaching Quality	Observed
Discussion opportunity	
Asynchronous activity	
Synchronous activity	✓
Evaluation of course	
Organized course	✓
Interaction between facilitator and participant	

After observing the course, the researcher transcribed the course and wrote memos to identify codes in the elements of online teaching qualities. The transcriptions showed the use of a Pear Deck for participants to complete activities throughout the course. The codes identified in the course transcriptions for online teaching strategies are found in Table 3.17.

Table 3.17

Strategies for Cognitive Engagement Online Teaching Strategies Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Online Teaching Strategies	Discussion	Any evidence that participants are speaking to each other or facilitator	When the facilitator discusses students discussing in the classroom	“Then students discuss the topic in that small group and report the conclusion.”	When course participants are having a conversation between each other	
	Activities	Any evidence where participants are completing a task	When the facilitator discusses students completing a task		When course participants are asked to complete an activity	“You should have a question in your Pear Deck slide.”

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
	Interaction	Any evidence that participants are interacting with each other or the facilitator	When the facilitator discusses students interacting in the classroom	“When the teacher is doing more of the talking, that doesn't engage the student in the same way that having the students interact and have conversations”	When course participants interact with each other or the course facilitator	

Principles of andragogy. While taking field notes, the researcher noted the course facilitator explained why participants learned the information before beginning the course. Table 3.18 shows the properties noted by the researcher. During Strategies for Cognitive Engagement, the researcher observed the course start with precise ‘I will’ statements for participants to follow. “I will understand the levels of cognitive engagement; I will learn new strategies to engage my students in class and encourage academic growth; I will understand the importance of differentiated instruction.” Being told course objectives allowed participants to know what they were learning and the implementation of their learning.

Table 3.18

Course 3: Observed Principles of Andragogy

Principles of Andragogy	Observed
Explanation why	✓
Self-directed learning	
Share prior experiences	
Social roles considered	
Problem-centered	

After observing the course, the researcher transcribed the course and wrote memos to identify the codes within andragogy. The researcher found detailed course objectives for course participants at the beginning of the course. Table 3.19 shows the codebook for codes identified in the Strategies for Cognitive Engagement course transcriptions. The researcher used field notes, the completed ROPE, and the Strategies for Cognitive Engagement course transcription to address the research questions.

Table 3.19

Strategies for Cognitive Engagement Andragogy Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Andragogy	Objectives	Any evidence that the course facilitator discussed the course objectives	When the course facilitator discusses objectives in the classroom		When the course facilitator discusses the course objectives	“Let's talk about our learning objectives.”
	Problem-Centered	Any evidence a problem was used as a tool for learning	When the course facilitator discusses problems in the classroom	“Evaluate each other's work on a complex math problem using the peer critiquing sheet to provide feedback.”	When the course participants discuss and solve a problem	

Research Question 1: What effective strategies were employed by gifted and talented professional development online courses? The course allowed participants to participate in active learning with various synchronous activities. The Pear Deck made the course easy for participants to follow along on the facilitators’ screen and their own

when engaging in the synchronous activities. In total, the researcher recorded one of the four professional development qualities and two of the six online teaching qualities.

Research Question 2: How were effective professional development strategies used in online professional development courses for elementary teachers related to the principles of andragogy? The course began with precise statements about what information the participants would learn during the course. Participants had a clear expectation about the course before beginning.

Course 4: Serving the Underserved

The second course observed, ‘Serving the Underserved,’ focused on gifted and talented students who may also have another label, called twice-exceptional students. The course focused on teachers’ ability to identify gifted and talented students, even twice exceptional. A different district advanced academic coach led the course.

Effective professional development. While observing the course, the researcher noted observing participants engaging in active learning. Table 3.20 illustrates the observed properties noted by the researcher. Throughout the course, participants actively engaged in course material through opportunities to answer questions asked by the facilitator to share multiple times. The facilitator asked participants to unmute their microphone to share a classroom norm and to share behaviors participants have seen in underserved gifted and talented students. Participants had multiple opportunities for active learning and engagement in the course material during the course.

Table 3.20

Course 4: Effective Professional Development Observed Properties

Effective Professional Development Quality	Observed
Continuous course	
Prior knowledge activated	
Opportunity for active learning	✓
Collaboration with others	

After observing the course, the researcher transcribed the course and wrote memos to identify codes of effective professional development properties in the course transcriptions. The researcher identified numerous active learning opportunities for course participants in the transcriptions. Participants answered questions in Mentimeter questions as well as within the course chat. Table 3.21 shows the established codes for effective professional development qualities within the *Serving the Underserved* course.

Table 3.21

Serving the Underserved Effective Professional Development Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Effective Professional Development	Collaboration	Any evidence where participants work together	When the facilitator is discussing students working together in the classroom	“You can even use jigsaw in a flexible grouping atmosphere, where everyone has a role, and a piece of the assignment and then they come back together”	When course participants are collaborating with each other	

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
	Active Learning	Any evidence where participants are actively completing a task	When the facilitator is discussing what tasks students can do in the classroom		When course participants are actively completing an activity	<p>“I want you to share with me three characteristics that you think of regarding an underserved student. So, if you will go to mentee.com.”</p> <p>“If you would drop in the chat, a characteristic or two you noticed”</p>

Online teaching strategies. The course utilized various online teaching strategies, including synchronous activities and interactions between the facilitator and participants. Table 3.22 identifies the properties observed by the researcher while taking notes on the course. During the observation, the researcher observed the facilitator allow participants to use Mentimeter and Padlet to answer questions and engage in the course material. “I want to know, what have you seen gifted students do to make sure they are seen or heard? How do they reach out and ensure that they are seen and are heard? So, we’re going to go to Padlet.” Participants shared their responses on the online form as the facilitator read through the different thoughts on the screen. Mentimeter was used for participants to “share with me three characteristics that you think of regarding an underserved student. So, if you will go to menti.com.” As participants added responses, the course facilitator read through the various characteristics to share with the course participants. Through

reading the comments, the facilitator showed approval of participants’ responses indicating the course engaged participants with the information.

The researcher observed the facilitator allowed interaction between the facilitator and course participants. The facilitator allowed course participants to unmute their microphones and share positive classroom norms set in their classrooms. The facilitator had participants share information in the chat box for all participants to view by stating, “So, if you would drop in the chat, a characteristic or two or three that you noticed that would cover and represents all four groups we mentioned.”

Table 3.22

Course 4: Online Teaching Observed Properties

Online Teaching Quality	Observed
Discussion opportunity	
Asynchronous activity	
Synchronous activity	✓
Evaluation of course	
Organized course	✓
Interaction between facilitator and participant	✓

Following the observation of the course, the researcher transcribed the course and wrote memos to identify codes within online teaching strategies. The researcher found the used of activities offered to course participants through the Padlet used throughout the course. The researcher also noted interaction between the course facilitator and participants by the facilitator allowing participants to share an experience on the Padlet and reading responses to the whole group. Table 3.23 shows the established codes found within the course transcripts by the researcher.

Table 3.23

Serving the Underserved Online Teaching Strategies Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Online Teaching Strategies	Discussion	Any evidence that participants are speaking to each other or the facilitator	When the facilitator discusses students in the classroom	“They need to have the opportunity to grasp ideas and challenges intellectually and academically they can have higher level conversations, academic conversations that way as well.”	When course participants are having a conversation between each other	
	Activities	Any evidence where participants are completing a task	When the facilitator discusses students completing a task	“Gather input on classroom climate from your students. That is an activity that can begin at the very first week of school.”	When course participants are asked to complete an activity	“The final activity I want you to do today...We're going to go back to the Padlet”
	Interaction	Any evidence that participants are interacting with each other or the facilitator	When the facilitator discusses students interacting in the classroom		When course participants interact with each other or the course facilitator	“What are some ways students are allowed to shine on your campus or in your classroom? Drop that in the Padlet to share with everyone”

Principles of andragogy. The Serving the Underserved course provided participants with elements of andragogy. Table 3.24 shows the observed properties of andragogy the researcher noted during observation.

Table 3.24

Course 4: Observed Principles of Andragogy

Principles of Andragogy	Observed
Explanation why	✓
Self-directed learning	
Share prior experiences	✓
Social roles considered	
Problem-centered	

The researcher observed the course facilitator tell participants why they were learning the given material and shared prior experiences. Serving the Underserved course began with “we’re going to learn new strategies to create a cultural, culturally responsive learning environment.” The course facilitator provided an opportunity for participants to share their prior experiences related to the course topic. Teachers in the course shared behaviors they have seen in underserved gifted and talented students. Teachers also ranked these experiences with the various populations of underserved students. The Mentimeter questions asked participants, “if you will rank and if you’ve had all, then mark all. I’m just interested to see the experience that you all have had with the four groups.” The course facilitator gave participants opportunities to share their personal experiences during the professional development course.

After the course observation, the researcher transcribed the course and wrote memos to identify codes within andragogy. In the transcriptions the researcher found the course objectives shared by the course facilitator at the beginning of the course. Table 3.25 shows the established codes found in the course transcriptions. The researcher used information from the Serving the Underserved course observation, field notes, and transcription of the course to address the study’s research questions.

Table 3.25

Serving the Underserved Andragogy Codebook

Theoretical Framework	Code Name	Definition	When not to use	When not to use example	When to use	Example when used
Andragogy	Objectives	Any evidence that the course facilitator discussed the course objectives	When the course facilitator discusses objectives in the classroom		When the course facilitator discusses the course objectives	“There are several learning objectives and norms I want to share with you.”
	Problem-Centered	Any evidence a problem was used as a tool for learning	When the course facilitator discusses problems in the classroom	“Authentic products, I think, independent study, their problem-based learning we talked about before”	When the course participants discuss and solve a problem	

Research Question 1: What effective strategies were employed by gifted and talented professional development online courses? During the course, participants engaged in active learning, numerous synchronous activities and interacted with the course facilitator by unmuting their microphones and sharing positive classroom norms they have in their classroom. This course aligned with one of the four professional development qualities and two of the three online teaching qualities.

Research Question 2: How were effective professional development strategies used in online professional development courses for elementary teachers related to the principles of andragogy? The course facilitator provided participants with an understanding of why they were learning the course content before beginning the course. The course facilitator also allowed teachers to share prior experiences they have seen

with underserved gifted and talented students. Participants ranked these experiences with the different underserved populations.

Framework Analysis

The framework analysis revealed some similarities as well as some differences among the four online gifted and talented professional development courses when related to key ideas from the theoretical framework. The researcher analyzed the course observation forms, field notes, and transcriptions to discover similarities and differences among the four courses. Analysis from each of the four online gifted and talented professional development courses combined to elucidate how the courses mapped onto the theoretical framework. See Table 3.26 for a summary of how each unit of analysis displayed elements of the components of the theoretical framework. This depiction highlights how each course modeled components of the research study’s framework to answer the research questions. Following, each section more specifically reflected the findings on each component of the theoretical framework.

Table 3.26

Comparison of Each Course to the Theoretical Framework

Theoretical Framework	Professional Development Qualities	Online teaching Qualities	Principles of Andragogy
Total Number of Elements	4	6	5
Elements in Course 1	2	2	1
Elements in Course 2	1	1	2
Elements in Course 3	1	2	1
Elements in Course 4	1	3	2

Effective Professional Development

Based on the theoretical framework, the elements essential for effective professional development are continuous courses (Darling-Hammond et al., 2009), activation of participants' prior knowledge (Knowles, 1980), participants have the opportunity for active learning (Garet et al., 2001), and participants collaborate with others (Martin et al., 2015). The common quality of effective professional development in the analysis between the four courses was active learning. The researcher observed active learning taking place in the professional development courses. Table 3.27 displayed the one similarity, the use of active learning, during the four courses.

Table 3.27

Effective Professional Development Analysis

Course	Prior Knowledge Activated	Active Learning	Collaboration
SCAMPER and RAFT		✓	
Creativity using Adobe Spark		✓	
Strategies for Cognitive Engagement		✓	
Serving the Underserved		✓	

Online Teaching Strategies

Based on the literature review and theoretical framework, the most effective online teaching strategies are providing participants with a discussion opportunity (Wu & Hiltz, 2004), asynchronous and synchronous activities (Liu et al., 2010), a course that is easy to follow (Anderson et al., 2001), allows interaction between the facilitator and participants (Young, 2006), and allows participants the opportunity to evaluate the course (Cheung, 1998). The common themes found in the analysis of online teaching strategies were the inclusion of synchronous learning activities for participants and course

organization. Table 3.28 exhibits similarities of synchronous activity for most of the courses and organized courses for all. None of the courses provided a discussion opportunity for participants, nor was an evaluation tool or form offered for participants to complete about their experiences in the course.

The differing theme found between the courses was interaction during Serving the Underserved. Serving the Underserved was the only course that revealed participants unmuting their microphones and speaking with the course facilitator.

Table 3.28

Online Teaching Strategies Analysis

Course	Discussion	Asynchronous Activity	Synchronous Activity	Course Evaluation	Organized Course	Interaction
SCAMPER and RAFT			✓		✓	
Creativity using Adobe Spark					✓	
Strategies for Cognitive Engagement			✓		✓	
Serving the Underserved			✓		✓	✓

Principles of Andragogy

Based on the theoretical framework, the five principles of andragogy from the theoretical framework included in professional development are an explanation for learning (Knowles, 1984), opportunities for self-directed learning (Knowles, 1975), sharing prior experiences (Knowles, 1980), social roles considered (Knowles, 1980), and problem-centered activities (Knowles et al., 2012). The common theme found during the analysis of principles of andragogy was explaining why teachers are learning the material

in the course (See Table 3.29). In all the courses, the researcher observed the course facilitator presenting a slide in their presentation, which included what participants would learn and how the information would help them in their teaching. None of the courses provided problem-centered activities or consideration of participants' social roles.

Two instances showed differences among the courses. First, in *Serving the Underserved*, participants were invited to share prior experiences. Second, in *Creativity using Adobe Spark*, the facilitator allowed participants to act as self-directed learners.

Table 3.29 presents these differences revealed by the data.

Table 3.29

Principles of Andragogy Analysis

Case	Why	Self-Directed Learners	Share Prior Experiences	Social Roles Considered	Problem-Centered
SCAMPER and RAFT	✓				
Creativity using Adobe Spark	✓	✓			
Strategies for Cognitive Engagement	✓				
Serving the Underserved	✓		✓		

Needs of Gifted Students

The researcher identified a similar theme of focusing on the specific instructional needs of gifted and talented students in all four online gifted and talented courses. During each of the professional development courses, the research emphasized the instructional needs of gifted and talented students. SCAMPER and RAFT, Creativity using Adobe Spark, and Strategies for Cognitive Engagement focused on providing teachers additional tools and activities to support gifted and talented student learning. The content focuses on

providing higher-level thinking activities teachers can create to provide differentiated learning opportunities to students. Serving the Underserved provided learning opportunities for teachers about different types of giftedness and how to identify it in all students. All four courses focused on supporting gifted and talented student learning in the classroom.

Discussion

The purpose of this case study was to observe the effective research strategies utilized in four online professional development courses for gifted and talented teachers in the Quincy Independent School District and to understand the effective research strategies being implemented in the courses and the relation of these strategies to andragogy. The within case analysis of the subunits of the theoretical framework used during the courses contributed to the framework analysis. Each course contributed data to find evidence of the common themes identified through the theoretical framework. The framework analysis explores similarities between the courses and the newly identified themes in Serving the Underserved and Creativity using Adobe Spark that were not present in the other courses. The within case analysis and framework analysis findings represented the inclusion of active learning, synchronous activities, organized courses, participants' understanding of why they are learning the given information and included content related to supporting gifted and talented student learning in the classroom.

The within case analysis and framework analysis confirmed the literature review findings of effective strategies in teacher professional development. The framework analysis supported the focus of content related to the specific needs of gifted and talented students. The findings support using the ROPE to observe professional development

courses for effective strategies. The study found that online gifted and talented professional development courses need evaluation for their use of researched strategies (Guskey, 2000).

Research Question 1 summary: What effective strategies were employed by gifted and talented professional development online courses? This study utilized researched strategies during online gifted and talented professional development courses. The courses showed the utilization of active learning (DeMonte, 2013; Desimone, 2011), synchronous activities (Liu et al., 2010), organization (Anderson et al., 2001), and providing participants with an understanding of the information provided in the course (Knowles, 1984). The use of researched effective strategies shows the beginning of effective professional development courses for teachers in the Quincy Independent School District.

Research Question 2 summary: How were effective professional development strategies used in online professional development courses for elementary teachers related to the principles of andragogy? The four courses showed the lack of andragogy used in teachers' online professional development courses. The observation showed the implementation of only two of the five principles of andragogy within the courses. The courses employed use teachers' understanding of why they learned the given information (Knowles, 1984). During the Serving the Underserved course, the researcher observed teachers sharing their prior learning experiences (Knowles, 1980). The researcher also observed participants engaging in self-directed learning during Creativity with Adobe Spark (Knowles, 1975). Besides these two principles, the researcher found no evidence of

consideration of social roles (Knowles, 1980) or problem-centered activities (Knowles et al., 1980).

Findings

The purpose of this case study was to observe the effective research strategies utilized in four online professional development courses for gifted and talented teachers in the Quincy Independent School District and to understand the effective research strategies being implemented in the courses and the relation of these strategies to andragogy. The research questions were designed to collect information and insight into the strategies currently being implemented by the Quincy Independent School District.

The following research questions were presented for the study:

1. What effective strategies were employed by gifted and talented professional development online courses?
2. How were effective professional development strategies used in online professional development courses for elementary teachers related to the principles of andragogy?

Research Question 1 Summary: What Effective Strategies Were Employed by Gifted and Talented Professional Development Online Courses?

Through the analysis of direct observations, field notes, and transcripts, two significant findings emerged from the data:

- Professional development courses did not address activating teachers' prior knowledge, collaboration, discussions, or provided evaluations for the courses.
- Professional development courses implement active learning for teachers.

Courses did not address activating teachers' prior knowledge, utilizing collaboration, allowing discussions, or providing a course evaluation for the courses.

This finding is supported through the direct observation of the courses, field notes taken

by the researcher, and coding of the transcripts of the course. The chat feature was enabled but not utilized as a discussion opportunity. In some instances, participants answered questions throughout the courses, but conversations between participants or the facilitator to show a discussion taking place did not occur. The participants who watched the course recording had to take an assessment to receive credit for the course but did not allow for evaluation of course content or implementation. Participants did not collaborate with others during small group activities or any other interaction with others.

Direct observations and course transcriptions revealed the inclusion of active learning in all four online gifted and talented professional development courses. During the SCAMPER and RAFT course, participants went through the process of SCAMPER practicing the different steps. The course leader stated, “Let’s do a quick practice run to help you kind of understand really what SCAMPER is.” Participants completed the activity provided on the screen. During Creativity with Adobe Spark, the facilitator encouraged participants to open their own Adobe Spark program provided by the district to familiarize themselves with the tools explained during the course. The facilitator walked participants through how to open the program and showed participants different features and activities by sharing their screen throughout the presentation. Strategies for Cognitive Engagement included multiple opportunities for active learning. The course facilitator utilized a Pear Deck to organize the course. Using Pear Deck allowed participants to answer questions and engage in the application of course material. The facilitator of serving the Underserved allowed participants to actively engage in course material through multiple opportunities to answer questions. Participants unmuted their microphones to share classroom norms and behaviors they have seen in underserved

gifted and talented students. All four professional development courses implemented active learning for participants.

Research Question 2: How were effective professional development strategies used in online professional development courses for elementary teachers related to the principles of andragogy?

Through the analysis of direct observations, field notes, and transcripts regarding the second research question, two significant findings emerged:

- Professional development course facilitators understood the importance of including course objectives and understanding the reasons why adult learners were learning the course information and how it would apply to them.
- Professional development courses did not include problem-centered activities for teachers to learn from.

Direct observations and course transcriptions revealed the inclusion of active learning in all four online gifted and talented professional development courses. Each of the four courses began with a presentation slide with explicit course objectives. The course facilitators reviewed the course objectives with participants and explained how the course applies to gifted and talented student learning in the classroom. The professional development course leader explained that law requires differentiation for gifted and talented students during the SCAMPER and RAFT course. “It is actually a legal requirement; TEA does have the state plan for the gifted and in it states planning specifically require that identify gifted and talented students have their needs met through differentiation.” During the Creativity with Adobe Spark course, the facilitator began by explaining why technology is useful and how it benefits students. “I’m talking about skills of critical thinking. And some others will use the other C’s collaboration, communication, critical thinking, creativity, and it helps with problem-solving different

things.” During Strategies for Cognitive Engagement, the researcher observed the course start with precise ‘I will’ statements for participants to follow. “I will understand the levels of cognitive engagement; I will learn new strategies to engage my students in class and encourage academic growth; I will understand the importance of differentiated instruction.” Serving the Underserved course began with “we’re going to learn new strategies to create a cultural, culturally responsive learning environment.” All four courses began with the facilitator explaining course objectives and the applicability of the information to participants.

Facilitators did not include problem-centered activities during the professional development courses. This finding is supported by direct observation of the courses, field notes taken by the researcher, and transcriptions of the course. The activities participants were not problem-centered but focused on specific learning strategies and tools for teachers to use with gifted and talented students in the classroom.

Implications

The case study intended to understand the use of researched effective professional development strategies, online teaching strategies, and adult learning practices during online gifted and talented professional development provided to teachers. This study’s results provide implications for teachers, school district leadership, and professional development facilitators in and outside of public education. The findings may inform stakeholders on using researched effective strategies for teacher professional development. The discussions of the specific implications are in the following sections.

Implications for Teachers

Many teachers attend professional development sessions because they must teach specific student populations and renew their teaching certifications. This study's literature supported the use of professional development organized and implemented using researched-based strategies for the session to be effective for teachers in attendance. This study's findings supported using an observation tool to learn more about professional development sessions. Teachers should be intentional about the professional development sessions they attend so that all professional development positively impacts students.

Implications for School District Leadership

School districts provide professional development sessions for their current teaching staff during yearly required professional development sessions and optional sessions throughout the school year. District leaders ensure the appropriate use of district funds by evaluating programs and resources used for programs. This study's literature supports that teacher professional development is an essential part of a teacher's professional growth when presented effectively. School district leaders ensure the district's professional development sessions are as meaningful to teachers as possible during the specific time frame of professional development by evaluating professional development and its impact on teachers teaching. District leaders show teachers their time is respected and treated as adults using adult learning principles during district professional development.

Implications for Professional Development Facilitators in Schools

School professional development leaders provide teachers with meaningful and relevant professional development sessions that improve teachers' teaching performance and student achievement levels. Leaders must understand the importance of using researched effective strategies to provide professional development to teachers. Leaders must ensure sessions engage teachers using adult learning principles, effective professional development research, and online teaching practices.

Using the ROPE observation tool, leaders can understand their professional development sessions to determine success and growth areas. This study's literature supported the implementation of the observation tool consisting of effective professional development strategies, online teaching strategies, and adult learning principles. Professional development leaders ensure that teacher professional development is effective and valued in the teaching community. The study found that professional development courses are not using researched effective strategies when planning or facilitating professional development courses. The study provides a tool for professional development leaders to use to create professional development courses and for leaders to observe courses for using effective strategies.

Future Research Implications

The study emphasized the importance of effective teacher professional development using researched effective strategies. The topic needs future research to understand the impact of effective strategies on teachers' use of the information learned in a professional development session and its effect on student achievement. Potential future research questions include:

1. How does the use of effective professional development strategies and andragogy affect teachers' implementation of learned information?
2. How does the use of andragogy during professional development sessions improve teachers' perceptions of professional development?
3. How does the use of effective professional development strategies impact student achievement in the classroom?
4. How does the use of effective professional development strategies and andragogy impact teachers' evaluation scores?
5. How does the use of andragogy impact teachers' views of professional development courses?

The study informs numerous concepts for future research. Research can include using the observation form created in this study for professional development leaders. The research could show the inclusion of researched effective strategies if given to leaders when planning a course. Once utilized, researchers can conduct studies on if the implementation of the researched effective strategies impacts the effectiveness in the viewpoint of teachers attending the courses and whether the courses were effective based on observation of teachers using the strategies learned. Future research can also study how effective strategies impact teachers' instructional strategies in the classroom. The research could begin an exploratory mixed methods study and collect quantitative data to show the ROPE's reliability for future researchers in the field.

The study can be a starting point for numerous areas regarding teacher professional development courses. Research can include teacher perceptions of professional development courses and how the use of the observation tool impacts the effectiveness of courses for teachers. While the focus of this study was on gifted and talented professional development, future research could include other areas of teacher professional development. Future research could also modify the observation tool not to

include online teaching strategies to observe in-person professional development courses for teachers. Opportunities for future research are abundant when using the findings of this study.

Summary and Conclusion

Teacher professional development is a crucial component of a teacher's growth (Learning Forward, 2009). However, research shows that the professional development teachers attend is not beneficial for improving teachers' professional practices (Hill et al., 2013). Effective professional development should follow specific strategies (Darling-Hammond et al., 2017). Utilization of researched-based strategies for professional development and adult learning theory to create professional development courses to improve courses. Conducting this study allowed the researcher to understand the use of research strategies during professional development courses.

This case study began with creating a professional development course observation tool. The tool's creation followed the study's theoretical framework, consisting of effective professional development strategies, online teaching strategies, and adult learning theory. The ROPE investigated the strategies implemented within the professional development courses. The researcher observed and transcribed the professional development courses as a way of learning about their effective strategies. The study found that the implementation of the researched strategies was minimal during the professional development courses. The courses differed in strengths and weaknesses depending on who the professional development course leader was, showing a discrepancy in the training of the course leaders.

The study's findings suggest that online gifted and professional development courses not using researched effective strategies will significantly impact professional development courses for teachers and professional development in other fields. Professional development course developers and leaders can observe their courses for strategies to ensure courses are practical and meaningful for participants. Improving professional development courses immediately impacts teacher performance in the classroom. Improvement of professional development courses will have an immediate, positive effect on a teacher's views of professional development courses when treated as adult learners.

The following chapter provides an overview of the data collection, data analysis findings from the individual case analysis, and framework analysis. The chapter also provides recommendations for change for various professional development stakeholders. The chapter provides a proposal for distribution to the Quincy Independent School District and the Texas Association for Supervision and Curriculum Development (TASCD).

CHAPTER FOUR

Distribution of Findings

Executive Summary

Professional development courses can provide a rich opportunity for teachers to strengthen their instructional practices in the classroom, yet Hill et al. (2013) argue that research on these courses has not provided clear best practices for facilitators to employ. Effective professional development includes strategies aligned with teacher goals, utilizes active learning, implements a coaching model, facilitates collaboration, and sustains over an extended period (Darling-Hammond et al., 2017). To ensure professional development includes these strategies, leaders need to evaluate courses. However, many districts do not evaluate professional development courses (Gubbins et al., 2002; Guskey, 2002). To create change in professional development courses, evaluate courses for effectiveness.

The case study shows the effective strategies utilized during four online professional development courses for teachers of gifted and talented students and highlights those strategies not used. School districts can use this information to improve and build upon current professional development courses to better teacher professional development programs. From this study, an observation tool emerged as useful to measure the effectiveness of professional development offered through an online platform. The ROPE (Research-Based, Online Professional development that is Effective; see Appendix A) can be used by leadership to convey expectations to professional development facilitators and understand how effective the professional development was.

Overview of Data Collection and Analysis Procedures

To understand the use of effective professional development strategies and their impact on teachers, a case study using construct validity by providing numerous sources of evidence was used (Yin, 2018). The case study occurred at a single site, the Quincy Independent School District (Creswell & Poth, 2018). The case focused on online gifted and talented professional development provided for teachers by the school district.

The research utilized three components within the theoretical framework for this study. Effective professional development research strategies inform one of these components. The framework uses online teaching strategies relating to evaluating professional development and the opportunity for teachers to discuss and ask questions about their learning. The final component includes five principles of andragogy. The researcher combined the different components to form the theoretical framework.

The case study included four online gifted and talented professional development courses offered during the summers of 2020 and 2021. The case study allowed the researcher to conduct a within-case analysis of each of the courses. A case study also allowed the researcher to complete a framework analysis of the courses to understand the similarities and differences in professional development strategies implemented and not implemented to show improvement in district gifted and talented teacher professional development. This case study sought to address the following questions:

1. What effective strategies were employed by gifted and talented professional development online courses?
2. How were effective professional development strategies used in online professional development courses for elementary teachers related to the principles of andragogy?

The data collection process consisted of two separate phases. The researcher created an observation form based on the theoretical framework to observe online professional development courses for the first phase. For the second phase, the researcher used the observation tool to observe the four recorded gifted and talented professional development courses offered to teachers during the summers of 2020 and 2021 by the Quincy Independent School District.

The data analysis process occurred through multiple steps. First, the researcher observed the four professional development courses offered, took field notes, and completed the observation tool. The researcher then transcribed the four professional development courses and wrote memos. Using the memos, the researcher applied the established codes by the three components of the theoretical framework to the transcription.

Summary of Key Findings

Throughout the research process, the researcher used codes established by the theoretical framework to investigate the professional development courses offered to gifted and talented teachers by the Quincy Independent School District. The researcher found the courses employed active learning, as shown in Table 4.1. However, the courses did not address activating teachers' prior knowledge or collaboration throughout the course.

The researcher also found that courses used synchronous activities and had an organized course that was easy for participants to follow. The final course observed, *Serving the Underserved*, allowed interaction between the facilitator and participants.

However, neither case provided a discussion opportunity, asynchronous activities, or an evaluation of the course for participants (Table 4.2).

Table 4.1

Effective Professional Development Analysis

Course	Prior Knowledge Activated	Active Learning	Collaboration
SCAMPER and RAFT		✓	
Creativity using Adobe Spark		✓	
Strategies for Cognitive Engagement		✓	
Serving the Underserved		✓	

Table 4.2

Online Teaching Strategies Analysis

Course	Discussion	Asynchronous Activity	Synchronous Activity	Course Evaluation	Organized Course	Interaction
SCAMPER and RAFT			✓		✓	
Creativity using Adobe Spark					✓	
Strategies for Cognitive Engagement			✓		✓	
Serving the Underserved			✓		✓	✓

The research showed out of the five principles of andragogy utilized within the theoretical framework, the courses addressed why the teachers were learning the information provided in the course and how it applied to their teaching. Only one course allowed teachers to share their prior experiences, and one course allowed participants self-directed learning opportunities. None of the professional development courses

allowed for problem-centered activities or considered the teachers' social roles. Table 4.3 illustrates the components of andragogy found in the four courses that served as the units of analysis.

Table 4.3

Principles of Andragogy Analysis

Case	Why	Self-Directed Learners	Share Prior Experiences	Social Roles Considered	Problem-Centered
SCAMPER and RAFT	✓				
Creativity using Adobe Spark	✓	✓			
Strategies for Cognitive Engagement	✓				
Serving the Underserved	✓		✓		

While the research shows an increase in the use of researched effective strategies over the span of the case, the research also highlights many missed opportunities for strategies which were not employed during any of the professional development courses. The professional development courses improved the interaction between participants and the facilitator and in sharing prior experiences. However, the courses did not activate participants' prior knowledge or utilize collaboration in effective professional development strategies. The courses did not improve in the discussion, asynchronous activities, or course evaluation in online teaching strategies. Finally, the courses did not improve in andragogy in considering social roles or providing problem-centered activities. The researcher suggests numerous findings to improve professional development courses using these findings.

Informed Recommendations

The data collected from this case study addressed the need to learn more about professional development courses provided to teachers. Based on the data collected, the study supports the following recommendations:

1. School District Leaders

- a. Observe the professional development courses provided by the district using the ROPE observation form.
- b. Provide training on facilitating professional development courses for district professional development leaders.
- c. Create a position that focuses on evaluating and addressing professional development needs in the district.
- d. Ensure each professional development course includes a feedback evaluation form for participants after the course.
- e. Meet to discuss evaluations to continuously improve professional development courses for the district.

2. Campus Administration

- a. Follow-up with campus teachers to ensure professional development courses are aligned with teachers' T-TESS goals.
- b. Provide professional development on campus that meets the needs of teachers seen through the Professional Learning Community (PLC) process.

3. Teachers

- a. Attend professional development courses that align with your T-TESS goals.
- b. Understand why you are attending the professional development course before attending.
- c. Evaluate the professional development courses you attend by completing a course evaluation, or emailing the facilitator your feedback after the course.

The data from the case study supported recommendations for numerous stakeholders within professional development. The recommendations provided can support school district leaders, campus administrators, and teachers in improving the district's current professional development practices. Each stakeholder can use the findings to help improve and support professional development courses for teachers.

Findings Distribution Proposal

Throughout the research, the data identifies the need for additional evaluation of professional development courses. Evaluation of courses should include their use of effective professional development strategies, online teaching strategies, and andragogy. The following sections address the target audience, distribution of materials, and proposals for the research findings.

Target Audience

With the data obtained from the research, the researcher hopes to reach two main organizations with the findings. The first organization the researcher hopes to reach is the district the researcher currently works in, the Quincy Independent School District. The second organization is the Texas Association for Supervision and Curriculum Development (TASCD).

The first organization the researcher hopes to share the findings with is the Quincy Independent School District. The researcher wants to reach this school district due to the researchers' connection with working in the district. The district can use the findings to improve the professional development courses provided to teachers within the district. The district can use this research to create a professional development coordinator position to oversee the professional development courses provided in the

district. The research investigates the professional development courses for the researched strategies to ensure their effectiveness for teachers.

The second organization the researcher hopes to reach is the Texas Association for Supervision and Curriculum Development (TASCD). This organization is the Texas branch of a national organization, the Association for Supervision and Curriculum Development (ASCD), focusing on curriculum and development issues and building leaders throughout school districts. By reaching this organization, the researcher shares the development of the ROPE to encourage the improvement and evaluation of professional development courses across the state of Texas.

Proposed Distribution Method and Venue

To distribute the findings to the Quincy Independent School District, the researcher will present the findings to the key stakeholders in the district. These key stakeholders include the district superintendent, area superintendents, and director of curriculum and development. The researcher will share the presentation of findings with stakeholders in the district great room in the administration building, which provides ample seating and projector ability for the researcher. The presentation will last no more than thirty minutes to allow time for questions and comments at the end and hold participants' attention. The goal of the presentation is to provide district leaders with the research findings and implications for the district.

To distribute the findings to the Texas Association for Supervision and Curriculum Development (TASCD), the researcher will create an article to submit to the organizations' Leaders of Learners quarterly newsletter. The researcher selected this organization due to the over 2,000 subscribers, including district superintendents,

curriculum developments, principals, and classroom teachers. To publish for the organization, the researcher must write a 1,000–2,000-word article.

Distribution Materials

To present the findings to the Quincy Independent School District, the researcher will use presentation slides to share with key stakeholders that include the research findings, observation tool, and suggestions for the districts using the findings. To share the findings with the Texas Association for Supervision and Curriculum Development (TASCD), the researcher will write a 2,000-word article to submit to the 2022 quarterly publication of *Leaders of Learners*.

Conclusion

Effective professional development needs constant evaluation to improve courses for teacher development. The researcher found the Quincy Independent School District professional development courses do not align with effective research strategies of professional development, online teaching strategies, or andragogy. Minimal strategies are being used during the courses to guide teacher learning. Teachers' professional development courses need to be designed using researched strategies and observed to ensure their use.

The researcher will use multiple opportunities to share the research findings. The researcher will present the findings to the Quincy Independent School District key stakeholders during a professional presentation to share this information. To share the research findings and observation tool created during the research process, the researcher will share them in a paper and submit them to the Texas Association for Supervision and Curriculum Development (TASCD). These two opportunities will allow the researcher to

share the research findings with key stakeholders for gifted and talented teacher professional development.

APPENDICES

APPENDIX A

The ROPE Observation Tool

THE ROPE <i>An Observation Tool to Observe an Online Professional Development Course</i>		
Categories of Effective Instructional Practices	Observed in Session	Observer Descriptive Notes
Effective Professional Development		
Continuous course	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Prior knowledge activated	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Opportunities for active learning	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Collaboration with others	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Online Teaching Strategies		
Discussion opportunity	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Asynchronous Activities	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Synchronous Activities	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Evaluation of course	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Organized course easy to follow	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Interaction between the facilitator and teachers	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Principles of Andragogy		
Provided explanation for why teachers were learning the information	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Opportunities for teachers to be self-directed learners	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Teachers shared prior experiences	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Different social roles considered	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Problem-centered activities	<input type="checkbox"/> Observed <input type="checkbox"/> Not Observed	

APPENDIX B

Notes on Each Case Using the ROPE Observation Tool

Course One: Scamper and Raft

Scamper and Raft 2020

THE ROPE		
<i>An Observation Tool to Observe an Online Professional Development Course</i>		
Categories of Effective Instructional Practices	Observed in Session	Observer Descriptive Notes
Effective Professional Development		
Continuous course	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Prior knowledge activated	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Opportunities for active learning	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Participant practiced completing scamper
Collaboration with others	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Online Teaching Strategies		
Discussion opportunity	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Asynchronous Activities	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Synchronous Activities	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Mentimeter questions Padelt raft ideas
Evaluation of course	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Organized course easy to follow	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Participates sat and watched the presentation
Interaction between the facilitator and teachers	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Principles of Andragogy		
Provided explanation for why teachers were learning the information	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Differentiation is required by law for GT students
Opportunities for teachers to be self-directed learners	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Teachers shared prior experiences	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Different social roles considered	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Problem-centered activities	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	

Course Two: Creativity with Adobe Spark

Creativity with Adobe Spark 2020

THE ROPE		
<i>An Observation Tool to Observe an Online Professional Development Course</i>		
Categories of Effective Instructional Practices	<i>Observed in Session</i>	<i>Observer Descriptive Notes</i>
Effective Professional Development		
Continuous course	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Prior knowledge activated	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Opportunities for active learning	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Collaboration with others	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Online Teaching Strategies		
Discussion opportunity	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Asynchronous Activities	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Synchronous Activities	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Evaluation of course	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Organized course easy to follow	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Participants sat and listened to presentation
Interaction between the facilitator and teachers	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Principles of Andragogy		
Provided explanation for why teachers were learning the information	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Course began with why the technology is useful
Opportunities for teachers to be self-directed learners	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Teachers shared prior experiences	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Different social roles considered	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Problem-centered activities	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	

Course Three: Serving the Underserved

Serving the Underserved 2021

THE ROPE <i>An Observation Tool to Observe an Online Professional Development Course</i>		
Categories of Effective Instructional Practices	<i>Observed in Session</i>	<i>Observer Descriptive Notes</i>
Effective Professional Development		
Continuous course	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Prior knowledge activated	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Opportunities for active learning	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Collaboration with others	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Online Teaching Strategies		
Discussion opportunity	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Asynchronous Activities	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Synchronous Activities	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Mentimeter questions Padlet questions
Evaluation of course	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Organized course easy to follow	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	
Interaction between the facilitator and teachers	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Facilitator allowed participants to unmute and share a positive classroom norm
Principles of Andragogy		
Provided explanation for why teachers were learning the information	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Course began with learning objectives and agenda
Opportunities for teachers to be self-directed learners	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Teachers shared prior experiences	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Teachers shared behaviors they've seen in underserved GT and ranked their experiences with populations
Different social roles considered	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Problem-centered activities	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	

Course Four: Strategies for Cognitive Engagement

K-12 Strategies for Cognitive Engagement 2021

THE ROPE		
<i>An Observation Tool to Observe an Online Professional Development Course</i>		
Categories of Effective Instructional Practices	<i>Observed in Session</i>	<i>Observer Descriptive Notes</i>
Effective Professional Development		
Continuous course	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Prior knowledge activated	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Opportunities for active learning	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Course utilized pear deck
Collaboration with others	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Online Teaching Strategies		
Discussion opportunity	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Asynchronous Activities	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Synchronous Activities	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Pear Deck
Evaluation of course	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Organized course easy to follow	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Interaction between the facilitator and teachers	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Principles of Andragogy		
Provided explanation for why teachers were learning the information	<input checked="" type="checkbox"/> Observed <input type="checkbox"/> Not Observed	Course began with learning objectives
Opportunities for teachers to be self-directed learners	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Teachers shared prior experiences	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Different social roles considered	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	
Problem-centered activities	<input type="checkbox"/> Observed <input checked="" type="checkbox"/> Not Observed	

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