EVIDENCE-BASED INSTRUCTIONAL PRACTICES FOR TEACHERS OF CHILDREN WITH RETT SYNDROME - A Case Study

Todd Geren

Follow this and additional works at: https://digitalcommons.kennesaw.edu/teachleaddoc_etd

Part of the Special Education and Teaching Commons

Recommended Citation
Geren, Todd, "EVIDENCE-BASED INSTRUCTIONAL PRACTICES FOR TEACHERS OF CHILDREN WITH RETT SYNDROME - A Case Study" (2020). Doctor of Education in Teacher Leadership Dissertations. 45.
https://digitalcommons.kennesaw.edu/teachleaddoc_etd/45

This Dissertation is brought to you for free and open access by the Office of Collaborative Graduate Programs at DigitalCommons@Kennesaw State University. It has been accepted for inclusion in Doctor of Education in Teacher Leadership Dissertations by an authorized administrator of DigitalCommons@Kennesaw State University. For more information, please contact digitalcommons@kennesaw.edu.
EVIDENCE-BASED INSTRUCTIONAL PRACTICES FOR TEACHERS OF CHILDREN WITH RETT SYNDROME

A Case Study

In Partial Fulfillment of the
Requirements for the Degree of
Doctor of Education

by

Todd L. Geren

Kennesaw State University
TLED 9900 Dissertation
Dr. Raynice Jean-Sigur-Dissertation Chair
Dr. Ivan Jorrin-Abellan
Dr. Kate Zimmer
ACKNOWLEDGMENTS

This body of work would not have been possible without the support of Kennesaw State University and the guidance of the faculty of The Bagwell College of Education. I am forever grateful to Dr. Raynice Jean-Sigur, Dr. Ivan Jorrin-Abellan, and Dr. Kate Zimmer, who have supported my goals to completion of the Teacher Leadership program. I am grateful to all the Teacher Leadership members I have had the pleasure to learn, grow, and work with during this degree, especially Dr. Shelante Patton, who was my partner throughout this process.

I am thankful for each of the members of my dissertation committee, who has provided me great wisdom, guidance, and has instilled upon me the importance of diligent research and discernment. I would especially like to thank Dr. Raynice Jean-Sigur, a rock upon which I have built the future of my career. While she served as the chair of my committee, she became so much more – a mentor, a colleague, and a friend. The mark of anyone who hopes to be wise is to understand that there is always something more to learn; Dr. Raynice has never let me forget that, and I am forever in her debt.

To my friends and colleagues who has journeyed with me through the past three years, I cannot thank you all enough for the love and support through this time as I pursued a dream. I wish to thank Ms. June Pugh, who covered all of my shifts, and I mean all. Thank you so much! To my brothers Wil Nix and Corey Pittman, “Biff and Bartholomew,” thank you for your prayers of protection.

To my big brother and sister Dominic and Stephanie Silvani, thank you for your severe and intense friendship. Through all of our lives together, you have been a true brother and sister.
DEDICATION

This work is dedicated to my Father God in Heaven, My Savior Jesus Christ, and His Holy Comforter, who carried me through this journey.

To my wife, Elizabeth, and my children, Hannah and Christian. I have no reason without you and all I ever do, I do it to serve you. I love you more than life itself.

To my immediate family, who have always seen the Father’s spark in my life, who raised me to serve Him, who loved me unconditionally, and to my extended family, who love me as their own and continue to do so, I love you all.

To my students, past, present, and future. This is how I serve you. Thank you for giving me purpose.

Finally, to Bill Lawrence, Zach Braff, Donald Faison, John C. McGinley, Sarah Chalke, Judy Reyes, and all of the cast and crew of the hit television show Scrubs: I wrote this entire dissertation while repeatedly watching and listening to your show in the background. Must have been seven runs or so, every single season . . . yes, even that last one. Without you, I could not have done this.

EAGLE!!!
ABSTRACT

EVIDENCE-BASED INSTRUCTIONAL PRACTICES FOR TEACHERS OF CHILDREN WITH RETT SYNDROME

by

Todd L. Geren

Kennesaw State University, 2020

In this study, evidence-based practices (EBP) utilized for children with Rett syndrome (RTT) by a team of special educators in a rural elementary school was examined. Using a case study approach, three teachers in a severe classroom setting who teach a student with RTT were observed and interviewed. The researcher addressed the following:

1. What evidence-based practices, if any, are currently being utilized by local educators to educate a student with RTT?

2. What professional development is needed for teachers and teacher leaders to become more experienced and knowledgeable about those evidence-based practices to support the child with RTT?

Three participants provided a unique understanding regarding the interactions, philosophies, motivations, and practices utilized for more effective education of the child with RTT to focus on the needs of the teaching team in terms of professional development opportunities.

Based on interviews and observations, narratives were developed. Findings indicated participants made use of practices learned from prior professional training and practices used with other students with special needs to educate a student with RTT. In addition, four areas of need were identified in the research including: more information of RTT in general;
practices/educational guides specific to teaching a student with RTT; opportunities for professional development specific to teachers who teach a student with RTT; support of administration to provide professional development for the needs of the teacher with RTT, to include development of professional educational philosophies connected to student need. These identified areas formed a well-rounded perspective on the needs of this special needs teaching team. The personal accounts imparted by the teaching team provided invaluable perspectives into their educational experiences and philosophies, helping to form relevant insights to be reviewed by the educational community.

*Keywords:* Rett Syndrome, Professional Development, Teacher Leadership, *Torres Implementation Process for Teacher Leaders*, Evidence Based Practices
# TABLE OF CONTENTS

## CHAPTER 1: INTRODUCTION

- Statement of Problem ................................................................. 2
- Significance ................................................................................. 3
- Conceptual Framework ................................................................. 5
- Research Questions ....................................................................... 9
- Definition of Terms ..................................................................... 10
- Organization of Dissertation ...................................................... 13

## CHAPTER 2: REVIEW OF LITERATURE

- Definition of Rett Syndrome in Relation to Concept ....................... 15
- Evidence Based Practices in the Special Needs Classroom ................ 19
- Evidence Based Practices in the Severe Special Needs Classroom ..... 21
- Evidence Based Practice for RTT ................................................. 27
- Theoretical Framework ............................................................... 36

## CHAPTER 3: METHODOLOGY

- Worldview and Approach to Research .......................................... 43
- Purpose of the Study .................................................................... 43
- Study Design .............................................................................. 43
- Research Questions ..................................................................... 45
- Participants and Study Context ..................................................... 46
- Data Sources and Collection ....................................................... 48
- Data Analysis ............................................................................. 52
- Trustworthiness of Data .............................................................. 53
- Role of Researcher ....................................................................... 56
- Ethical Principles Driving the Study ............................................. 58

## CHAPTER 4: PARTICIPANT PORTRAITS AND NARRATIVES

- Pseudonyms for Anonymity ......................................................... 61
- Participant Portraits ................................................................. 61
  - June Lovell .............................................................................. 61
  - April Joy ............................................................................... 63
  - May Kinder ........................................................................... 63
- Miss June Lovell’s Classroom ..................................................... 64
- The Typical Day in Miss Lovell’s Classroom ................................. 67
- Observational Narratives ............................................................. 70

## CHAPTER 5: FINDINGS, DISCUSSIONS, AND CONCLUSIONS

- Findings .................................................................................... 79
- Research Data in Relation to Practices Utilized in Miss Lovell’s Classroom .................................................. 80
  - Choice ................................................................................. 81
  - Mobility ............................................................................... 83
  - Communication ................................................................. 85
- Support from Observational Narratives (Torres Process Steps 3-9) .................................................................. 87
- Discussion of Findings ............................................................... 91
- Teaching Philosophy of the Team . . . Promoted in Teaching Lee ................................................................. 91
Connection of Evidence-Based Practices to Torres’s Model ........................................ 92
Torres Process Step 10 ............................................................................................. 93
More Effective Teacher Leaders Who Teach the Student with RTT ...................... 95
Implications for Teacher Leadership......................................................................... 98
Implications for School Administration.................................................................... 99
Implications for Teachers .......................................................................................... 101
Limitations ............................................................................................................... 102
Resolution of Limitations ......................................................................................... 104
Suggestions for Further Research ............................................................................. 104
Summary .................................................................................................................... 105

REFERENCES ........................................................................................................... 107
APPENDIX A – DAILY TEACHER JOURNAL .......................................................... 119
APPENDIX B – PRE-STUDY ASSESSMENT INTERVIEW ..................................... 120
APPENDIX C – MIDTERM STUDY ASSESSMENT INTERVIEW .............................. 122
APPENDIX D – POST-STUDY ASSESSMENT INTERVIEW .................................. 124
Chapter 1: Introduction

Rett Syndrome (RTT) is defined as a progressive genetic disorder of development in children, primarily girls. RTT is the result of a mutation on the MECP2 gene. Atypical RTT, which does not show the mutation on the specific MECP2 gene, but manifests with typical RTT symptoms, is clinically diagnosed by RTT specialists. This syndrome is characterized by choreoathetosis (involuntary twitching or writhing), cerebral palsy, autistic traits (e.g. focused interests, repetitive body movements, delayed language development), seizures, an abnormal respiratory pattern (e.g. breath holding, hyperventilation), acquired microcephaly (significantly smaller head size), and loss of purposeful hand function (e.g. pinching food, holding utensils, etc.) (Hunter, 2007). In the Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition (DSM-V), RTT is classified under “Neurodevelopmental Disorders” which has “factors that may have played a role in the etiology of the disorder, as well as those that might affect the clinical course” (p.33). Furthermore, the DSM-V places Rett Syndrome in the sub-category of “Intellectual Developmental Disorder” (Diagnostic, 2013, p.33). An educator should be aware that while intellectual disorders are generally non-progressive, or rather, may not progress to a worse state, RTT is different in that it has periods of a worsening of the effects, followed by stabilization, or a stopping point, which may later begin to progress into a worse state once again (Diagnostic, 2013, p.34). In laymen’s terms, a child with RTT will have symptoms, for example, atrophy of the muscles, which will show deterioration for a time before the muscles strengthen for another period before deterioration once again. The onset of this genetic disorder generally occurs by the age of two and, currently, there is no known cure, so this disability will remain with the person for the rest of her natural life (Hunter, 2007).
RTT has no documented inherited genetic links from one parent or the other and can completely erase the verbal and gesture-based communication skills, such as waving goodbye, raising a hand in class to answer or ask a question, or even reaching out for a handshake or hug to communicate with other individuals (Hunter, 2007). Although this disorder primarily affects girls, males with RTT lack the extra chromosome that can protect their bodies from completely being overcome by the disorder. Due to this, boys who have the cell mutation on the MECP2 gene that causes RTT often die before or shortly after birth.

**Statement of the Problem**

In the scope of education, students with RTT, just as any student with a diagnosed disability, have the right to a free appropriate public education (FAPE) under the Individuals with Disabilities Education Act (IDEA), guaranteed an education within the “least restrictive environment” (Parkay et al., 2014, p. 89). Due to this law, it is not uncommon for the general education population of educators, as well as special needs educators, to have an opportunity to teach children with RTT. However, many educators may be unaware of the disorder, and therefore, unaware of specific practices to assist the student with RTT (Hunter, 2007). The aim of this study was to determine if special needs educators are aware of practices, if any, to better serve the child with RTT. In addition, determine whether or not special needs educators are utilizing EBP while teaching children with special needs is vital to educational success in the severe special needs classroom. To help determine these, a qualitative case study was conducted to reach a deep understanding of the practices needed to respond to the professional needs of educators teaching children with RTT.
Significance

Resources provided by the public-school system may seem inadequate when there may be more specific resources and evidence-based teaching practices available to assist students with students with RTT (Wanzek et al., 2011). There is a need for families and educators to become more knowledgeable of and experienced with evidence-based teaching practices designed for students with RTT. This problem impacts students, educators, and families who interact with the student with RTT because communication is essential to successful education and improved quality of life (Hunter, 2007).

Teachers who work with children with special needs know how to teach students with specific disorders utilizing specific practices to work best with the individual student (Torres et al., 2014); however, educators who are not prepared or are not aware of EBP may revert to utilizing generalized practices used for other students with disabilities. Downing and Eichinger (2003) state that “learning possibilities for students with severe disabilities are endless and only limited by the creativity of team members who support the student” (p. 29). This suggests that students with RTT, who have a severe disability, do have possibilities for learning, but it is up to the special needs team of educators to determine what practices and methods are most effective. By understanding what practices are successful, and which are not, teachers will have an effect on the education of the child with RTT.

In this study, the following investigations occurred:

1. To investigate the knowledge base of teachers who teach children with RTT.
2. To investigate the amount of opportunities for the teaching team to have professional development for teaching a child with RTT.
3. To investigate teaching practices which currently utilized to help the child with RTT.

4. To investigate what teaching practices are being implemented for the child with RTT that are not being utilized with other children with severe disabilities

This study will allow teachers an opportunity to understand what effective teaching techniques work well in this case study. In addition, the researcher reached a deeper understanding of the teaching techniques that are more effective for teachers to utilize in the education of the student with RTT.

This study was developed through the use of observations, interviews, and stories told by the special needs team of three individuals, one certified special needs educator and two special needs paraprofessionals. This team of professionals teach a child with RTT in a rural, public elementary school, self-contained classroom setting, with limited inclusion opportunities in the general education population. Through this study, other educators who may have the opportunity to educate a child with RTT may reflect upon, learn from, and employ practices which have been tried, what has worked, and what needs to be improved to help the student with RTT have a higher quality of life. The researcher hopes that this study is significant in that it can be experienced by others who have a personal interest in the subject of study. This is known in research as Naturalistic Generalization. Introduced by Deborah Trumbull and Robert Stake (1982), this is the process of research study in which the audience of a qualitative research report will gain insight and learn via reflections on the details of the given report. Conclusions and findings, then, might be applied to the setting of the reader himself. Stake continues to add that these generalizations are the conclusions arrived at through the researcher’s personal engagement
in life occurrences or even vicarious experience constructed so that the reader feels that they have felt the experience happen personally.

The subject for this case study was a team of special needs educators. This team of educators has been chosen for this case study based on a convenience sample (Miles and Huberman, 1994, p. 28) because of their work in the self-contained classroom with students with severe disabilities. Furthermore, they were chosen because they educate a child with RTT in the same classroom as other students with various disabilities. This study focused on their experiences and reflections in a narrative research format. The results of the findings and subsequent presentation will serve as a guide for other teachers working with students with RTT.

**Conceptual Framework**

I studied the educational practices utilized in the general education of a female child with RTT. The purpose behind focusing on these practices is to determine what practices the teaching team is using to educate the child with RTT. If there was specialized instruction of EBP for the student with RTT, I then transitioned to the effects, both positive and negative, of the practices. If this was not occurring, I was to transition my focus to the professional development of teacher leaders who will advocate for specialized practices which do benefit the teacher of a student with RTT.

I have investigated various publications in the review of literature which were related to evidence-based practices in special needs education, the medical obstacles which RTT can provide educators, and potential practices that may currently be utilized for educators who teach a child with RTT. From here, I was able to choose the variables that have been studied to show support for the practices utilized when educating a child with RTT. As of the publication of this dissertation, I was able to find many publications with practices and strategies available to
educators for children with special needs in general, but I was unable to find anything that was *specific* to the education of a child with RTT. It would appear based on the literature that most of the research focused on quality-of-life improvement education. Educators teaching a child with RTT looked at communication and mobility as primary focuses when educating a child with RTT.

I studied the special needs team of a public elementary school. The team consists of three educators, one lead teacher and two paraprofessionals. This study was driven by the research questions in that I hoped to find an answer as to what practices are being utilized for the child and, regardless of creation of new practices, what professional development was available to those teachers so that they may fully advocate for specified practices for the student with RTT as teacher leaders in their field.

The conceptual framework connects to the theoretical framework of disability inquiry in that these educators focused on the overall quality of life education of the child with RTT. Disability inquiry addresses the “understanding [of] this population’s socio-cultural perspectives allowing them to take control of their lives rather than a biological understanding of the disability” (Creswell, 2014, p. 33-34). Those individuals with RTT may never understand that they have a disability, and for the most part, are unaware than anything is different about them. This inquiry focuses more on the concept that these individuals may have the chance to make decisions for themselves rather than relying on family or physicians to all of life’s choices. Consistent use of or the creation of practices for teachers to utilize in the education of children with RTT may lead to the establishment of independence to take greater control of their own lives.
Creswell (2014) cites Mertens (2009, 2010) in his description of disability inquiry as a theoretical framework. This inquiry addresses how schools utilize inclusion in their education and primarily encompasses administrators, teachers, and parents who have children with disabilities (Mertens, 2009, 2010). In a previous study, Mertens (2003) explains how, at one point, research of disability inquiry has developed. Initially, many researchers considered the medical model of disability as only a model that demonstrated sicknesses and the role of the medical community affecting that sickness/disability. Now researchers see more of an environmental response to individuals with a disability, where the focus is on the dimension of human difference, not defect. Creswell (2014) says that this referred to as a disability interpretive lens. When the researcher views these individuals with this lens, as individuals with disabilities are different based on the reflections of research, he or she will look more closely at the type of questions asked, the labels which the researcher applies to the individuals within the study, consider more closely how the data collection will benefit the community, the appropriateness of communication methods, and how the data are reported in a way that is respectful to relationships.

Siebers (2008) support this by offering the claim that disability studies can actually change basic assumptions about identity, ideology, language, politics, social oppression, and the body. In a general worldview, the ideas about the capacity, limitations, experiences, or needs of individuals with a disability are socially constructed and will continue to change. Researchers could then argue that insight into the lives of the disabled and those who affect change for the disabled would offer insight to the global community.

In conjunction with this framework, the researcher determined it would be beneficial to exemplify the data by utilizing the themes of the *Torres Implementation Process for Teacher*
Leaders. Torres et al. (2014) offers educators a ten-step implementation process to help educators in the special needs classroom become more effective teacher leaders by spearheading best practices in choosing EBP. The tenth step of implementation as presented by Torres et al. (2014) is perhaps one of the most important to this study. Once an educator begins utilizing these practices in the classroom effectively, that educator should become a teacher leader and advocate for these practices. By sharing their experiences and newfound expertise, these teachers become advocates for their peers to begin utilizing evidence that has been tried by colleagues, producing real life, observable results, and coming from the school’s most trusted professionals – the educators themselves (Simons et al., 2003).

The conceptual framework justifies the reason and rigor behind conducting a study with the aim of preparing teacher leaders to begin supplementing or even replacing conventional methods of improving the educational process in the class of the child with RTT by introducing and practicing EBP for positive achievement. Through preliminary research which I have conducted in my doctoral program, existing research in the field, and personal testimony as the father of a child with RTT, I sought to explore what effects a change in the standards of education by the utilization of evidence based practices, defined as “integrating individual clinical expertise with the best available external evidence from systematic research” (Sackett et al., 1996), will have on the long-term life quality of students who cannot learn “conventionally” as well as the possible changes an educator may need to make in traditional education practices to help gain knowledge about and offer support to children with RTT. The qualitative research approach of interpretive case study allowed me to fully explore this topic and create a narrative to explain the experiences of the educators in the day to day experiences with the special needs program. These experiences, if accurately captured and adequately reported, provide a worthy
subject for my dissertation study and hopefully serve to provide the necessary insight to inform those with special needs children who would seek to improve the quality of life for RTT students.

**Research Questions**

The purpose of this qualitative case study was to investigate evidence-based practices that a team of teachers are using to educate a student with RTT in self-contained, special needs class in a public school. The following research questions guided the study:

1. What evidence-based practices, if any, are currently being utilized by local educators to educate a student with RTT?
2. What professional development is needed for teachers and teacher leaders to become more experienced and knowledgeable about those evidence-based practices to support the child with RTT?

The school of focus in this study only had one student with RTT. The school serves 469 registered students ranging in grade from Preschool through Fifth Grade. Of these students, 9%, around 42, are considered students with special needs. Of these special needs students, there is only one student who has been clinically diagnosed with RTT.

The special needs team in this study provide program, academic, physical, medical, and behavioral supports to the students with special needs served within their classroom. This team was chosen based on overall experience with special needs students, curriculum planning, and experience with a student with RTT.
Definitions of Terms

504 accommodations - a plan developed to ensure that a child who has a disability identified under the law and is attending an elementary or secondary educational institution receives accommodations that will ensure their academic success and access to the learning environment.

atypical - not representative of a type, group, or class

autism - a developmental disorder of variable severity that is characterized by difficulty in social interaction and communication and by restricted or repetitive patterns of thought and behavior.

Asperger’s Syndrome - a developmental disorder related to autism and characterized by higher than average intellectual ability coupled with impaired social skills and restrictive, repetitive patterns of interest and activities

electroencephalography (EEG) - an electrophysiological monitoring method to record electrical activity of the brain

encephalitis - an inflammation of the brain, which can be caused by either bacteria or virus

evidence-based practices - integrating individual clinical expertise with the best available external evidence from systematic research

Eye gaze - a way of accessing computers or communication aids using a mouse that is controlled with the eyes
Eye gaze technology – any technological aid (computer, laptop, tablet, smart-device) that utilizes eye gaze as a means of control of applications or software

FERPA - The Family Educational Rights and Privacy Act (FERPA) is a federal law that affords parents the right to have access to their children’s education records, the right to seek to have the records amended, and the right to have some control over the disclosure of personally identifiable information from the education records.

functional magnetic resonance imaging (fMRI) – noninvasive imagining that measures the small changes in blood flow that occur with brain activity

functional near-infrared spectroscopy (fNIRS) – noninvasive optical imaging that measures changes in hemoglobin (Hb) concentrations within the brain

HIPPA - The Health Insurance Portability and Accountability Act (HIPPA) is a US law designed to provide privacy standards to protect patients' medical records and other health information provided to health plans, doctors, hospitals and other health care providers; standards which provide patients with access to their medical records and more control over how their personal health information is used and disclosed

human immunodeficiency virus infection (HIV) - a viral infection that causes AIDS and gradually destroys the body's immune system

individualized education plan (IEP) - a plan or program developed to ensure that a child who has a disability identified under the law and is attending an elementary or secondary educational institution receives specialized instruction and related services
Inductive method of thematic analysis – a method of formulating observations and results of a study. In the inductive method, the nature of the gathered qualitative data dictates themes and results of the study.

Meningitis - an inflammation of the membranes that cover the brain and spinal cord, which can be caused by either bacteria or virus.

Neurometabolic disease - a group of disorders that are characterized by a lack or dysfunction of an enzyme or vitamin necessary for a specific chemical reaction in the body.

Rett Syndrome - a rare genetic neurological disorder that occurs almost exclusively in girls and leads to severe impairments, near constant repetitive hand movements, and loss of complex vocal communication; recognized in children between 6 to 18 months as they begin to miss developmental milestones or lose abilities they had gained; caused by mutations on the X chromosome on a gene called MECP2, occurs worldwide in 1 of every 10,000 female births, and is even rarer in boys.

Severe classroom setting - students with severe disabilities are in need of a self-contained setting, with a smaller class size and more one-on-one time with educators and caretakers; the regular classroom setting would not serve them well due to safety concerns for both the students with severe disabilities and other students.

Tobii Dynavox - an eye gaze-enabled speech generating device featuring an eye tracker and eye gaze technology, designed for people with conditions such as cerebral palsy, ALS, or spinal cord injury; controlled completely with the eyes.
typical - showing the characteristics expected of or popularly associated with a particular person, situation, or thing

vasomotor disturbances - characterized by changes in skin temperature and color; in cold extremities, a decrease in blood flow can cause decreased tissue saturation and tissue acidosis

**Organization of Dissertation**

Chapter 1 of this dissertation serves as the introduction to the proposed study. The purpose of this case study and some important background information was presented during this chapter. A definition of terms was provided to guide the reader into understanding what important concepts will be discussed throughout the paper.

Chapter 2 presents a literature review that is important for understanding why this research is important. The literature review built the groundwork for this narrative study and teaching techniques that have been used by other educators.

Chapter 3 serves to present the methodology for this study. The lay out for the interview and a rationale for why case study research was chosen is discussed in this chapter. An explanation of case study research, the sample population, the research questions, and the interview techniques were presented during this chapter.

Chapter 4 of this dissertation serves as a portrait of the participants within the study. Rich narratives assist with the triangulation of data, but more importantly, it tells the story of these participants in a unique format so that the researcher and the reader may have a deeper understanding of the case study.

Chapter 5 presents the findings as discovered by the researcher during the field study phase. The data provides answers to the research questions posed in this dissertation and serves
as a conclusion and implications summary of the entire case study. Reflections of the implications and suggestions by the researcher for further research completes the dissertation.
Chapter 2: Review of Literature

The review of literature supports the relevance of the topic under study and justifies the need to conduct the proposed study. The articles and researcher mentioned within built the groundwork for this narrative study and teaching techniques that have been used by other educators.

Definition of Rett Syndrome in Relation to Concept

RTT is relatively unknown to the popular world of genetic disorders; that is, little is known about RTT on a broad spectrum (Hunter, 2007). There are assumptions that RTT is another disorder of the autism spectrum and, while it is not focused on the disorder specifically, offers the reader a study of possibilities when it comes to the educational improvement of the student with autism (Wanzek et al., 2011).

According to Kaminsky (2013) of the RTT Foundation, leading experts who contribute to the international resource website (see: www.rettsyndrome.org), RTT is “a rare non-inherited genetic postnatal neurological disorder that occurs almost exclusively in girls and leads to severe impairments, affecting nearly every aspect of the child’s life: their ability to speak, walk, eat, and even breathe easily” (Para.1). Dr. Alan Percy, RTT Specialist at the University of Alabama in Birmingham, Alabama, confirms that the genetic mutation is difficult to determine, since the mutation has no documented evidence linking the mutation to the father or the mother specifically (Percy, 2012.) While RTT experts do not place RTT communication issues in the autism spectrum, the American Psychiatric Association (APA) cites evidence that does place it on the spectrum due to communication impairments. According to the DSM-V (2013), Rett Syndrome has traits that link it to Autism Spectrum Disorder. Based on Diagnostic Criteria 299.00, RTT is among those disorders that has “...stereotyped or repetitive motor movements,
use of objects, or speech . . .” as well as symptoms which “must be present in the early development period . . . [and] cause clinically significant impairment in social, occupational, and other important areas of current functioning” (p.50). Both Dr. Kaminsky and the APA cite evidence indicating that there are communication impairments in those children with RTT.

RTT is so named for its discoverer, Dr. Andreas Rett, a pediatrician in Vienna, Austria. He observed female children in his waiting room making specific hand-washing motions. He was curious about this and began a study to compare their clinical and developmental histories. He discovered many similarities in the girls. Upon further inspection of his records, Rett discovered six other girls who had similar behavior. He opted to simply film the physical aspects of his own patients and then traveled Europe in search of similar patients. Another case was caught by Dr. Bengt Hagburg of Sweden (Hagberg et al., 1983). He, too, collected the records of these girls, but put them aside for later study (Kaminsky, 2013).

In 1966, Rett published his findings in obscure German medical journals which did not reach the mainstream scientific community (Hagberg et al., 1983). However, in 1983, an article on the disorder appeared in an English medical journal called *Annals of Neurology* (Hagberg et al., 1983). This report finally caught the attention of the medical world. Increased funding for research from Baylor University of Houston, Texas and Stanford University of Palo Alto, California offered the first opportunity for researchers to attempt to pinpoint the cause of RTT (Kaminsky, 2013).

A breakthrough occurred in 1999. A researcher at Baylor University, Dr. Ruthie Amir, discovered the MECP2 gene. Furthermore, Amir’s team, led by Dr. Huda Y. Zoghbi, discovered the gene’s location at the Xq28 site of the X chromosome. The team discovered that the mutation found here as the molecular diagnosis for RTT. This discovery provides the link for
the X chromosome link in female patients and that the mutation can occur on either X chromosome, which means that RTT is a dominant disorder, explaining why it is primarily found in females (Hunter, 2007, p. 31).

The disorder does not generally show signs or symptoms until the child’s second year of life. It is often misdiagnosed as other conditions such as cerebral palsy (CP), autism or other developmental disabilities. While it is known that RTT is generally a result of the presence of a mutation on the MECP2 gene, this mutation is also known to be present in other disorders. Several methods are used to determine if a child has RTT. Methods of diagnosis include blood tests with along a clinical observation of the child and other tests for the MECP2 mutation on the X chromosome (Kaminsky, 2013).

Kaminsky and the RTT Foundation have compiled the main criteria for the diagnosis of RTT. The main criteria include the partial or complete loss of purposeful use of hands and spoken language, the child with RTT may experience gait abnormalities. The child may display stereotypic hand movements, such as wringing, writhing, squeezing, slapping, clapping, tapping, mouthing, or rubbing. Supportive criteria for atypical RTT includes breathing disturbances (when awake) impaired sleep pattern, abnormal muscle tone, peripheral vasomotor disturbances, scoliosis, growth retardation, small extremities (hands and feet), inappropriate screaming or laughing, high tolerance for pain, and intense eye communication. What the criteria do not include are those criteria as a result of brain injury due to trauma, neurometabolic disease, or severe infection that may cause neurological problems, such as encephalitis, meningitis, or HIV (Neurological, 2020). This also includes any grossly abnormal psychomotor development in the first six months of life (Kaminsky, 2013). This aspect of the fundamental definition of RTT, as related to the research concept, is supported in Wanzek’s (2011) definition of RTT. Wanzek has
written that RTT’s relative symptoms can be misdiagnosed as Asperger's Syndrome or autism. The diagnosis of RTT, while clinical, still provides aspects of the disorder that helped create the parameters, data, and explanations to create a frame of reference (2011). For educators, this may impact the types of practices chose to educate the student with RTT. For example, with the knowledge that a student with RTT will most likely develop consistent hand washing/wr Ting motions with the hands (Hunter, 2007), an educator would utilize this knowledge to choose technological assistance for writing, or perhaps speech to text opportunities since holding a writing utensil or developing handwriting may seem improbable.

RTT is similar to autism in that both disorders have impairments in speech and emotional traits. However, children meeting criteria for RTT do not meet those for placement on the autism spectrum. Symptoms that have been seen in RTT but not in autism include deceleration of the rate of head growth, loss of purposeful hand skills, and mobility or the irregular breathing patterns. Boys are diagnosed with autism more often than girls are and even those who are diagnosed with RTT. A symptom found in many of these boys includes hand flapping, much like that of the RTT girl. However, the inherent purposelessness of the hand stereotypes common to RTT are not seen in autism. Emotionally, the RTT child almost always prefers people to objects, but the opposite is usually the case in autism. Unlike children who have autism, the child with RTT often enjoys affection (Kaminsky, 2013).

Since it is usually misdiagnosed, RTT in the education system may result in practices normally utilized in autism curriculum being utilized instead of practices specifically geared for the RTT student (Hunter, 2007). Objectives and daily activities for the child with RTT should not be restricted, and should, in fact, be supported with teacher-driven instruction and EBP that adhere to an Individual Education Plan (IEP), by including activities that allow the child with
RTT to interact with her peers for improved social interaction (Hunter, 2007). Following these procedures, the educator will be more equipped to meet the individual educational needs of the child with RTT.

**Evidence Based Practices in the Special Needs Classroom**

The No Child Left Behind Act (NCLB, 2006) and the Individuals with Disabilities Education Act (IDEA, 2008) both require educators under federal law to provide special needs students with excellence in education, to specifically include evidence-based practices, according to Articles 20 U.S.C. § 6301 [9] and 20 U.S.C. § 1401[c][5][E] and [F]. Through this legislation, the Institute of Education Sciences (IES) and the Council for Exceptional Children (CEC) created a set of guidelines (2008) to determine if teacher practices are evidence-based. Most educators are aware of the terms and the laws but are uniformed of proper methods or resources available.

Educators do report that research is valuable and effective; however, few seem to use evidence-based practices in the classroom (Burns and Ysseldyke, 2009). In a study by Williams and Coles (2007), Burns and Ysseldyke are preemptively echoed; the study showed that educators lack the time to search for proper resources as well as access to these resources. In fact, this study showed that educators did not feel confident in finding research independently. Researchers seem to have ready access to research information, but educators may not. If the educator is in need of research for evidence-based practices, strengthening their skills in finding the research is needed (Beach et al., 2007). Stanovich and Stanovich (2003) recognized that most teachers are not researchers; however, teachers and researchers share a need for a basic understanding of research concepts. The three basic concepts of research that are most prevalent are scientific-based, research-based, and evidence-based research practices.
Scientific-based practice outlines what indicators of research “must be present in order for a particular practice or program to be evaluated for general use” (American Educational Research Association, 2009). Scientific-based research describes methods to test instructional practices and is guided by guidelines which ensure the following:

a. systematic cause-and-effect research design uses observable, measurable outcomes;

b. replication is possible by other scientists;

c. and approval by a panel of independent experts before publication, known as a peer review (20 U.S.C. 7801 [37]; Stanovich and Stanovich, 2003; Thompson et al., 2005).

This concept should help the educator answer the question, “What is most likely to work?” (Kretlow and Blatz, 2011, p. 10).

Research-based practice is the broadest of the other practices. It is used to describe practices which are studied but have not qualified for all the indicators of scientific-based research. According to Kretlow and Blatz (2011, p.10) the term “research-based . . . is the broadest of the three terms, and is used to describe programs or practices that have been studied in some way, but not necessarily using all of the quality indicators of scientifically based research.” This type of strategy may refer to “a single study that has not been replicated, designs that do not allow an evaluation of cause and effect, small numbers of participants, examinations of contextual variables such as teacher or student preferences, and studies that may or may not have been vetted by an independent panel of experts” (Kretlow and Blatz, 2011, p. 10). This term is also used to describe data indicative of the effectiveness of practice.
Evidence-based practice has two key concepts which allow for deeper understanding. The first concept is the type of research. This refers to the way researchers apply an intervention and measure its effectiveness. The IES (CEBP, 2003) and CEC (2008) agree that the “type of research must be quantitative, which means the effects . . . must be measurable” (Woodcock et al., 2001). Furthermore, interventions should show a clear cause and effect relationship. Since special needs education lends itself to small group focus and heterogeneous settings, evidence-based practice is recognized by the CEC as effective if the studies are sufficiently replicated (Horner et al., 2005). This concept within this qualitative study is not the focal point of the case study; instead, any quantitative data is supplemental to the second concept of evidence-based research, upon which this study focused.

The second concept focuses on the magnitude of the studies, or the amount of studies showing a strong, positive relationship between interventions and improved academic behavior. Magnitude examines the effects of a collection of studies leading to consensus about the effectiveness of practices, which is known as research synthesis (Kretlow and Blatz, 2011). This concept of study is connected to this case study in the hopes that there will be continued research for evidence-based practice for educators teaching a student with RTT to increase the magnitude of future studies.

Evidence Based Practices in the Severe Special Needs Classroom

Browder et al. (2014) utilized EBP to create an Innovation Configuration Matrix to guide teacher preparation professionals in further guidance for educators who wanted to utilize EBP in their own classrooms. According to the team in their study, Innovation Configurations for Children with Severe Special Needs originate from the principles of applied behavior analysis. In one example, the team cites Miller and Test (1989). In this body of research, the researchers
compared the effects of constant time delay and most-to-least intrusive prompts on the acquisition of laundry skills for students with moderate intellectual disabilities. They cite this experiment as a strong evidence base for using systematic instruction to teach academic skills to this population (Browder et al., 2009; Morse and Schuster, 2004). Furthermore, they documented Jameson et al. (2007) in which this practice is illustrated by teaching symbol and word recognition to students with moderate intellectual disabilities using constant time delay and differential reinforcement. The study revolves around defining a skill that is measurable and can be taught by an educator to a student. Browder et al. then hypothesized that this could be applied to academic skills. Courtade et al. (2010) then taught teachers to follow steps of a task analysis to teach using inquiry-based science instruction. In the resulting data, they determined that the following were notable EBP in the classroom for students with severe special needs:

- **Prompting** – guidance of a task presented with a stimulus for the desired outcome, such as teaching sight words and food classification.

- **Time delay** - a system in which the prompt is concurrently presented with the target stimulus and then gradually faded out over time of successive trials. For example, teaching vocabulary for words and definitions across content.

- **Reinforcement** – strengthening of skills. When utilizing prompting and time delay, reinforcing of successful trials aids in prolonged learning. Examples include praise and tangibles (e.g., stickers, extra computer time).

Browder et al. (2014) summarizes the data by stating that “a large body of research for teaching a wide range of discrete and chained skills to students with moderate and severe disabilities supports systematic instruction. Teachers should select prompting systems that match the complexity and nature of the target skill” (p. 16).
In the literature here, one would expect to find more examples of EBP for the educator who teaches the child with severe disabilities. However, there are researchers who have discovered that the range of practices available is very limited. In an article by Spooner et al. (2017), a research team sought to establish the state of affairs for EBP in the classroom for students with severe disabilities. This study established three key components of observation that the team felt necessary to a program of education that would offer a student with severe needs better quality of life: daily living and the ability to do it well, social communication skills, and academic skills. Spooner et al. (2017) refers to Browder et al. (2014) for educators who teach children with severe disabilities and deemed that the practices of prompting and time delay were sufficient for their study.

The team also adds one more EBP that they discovered in their study. Spooner et al. (2017) refers to a study developed by Hudson and Test (2011) in which the research focused on sight word reading and shared stories for literacy instruction. These skills include listening, repeated story lines, identification of author and title, and turning the page to continue the story. Spooner’s analysis of this practice did not definitively establish the shared story practice (2017); however, the team found a moderate level of support with functional relations established in Hudson and Test’s (2011) studies. This can be added now to the limited list of EBP utilized in the education of students with severe disabilities as an attempted practice, even if it was labeled as only moderately supportive.

Even though Browder et al. initialized a new study in 2014 for Innovative Configurations to help teachers who teach children with severe disabilities, Browder teamed up with Cooper-Duffy in a 2003 study which focused on the accountability requirements of government led educational practices, such as NCLB and IDEA. Browder and Cooper-Duffy (2003) focused on
the concept of adequate yearly progress in their study. They addressed this by reviewing the types of instructional practices that would most likely yield progress. The team determined that the utilization of any prior research to the effect of the limited EBP would be better utilized as a guidance tool for teachers to select and teach the skills that a child with severe disability would need. However, they go further in stating that the “limited research on academic content instruction for this population creates a challenge for practitioners seeking examples from the literature. In spite of NCLB’s numerous references to evidence-based practices, the inclusion of students with significant cognitive disabilities in expectations for progress on states’ academic content standards appears to be a values-based, rather than an evidence-based, policy” (p.161).

The team further concluded that new applications of EBP for academics are needed to be developed by or taught to educators who teach children with severe disabilities.

Once an educator has a better understanding of the limited scope of EBP, they can utilize their understandings of what effective EBP may look like in the classroom. The next issue to overcome is accessibility and legitimate practice. There are three guidelines suggested by Kretlow and Blatz (2011) which will support the educator in more effective evidence-based practice implementation. The first of these guidelines considers the educator’s accessibility to evidence-based practices.

To help overcome this problem, many educational agencies have created online databases of evaluations and recommendations of many practices educators may utilize in the special needs classroom. These databases evaluate program based on three criteria: will the programs or practices have potentially positive effects, should these practices be used with caution, or have they been evaluated as a top-rated program. These databases allow all educators of any content area the opportunity to locate resources which are evidence based. Kretlow and Blatz (2011) cite
four specific, credible websites (non-exhaustive) which provide information on a wide range of practices:


Simply finding a website with reliable information is a small step to effectively implement evidence-based practices. The next guideline educators should follow helps assist the educator with making sure the practices in place are consistent. *Fidelity, or the accuracy, exactness, or a strict adherence to detail, is key to maximizing student achievement* (Furtak et al., 2008; Kovaleski et al., 1999). Educators should practice a practice or practice in exactness. This has proven to show that practices are effective. In studies by Furtak et al. (2008), students performed poorly when teachers were inconsistent with fidelity measures utilized in evidence-based practice where picking and choosing components showed correlation with lower achievement gains. The special needs classroom may require modifications based on student need; however, it was suggested by Bursuck and Damer (2007) that only one variable be changed at a time and remain consistent. This is difficult in the realm of special needs education, where there may be more than one variable fighting for the focus of a child with special needs.
(e.g. breathing properly, interest, feeding, etc.) While Bursuck and Damer (2007) maintain that one variable should be the focus, what matters most for the child with RTT is consistency with procedures or routines (Hunter, 2007). The goal of fidelity is to ensure that educators follow procedures critical to improving student achievement while still recognizing, especially in a special needs classroom, that accommodations and minor modifications for the needs of the child which remain consistent throughout.

Educators then should focus on student progress. A validated measure of student progress is a progress-monitoring tactic known as curriculum-based monitoring (CBM) (Foegen et al., 2007; Wayman et al., 2007). This type of monitoring differs from typical class monitoring, where observed achievement assessments examine specific skills taught over time. These assessments measure the performance of a task, but not necessarily the progression of the desired goal. CBMs utilize frequent, minor assessments to track progression of a goal, checked against a student’s established learning goal, via IEP. To conduct this monitoring, an educator must:

- Define the component skills of the IEP goal or state curriculum.
- Locate existing quizzes that sample the skills.
- Establish the student's baseline level.
- Set up a line graph.
- Draw a goal line on the graph.
- Continue to instruct the student using an evidence-based practice or program
- Give students frequent CBM quizzes and graph their data.
- Use the data to determine whether or not to adjust instruction.
Evidence Based Practice for RTT

The student with RTT, much like many other students with disabilities, is in need of specialized education for the highest possibility of success. This success leads on to a higher quality of life. Teachers can benefit from learning EBP for their students with special needs, which in turn benefits the students (Torres et al., 2014).

From the review of literature, there were very few EBP found that focused specifically on educating child with RTT. The review actually shows that there are limited EBP for any child with any severe special need, let alone the specified child with RTT. However, communication practices appear to be a common theme. The following practices are what have been found to be commonly used in children who have RTT or related conditions of disorder.

Communication Coaching

Communication coaching is an avenue which researchers have attempted to positively improve communication in elementary students (Blessing, 2006). Communication coaching may include: “voice coaching (for the quality of the client's voice, regardless of purpose), speech therapy for speech problems and foreign accents, relationship enhancement for the client's personal life . . . and evaluation of and help with speech and report writing, or of speaking style” (Blessing, 2006). The two focal goals of communication coaching are the transfer of information (i.e. identify and realize a clear purpose for communication) and the achievement of change of a skill level (i.e. learn the basics of, receive feedback from, and achieve improvement of communication skills) (Blessing, 2006).

Communication coaching, that is, instructional, training, or guidance intervention designed to improve the performance or capacity of an individual in need of improved communication, may be a valuable tool to enrich communicative interactions in the classroom
for children with RTT with severe communication impairments. In a study conducted by Bartolotta and Remshifski (2012), communication coaching was attempted in an elementary classroom with children with RTT. In this study, it was suggested that communication coaching occur during mealtimes, which may divert attention from the meal itself. Mealtimes are some of the most crucial times for these children. Because of the fact that many children or girls with RTT are unable to feed themselves, issues with maintaining weight may occur (Hunter, 2007). Communication during this time may prove a diversion from essential meals for growth. However, the communication for what foods to eat or any other type of need at mealtime may determine how much or of what type nutrition the child is in need. These data create another venue for communication observation or data analysis. Teachers can benefit from this type of data to assist with communicative efforts during the school day, including mealtimes. This area needs to be investigated in this study, as it hopes to provide teachers with as many possible avenues of educational support as possible.

*Practices for Communication in Other Disabilities*

Communication is defined as “a process by which information is exchanged between individuals through a common system of symbols, signs, or behavior” (Merriam-Webster, 2008). Teachers utilize communication practices within the general education classroom to manage the classroom, to conduct lecture and response sessions, and to receive feedback from students. These everyday occurrences may not be norm for students with severe disabilities.

Communication practices need to be considered as a primary source of information delivery and retention in the special needs classroom. When considering what practices one may utilize with students with RTT, one characteristic should always be consistent—communication skills for the student with RTT can improve quality of life. Communication skills appear
automatic even in children with disabilities but can pose severe challenges to individuals suffering from motor neuron disorders (Chaudhary et al., 2017). This team explains that one practice for communication with those with disabilities may include brain–computer interface (BCI) research, which includes “invasive (implantable electrodes on or in the neocortex) and noninvasive means, including electroencephalography (EEG), functional magnetic resonance imaging (fMRI), and functional near-infrared spectroscopy (fNIRS), to record brain activity for conveying the user’s intent to devices such as simple word-processing programs” (2017, p.1). BCI represents a promising practice to establish communications with those who suffer from these disorders, such as Amyotrophic Lateral Sclerosis (ALS) patients or those with RTT. The ALS Association, (2017) on its website, www.alsa.org, defines ALS, also known as “Lou Gehrig’s Disease,” as a “progressive neurodegenerative disease that affects nerve cells in the brain and the spinal cord” (2017, para.1). In laymen’s terms, ALS translates to “no muscle nourishment” (2017, para.1). According to the definition from the association, no muscle nourishment will affect brain cells; this includes motor cells that are transmitted from the spinal cord, potentially affecting speech.

While the focus in BCI research is on the neuron disorder of paralyzed patients with ALS, children with RTT appear to also be locked in. A human being who is “locked-in” is in a state of complete paralysis except for the use of the eyes. This is another rare disorder, per the National Organization for Rare Disorders (NORD) (2017, para.1). Individuals with locked-in syndrome “cannot consciously or voluntarily chew, swallow, breathe, speak, or produce any movements other than those involving the eyes or eyelids . . . [and] despite physical paralysis, cognitive function is unaffected. Individuals with locked-in syndrome are fully alert and aware of their environment” (2017, para. 5-7). Those individuals can communicate through purposeful
movements of their eyes. While children with RTT are not completely paralyzed in the physical sense, their brains do not seem to react to stimuli normally, thus leaving the children’s eyes as one of their only communication tools.

This work with BCI science could prove potentially positive for communicative studies for RTT students. BCI therapy includes both invasive and noninvasive practices for communication in the ALS patient. The invasive practice involves the implanting of diodes in the body for response and data recording. Noninvasive practices include the use of functional magnetic resonance imaging (fMRI), and functional near-infrared spectroscopy (fNIRS), to record brain activity. A BCI session would include the selection of letters or words after the patient learns self-regulation of the brain signal or focuses his or her attention to the focus stimuli. Chaudhary et al. also reports that there was only one case report by Gallegos-Ayala et al. in which fNIRS was utilized to measure oxygenation and deoxygenation to verify a “yes/no” response. This case did report a success in one ALS patient utilizing this method to achieve choice. It was concluded that this choice was both non-spontaneous and involuntary communication, but was, however, a means for an individual who had no known communication ability to at least show the possibility of transmitting the communication of “yes” and “no” (Gallegos-Ayala, 2014).

Although the potential of this therapy is possibly invasive depending upon the practice used and requires some basic brain functions for success, this does not mean that this practice should be ignored in the case of the RTT student. There has been little discovered apart from the findings of Gallegos-Ayala; however, because the potential for a neural connection to purposeful choice of even “yes” or “no” does exist, the potential for similar technologies to make the same connections exists as well. If this therapy proves potentially successful for ALS patients, it could
also be useful for education. The role of technology, curriculum development, and common sense in educational planning plays vital roles in the education of the autism spectrum student. RTT, while still ambiguous in definition, is considered part of the autism spectrum (Hunter, 2007).

_Gaze Mapping Technology_

One area of education for children with special needs is the use of gaze mapping technology (Hetzroni et al., 2009; Urbanowicz et al., 2016). From audible reading applications to complete eye-mapping technologies, technological advances may prove effective in creating a retention curve in reading comprehension and communication via symbols in students with RTT.

In a 2009 study by Hetzroni et al., at least one technological method, known as probes, was considered to help create meaningful connections for communication. The team describes probes as the six types of meaningful referents (in this specific study - true name, storybook, song, food, verb, and communication). A multimedia program was created to facilitate the ability to match spoken words to symbols. Four symbol sets were used to assess the identification of graphic and orthographic symbols with three RTT diagnosed girls. The results of this work demonstrate a steady learning curve across symbol sets and a partial retention of knowledge. The team concluded that future research is needed, but that this type of probing leads to meaningful connections in eye gaze.

Since RTT is a relatively new discovery in genetic disorders in the last century, technology has been developed that would be more effective to reveal improvements in reading and communication (Hetzroni et al., 2009). Urbanowicz et al. (2016) researched the effects of eye gaze on young girls with RTT. One study in this review intersects with the major positions in RTT study in that almost anyone who completes an RTT study recognizes that the most direct
form of communication for all children with RTT is the eye gaze. Eye gaze is the fundamental focal point of communication for my research. Future intervention for communication can be affected by functional assessment (FA) and functional communication training (FCT) methods. Functional assessment here is defined as an objective review of an individual's communication is used to establish a baseline, to predict rehabilitation outcomes, to evaluate therapeutic interventions, and for standardizing communication for research purposes. Functional communication training methods can assist with this intervention because this type of training is a therapy that focuses, usually, on replacing difficult behavior with more appropriate communication that achieves a goal (Byiers et al., 2014).

Eye gaze devices have helped people with severe disabilities communicate (Boatman, 2013). This technology gives users control of a device such as a computer or a television monitor by use of electrodes or face recognition technology to allow the user to use the device by focusing (dwelling) their gaze on the screen at desired icons for a set duration of time. When the designated dwell time is achieved, the system clicks on the icon upon which the person’s eyes are fixated, acting as an imaginary “finger” with which to click the mouse.

These actions are dependent upon corneal-reflection tracking. Many systems use a sensor inside a computer-mounted camera, which utilizes a low-power infrared light on the cornea. Light reflects off the cornea and creates a detectable area known as the “glint spot” (p. 22). The system compares this glint spot in relevance to the position of the device. The system's camera can then predict where a user will look by continuously taking images of the eye and running the images through a processor.

Eye gaze technology is an AT that can help the child with RTT. Eye gaze may simply amount to fixating on an object, raising the question of whether individuals with RTT can use
true referential eye gaze, switching between a desired object and a partner (Bartolotta et al., 2010). Hetzroni et al. (2009) cited evidence in which it was shown that a child with RTT could be trained to fixate on a desired object. There have been other studies exploring cognitive performance through the use of advanced eye-tracking ATs; however, they have had mixed findings.

A study by Baptista et al. (2006) demonstrated that children with RTT could follow key word instructions and could recognize pictures in a category. It was found later that researchers were unable to prove the validation of the study, specifically the recognition of concepts of size, color, shape and position (de Lima Velloso et al., 2009).

One researcher has gone so far as to creating eye gaze technology specifically for the RTT student. Lariviere (2014) utilizes the eye mapping technology known as Tobii Dynavox Communicator. This research makes the claim that eye gazing technology remains the best means to build on the natural use of the eyes to socially engage and connect with others. The author indicates that technologies like Tobii Dynavox (Ruben, 2020) and the Eagle Eyes Program (Boston, 2015) are not being effectively utilized in unlocking the RTT child’s potential communication abilities. According to Lariviere, it is not only important for educators to focus on the technology itself for success, but also on the proper and applicable practices and layouts that would most benefit the RTT student (2014

*Response Latency*

Response latency (Meador et al., 2007) is known as the time span between a stimulus and the response or reaction that may or may not be caused by that stimulus. This factor should be taken into account when one considers using gaze mapping technology, in which characteristics of responses, both length and quantity of responses, are primary to the success of the technology.
There is technology readily available to test the response latency of the child with RTT. With this data, improvements in technology, curriculum, and teaching practices could help improve the reading and communication skills of the child with RTT.

The researcher believes that more effective reinforcers would be identified using response latency as a dependent measure, which means that response time may be dependent on the type of stimuli offered to a research participant. Stimuli were shown to decrease the occurrence of automatic behavior within the preference assessment; therefore, the stimuli were substitutable to the behavior. As far as direct correlation to RTT, there seems to be no connection. However, the study by Meador et al. on response latency may have profound possibilities that can alter the communicative characteristics of the child with RTT. These characteristics could lead to an improvement in communication for the disordered.

Response latency is one factor considered in the use of gaze mapping technology. Eye gaze and bodily gestures are essential communicative tools for the child with RTT. These can be measured to determine the usefulness of AT to help the child with RTT (Kaminsky, 2013).

**Differentiation**

Currently, there is much focus on the use of differentiated practices in the general and gifted education classrooms; however, there seems to be a deficit in the use of specified, differentiated instruction within the scope of the special needs, self-contained classroom (Lawrence-Brown, 2018). Furthermore, there may be differentiation based on Individualized Education Plans (IEPs), but these are mostly accommodations and modifications based on creating a least restrictive environment, not necessarily focused upon the intellectual growth of the student with special needs, especially those with RTT.
Differentiation is a sequence of common-sense decisions made by teachers with a “student-first” orientation (Tomlinson, 2001). Earl (2003) gives this definition of differentiated instruction: “Differentiation is making sure that the right students get the right learning tasks at the right time. Once you have a sense of what each student holds as ‘given’ or ‘known’ and what he or she needs in order to learn, differentiation is no longer an option; it is an obvious response” (2003, pp. 86-87). These learning tasks offer the student an opportunity to learn by utilizing a strength. For example, perhaps a student learns better through visual cues. This student may then express what would normally be written (e.g. structured writing prompts, short answer or paragraph questions, essays and traditional book reports) by creating a graphic novel, a morgue or collage, or even filming responses to show understanding. This is just one example of how a teacher may choose to differentiate a task.

Tomlinson (2001) in conjunction with the Association of Supervision and Curriculum Development (ASCD), states that “Kids of the same age aren’t all alike when it comes to learning any more than they are alike in terms of size, hobbies, personalities, likes, or dislikes” (p. 1). Many things we share make us human, but it is what differs that makes us individuals. Since students are individuals, differentiated instruction give students multiple options for taking in information and making the best choices for retention of learning (Tomlinson, 2001).

Tomlinson continues to define differentiation with the following aspects (2016):

- Ensuring an environment that actively supports students in the work of learning (mindset, connections, community),
- Absolute clarity about a powerful learning destination,
- Persistently knowing where students are in relation to the destination all along the way,
• Adjusting teaching to make sure each student arrives at the destination (and, when possible, moves beyond it),

• Effective leadership and management of flexible classroom routines.

In the differentiated classroom, commonalities are acknowledged, and the student’s differences become important elements for teachers to utilize in the best, well-rounded education of the child. In addition, Tomlinson refers to the “traditional” undifferentiated classroom as those in which the teacher continues the practice of reading the same chapters, completing the same questions, and taking the same assessments (p.1-2). What differentiated instruction is not is allowing each of a class of thirty students to read a different book, write a different paper, or take a different test. This is exhausting to the teacher and detrimental to the student. Differentiation is not a chaotic release of students with pure freedom and no classroom management. Because of simultaneous activities, teachers much exude leadership by creating purposeful student movement and allowing purposeful student talking. It does not focus on homogenous grouping; rather it focuses on the teacher’s use of flexible grouping, accommodating student strengths and weaknesses for effective education. A teacher in a differentiated class shows a blend of whole class, group, and individual instruction. These teachers are aware that “every hour of teaching, every day in the classroom, can reveal one more way to make the classroom a better match for their learners” (Tomlinson, 2001, p.5).

**Theoretical Framework**

The conceptual framework connects to the theoretical framework of disability inquiry. Disability inquiry addresses the “understanding [of] this population’s socio-cultural perspectives allowing them to take control of their lives rather than a biological understanding of the disability” (Creswell, 2014, p. 33-34). Those individuals with RTT may never understand that
they have a disability, and for the most part, are unaware than anything is different about them. This inquiry focuses more on the concept that these individuals may have the chance to make decisions for themselves rather than relying on family or physicians to all of life’s choices. Consistent use of or the creation of practices for teachers to utilize in the education of children with RTT may lead to the establishment of independence to take greater control of their own lives.

Creswell (2014) cites Mertens (2009, 2010) in his description of disability inquiry as a theoretical framework. This inquiry addresses how schools utilize inclusion in their education and primarily encompasses administrators, teachers, and parents who have children with disabilities (Mertens, 2009, 2010). In a previous study, Mertens (2003) explains how, at one point, research of disability inquiry has developed. Initially, many researchers considered the medical model of disability as only a model that demonstrated sicknesses and the role of the medical community affecting that sickness/disability. Now researchers see more of an environmental response to individuals with a disability, where the focus is on the dimension of human difference, not defect. This is referred to as a disability interpretive lens. When the researcher views these individuals with this lens, as individuals with disabilities as different based on the reflections of their research, he or she will look more closely at the type of questions asked, the labels which the researcher applies to the individuals within the study, consider more closely how the data collection will benefit the community, the appropriateness of communication methods, and how the data are reported in a way that is respectful to relationships (Creswell, 2014).

Siebers (2008) support this by offering the claim that disability studies can actually change basic assumptions about identity, ideology, language, politics, social oppression, and the
body. In a general worldview, the ideas about the capacity, limitations, experiences, or needs of individuals with a disability are socially constructed and will continue to change. Researchers could then argue that insight into the lives of the disabled and those who affect change for the disabled would offer insight to the global community.

The utilization of evidence-based practices is one of the characteristics that makes a teacher a teacher leader (Torres, 2014). The researcher determined it would be beneficial to connect the research and aforementioned theoretical framework to the Torres Implementation Process for Teacher Leaders model to demonstrate the characteristics of the teaching team within the study. This in itself is not theoretical framework, but does help the reader understand one process of how a teacher can become a teacher leader could be linked to disability inquiry, in that teacher leaders can be instrumental in redefining the parameters of this study from a focus on the medical needs of a student with RTT to one more of the human differences of a child with RTT.

Torres et al. (2014) offers educators a ten-step implementation process to help educators in the special needs classroom become more effective teacher leaders by spearheading best practices in choosing evidence-based practices, as defined below:

1. Determine Student, Environmental, and Instructor Characteristics –
   - Identify age/grade level(s) of students
   - Identify area of student need
   - Review teacher, class, and school variables
     - Teacher’s expertise/ability to implement new practices
     - Teacher’s philosophy/style and alignment to instructional methods
2. Search sources of evidence-based practice
   - Search available sources for EBPs
   - Review potential EBPs to implement

3. Select the practice to utilize
   - Cross-reference EBP to student need and instructor ability
   - Determine cost and available funding if applicable

4. Identify the essential components of the chosen practice –
   - Locate implementation fidelity checklist if available
   
   *If not available:*
   - Identify and list essential components of EBP
   - Create an implementation fidelity checklist

5. Implement the practice within a cycle of effective instruction
   - Plan a known lesson with compatible objectives
   - Follow step-by-step instructions or implementation fidelity checklist to ensure critical components are included in step-by-step lesson plan
   - Identify and create all necessary materials
Embed EBP within effective instruction, which includes:

- Pace appropriately
- Preview instruction
- Review previous instruction
- Monitor student performance
- Circulate and scan instructional environment
- Recognize appropriate behavior
- Exhibit enthusiasm
- Display awareness of what is happening
- Use wait time after questioning

6. Monitor Implementation Fidelity

- Utilize implementation fidelity checklist to self-assess implementation fidelity
- Request observation and feedback using implementation fidelity checklist

7. Progress Monitor Student Outcomes

- Select or create a progress monitoring tool.
- Consider commercially or freely available Curriculum Based Measurements (CBM)
- Consistently collect data on students’ progress
8. Adapt the Practice, If Necessary

☐ Are all student outcomes increased with the use of the EBP?

*If yes, no adaptations are necessary. If not:*

☐ Review implementation checklist and request additional observation

☐ Is implementation fidelity optimal?

*If no, try implementing again with fidelity. If yes:*

☐ Plan adaptations while maintaining integrity of the essential components

9. Make Instructional Decisions Based on Progress

☐ Consistently collect data on students’ progress

☐ Analyze data and evaluate effectiveness

10. Become a Teacher Leader and Advocate for these Practices

☐ Identify colleagues interested in implementing EBPs

☐ Celebrate EBP successes and lessons learned

☐ Share EBP implementation results and materials

☐ Create peer mentoring/coaching community

☐ Build a Community of Practice

The tenth step of implementation as presented by Torres et al. (2014) is perhaps one of the most important to this study. Once an educator begins utilizing EBP in the classroom
effectively, that educator should become a teacher leader and advocate for these practices. By sharing their experiences and newfound expertise, these teachers become advocates for their peers to begin utilizing evidence that has been tried by colleagues, producing real life, observable results, and coming from the school’s most trusted professionals – the educators themselves (Simons et al., 2003).
Chapter 3: Methodology

Worldview and Approach to Research

I approached the research from a qualitative, constructivist worldview (Creswell, 2014). I sought to identify a bounded system in action (i.e. the special needs educators who educate a child with RTT) and study how this team develops shared patterns of behavior over time; to wit, the use of practices for a student with RTT. By observation of engagement of activities, along with survey and interview, I collected data to show the development, or lack thereof, of practices to help these teachers and others in the field utilize practices in their classrooms.

Purpose of the Study

I studied the educational practices utilized in the education of a female child with RTT. The purpose behind focusing on these practices was to determine what practices the teaching team is using to educate for the child with RTT, if any, and to determine what professional development is needed for developing teacher leaders who will advocate for specialized practices which do support the education of the child with RTT.

Study Design

This study was a qualitative case study. Based on research by Robert Stake (2010), the qualitative researcher seeks to find answers to “issues that are emic (emerging from the people) rather than etic (brought by researchers)” (p.15). Stake continues his revelations by stating that “Qualitative researchers have strategic choices, learning more one way or another, toward . . . aiming at knowledge production or toward assisting practice or policy development” (p.16). Creswell (2014) echoes Stake’s emic approach in that Creswell states that qualitative researchers “use an emerging qualitative approach to inquiry, the collection of data in a natural setting sensitive to the people and places under study, and data analysis that is both inductive and
deductive and established patterns or themes” (p.44). He goes on to state that the final report provided by the qualitative researcher “includes the voices of the participants, the reflexivity of the researcher, a complex description and interpretation of the problem, and its contribution to the literature or a call for change” (p. 44).

To include the practices utilized in a case study assisted this study in its goal for educational preparation of special needs educators. There are many definitions of case study and its parameters from various researchers. The researcher of this study agreed with the definition of case study as defined by Creswell (2014): “[It is] a qualitative approach in which the investigator approaches a real life, contemporary bounded system (a case) or multiple bounded systems (cases) over time through detailed, in-depth data collection involving multiple sources of information . . .” (p. 97). The case study provides a possible means for the real-life context or specific setting to be studied (Yin, 2009). Stake (2010) cites an exception, intrinsic case studies, which do not apply to instrumental or collective case studies; in his view, this type of case study research is not a true methodology but rather more of a choice of what is to be studied within the research. However, there are other researchers who present case study as a practice of inquiry, a methodology, or a comprehensive research practice (Denzin and Lincoln, 2005; Merriam, 1998; Yin, 2009). Creswell (2014) agrees, stating that he chose to view case study as methodology, defined as “a type of design in qualitative research that may be an object of the study, as well as a product of the inquiry” (p. 97). For this study, the researcher followed a case study research design or tradition, based on Stake’s definition. By creating a narrative (qualitative research), based on the voices of the educator subjects and the researcher subject, presented about a single case (i.e. within-site study) in real life context over a period of educational time (case study), the researcher hoped to achieve an in-depth understanding of the education of students with RTT and
successfully support teachers and teacher leaders who provide high quality education to those students.

Figure 1 below shows a visual representation of this study utilizing the Hopscotch 2.0 Software (Jorrin-Abellan, 2016, 2019).

![Figure 1. Context of Case Study](image)

**Visual Representation created with Hopscotch (Jorrin-Abellan, 2016, 2019)**

**Research Questions**

The following research questions guided the study:

1. What evidence-based practices are currently being utilized by local educators to educate the student with RTT?
2. What professional development is needed for teachers and teacher leaders to become more experienced and knowledgeable about those evidence-based practices?

Participants and Study Context

Each participant and demographics are listed in Table 1: Participant Demographic Information. The names in the table are pseudonyms which were selected by the participants. Pre-requisites for participants were that (a) the participant had to be working in a public school with a special needs teaching team and (b) the participant had to be working with at least one (1) child with RTT. There was a total range of experience of between 4 and 12 years of teaching experience between all the participants. The mean of teaching years was 8.66 years, rounded to 9 years for the average. 100% of the participants responded to the sample call and 100% of the participants participated voluntarily in the study. 100% of the participants were Caucasian/White. 100% of the participants were female. All participants also reported their level of education. Two participants, or 66% of the sampled population, reported that they were in possession of a Bachelor’s. 33% of the participants reported that they had earned a Paraprofessional Certification in Special Needs Education.

<table>
<thead>
<tr>
<th>Participant</th>
<th># Years Teaching</th>
<th>Gender</th>
<th>Race</th>
<th>Degree</th>
<th>Completed Initial Interview</th>
<th>Completed Final Interview</th>
<th>Completed Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>June Lovell</td>
<td>4</td>
<td>F</td>
<td>W</td>
<td>Undergraduate</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>April Joy</td>
<td>12</td>
<td>F</td>
<td>W</td>
<td>Undergraduate</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>May Kinder</td>
<td>10</td>
<td>F</td>
<td>W</td>
<td>Paraprofessional Certification</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
This team of professionals teach a child with RTT in an elementary public school, self-contained, severe special needs classroom setting, with limited inclusion opportunities in the general education population. The classroom is part of an elementary school located in the Southeastern United States of America, in a town of rural setting of less than 3,000 people. The school houses a population of 24 students with special needs out of a total 637 students. The participants of this study educate five students with special needs. Of all of the students with special needs within the school, and specifically of the five students with special needs served by this teaching team in this particular classroom, only one has been diagnosed with RTT.

The team of educators was chosen for this case study because of this team’s work in the self-contained classroom with students with severe disabilities. Furthermore, this team was chosen because they educate a child with RTT in the same classroom as other students with various disabilities. This study focused on their experiences and reflections in a narrative research format. Through this study, other educators who may have the opportunity to educate a child with RTT may reflect upon, learn from, and employ practices which have been tried, what has worked, and what needs to be improved to help the teacher of a student with RTT help that student with RTT have a higher quality of life. The results of the findings and subsequent presentation serves as a guide to potentially lead to further research for other teachers working with students with RTT.

Having a student with RTT in the classroom was the criterion which the main participant team has met. The potential of this study to provide new practices for teachers and teacher leaders to improve the understanding and implication of teaching practices for the student with RTT could be vital to improved life quality. This study may have implications that could help families and communities communicate with other individuals with non-verbal communication.
characteristics. Participants were recruited via personal letter/email, conference calls, or face to face meeting. They were recruited based on relative kinship or professional closeness with the primary subjects. Each participant was given the option to decline participation in this study. Before research began, approval for IRB#20-424 was secured.

In terms of accessibility to research site and participants, the opportunity for research is optimum. The team of educators involved in the study work in a public-school system, which granted access and permission to conduct the case study

**Data Sources and Collection**

The primary unit of analysis for this study was triangulating data through three rounds of observations, interviews, and surveys, then analyzing the data via the inductive method of thematic analysis. Miss June Lovell, Miss April Joy, and Miss May Kinder, educators who teach a child with RTT in a public school, severe special needs classroom setting, were asked open ended questions in an interview with the researcher (Appendices B and D) that were related to the team’s use of evidence-based practices in the classroom of a child with RTT, as well as survey questions in a Daily Reflection Journal (Appendix A) and a Participant Information Survey (Appendix C) in reference to their personal philosophies of education and origins of desires to teach in special education.

The data collection began with a period of three observations in the classroom that spanned the time of three days in one school week prior to the outbreak of the COVID-19 Coronavirus and subsequent government legislation required schools to be closed to personal instruction in favor of digital learning during the pandemic. Table 1 below offers data regarding the specifics of the interviews and surveys orchestrated.
Initial interviews and surveys were completed the week prior to observation. Three observations were completed the following week. These two weeks make up the rounds of initial interviews and surveys and the rounds of observation. After the COVID 19 outbreak, the participants were willing to be interviewed via electronic format for safety. Spring Fountain Elementary and its school system had put restrictions on access to school buildings during this time. The researcher also wanted to make the participating teaching team as comfortable with the interview process during an unstable time; therefore, new interview parameters were required for online interview. A modified IRB was submitted to the researcher’s chair for approval of the modification for electronic interviews and was approved. The interviews were completed electronically via Google Meet and surveys were also completed electronically via personal email due to the outbreak of the COVID-19 Coronavirus.

Table 2: Interview Information per Participant (n=3)

<table>
<thead>
<tr>
<th>Participant</th>
<th>Interview Date</th>
<th>Interview Time</th>
<th>Interview Location (Pre-COVID)</th>
<th>Interview Date</th>
<th>Interview Time</th>
<th>*Interview Platform (Post-COVID)</th>
<th>Completed Initial Survey</th>
<th>Completed Final Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>June Lovell</td>
<td>2/24/20</td>
<td>4:30 PM</td>
<td>Lovell’s Classroom</td>
<td>4/13/20</td>
<td>3:30 PM</td>
<td>Google Meet</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>April Joy</td>
<td>2/26/20</td>
<td>4:30 PM</td>
<td>Lovell’s Classroom</td>
<td>4/15/20</td>
<td>3:45 PM</td>
<td>Google Meet</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>May Kinder</td>
<td>2/28/20</td>
<td>5:00 PM</td>
<td>Lovell’s Classroom</td>
<td>4/17/20</td>
<td>3:45 PM</td>
<td>Google Meet</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

*Previous Interview Location – Changed to Platform due to COVID 19 Outbreak.

The interviews with each of the participants were structured using the protocol in Appendices B and D so that each participant was able to provide not only their personal views of
EBP used in the classroom, but also their own personal philosophies of special education. Each participant has been given a self-chosen pseudonym for identity protection and anonymity. Records of data collection have been logged in a journal file on the researcher’s personal computer, which remains secure at his home. The researcher determined that reflective interviews and survey questions would be beneficial to the collection of data. Szymanksi determined that reflexivity has the sense of reflecting on the speaker’s narrative, expressing the interviewer’s understanding of it, which is also a way of improving trustworthiness (2001). According to Pessoa et al. (2019), reflexive interviews “allow participants to signal agreement, suggest changes, disagree about the interpretation, supplement information or clarify obscure points that emerged upon previous contacts between interviewer and interviewee.” (2019, p. 3).

Each interview document and other notes were transcribed by the researcher and peer reviewed for accuracy by the participants themselves. Transcribed documents were then hand coded by the researcher and documented via word processing software on the researcher’s personal computer that was protected by a secure password. All documents, notes, and the researcher’s personal computer were placed in a locked desk drawer in the researcher’s personal library in his home. His family nor any other individual had no opportunity for access. After the initial interviews and surveys were concluded, observations were conducted. The observations utilized the Daily Reflection Form (Appendix A) from each of the participants. All notes from observations were scanned and uploaded to the researcher’s password secured, personal computer.

In this chapter, the researcher used excerpts that were taken from interview transcripts, observation notes, daily reflections, and surveys that support the data interpretation. The data were transcribed and analyzed by the researcher.
The participants were observed for a total of 8 hours per day, or a full school day on the local school schedule, during a three-day period. During the observation time, the researcher took note to behaviors and practices that met criteria in the conceptual framework graph and the Torres Process. The researcher remained outside the interactions of teachers and students. The researcher did not interact during observation until the students were released to other activities away from the teaching team, such as physical education with the general population of students or lunch period in the cafeteria. During that time, the observer was able to clarify or ask questions about the observations. At the end of the day, the daily reflection journal was completed by the team of teachers to further authenticate the day’s activities and the effectiveness of practices utilized. Students were either sitting at tables completing a variety of activities throughout the day, either paperwork or physical activities. Other students were up and about, completing physical tasks.

The times for observations, interviews and surveys were all determined with coordination of the local school system in which the participants worked, the participants themselves, and the researcher. These times for meetings were to occur at the participant’s convenience in order to discuss the consent forms and to inquire if they were still willing to participate. Immediately following the signing of the consent form, participants each designated a day and time for the observations. The interviews and surveys were previously assigned times that were hindered by the outbreak of COVID-19 Coronavirus and, after IRB revisions were approved by the university, rescheduled to online conduction via Google Meet (for interviews), or email (for survey questions). Utilization of the observations was a supplemental data point that was used to triangulate during the data analysis process to provide additional support to validate the researcher’s findings. The interviews were audio-recorded individually using the Dragon
Anywhere: Dictate Now Application via Apple and Nuance Communications (Dragon, 2019). The recorded files were logged into a single file and password protected by the researcher. Transcripts of interviews were provided to the participants electronically to check for accuracy.

**Data Analysis**

The researcher utilized case study as the research tradition driving the study. Case study research has grown in reputation as an effective methodology to investigate and understand complex issues in real world settings (Harrison et al., 2017).

The analysis of the interviews allowed the researcher to focus the observations on data collection. The analysis of initial interviews was completed before observations began for each of the participants and the analysis of final interviews was completed after observations were completed for each of the participants. The analysis of these interviews helped to focus the observations on the teaching team and their practices they used while teaching a child with RTT.

The interviews were coded and there was analyzation for themes and or similarly identified categories. During the next step of analysis, which is identified as selective coding, the researcher foraged to find categories or themes that were becoming evident through similarities in the open coding. The researcher created families of codes to identify similarities in the data. The identification of open codes emerged in the data as a result. An apparent amount of theoretical coding emerged through the transcription process of the interviews and observations.

The researcher arranged interviews with each participant individually. Utilizing open coding organization via the inductive method of thematic analysis, the researcher was able to manually code the themes. Open coding here refers to the first step of the method of coding undertaken by a qualitative data analysis researcher. A code is created by the researcher in qualitative data analysis and this code represents or "translates" data (Vogt et al., 2014, p. 13).
In the coding, the researcher identified three themes that were referred to often during transcribed interviews, then subsequently supported by the notes and data collected by the researcher during observations. During the interview process, all three combined, the researcher was able to identify the following codes, offered here by the frequency of the coded word:

- *choice* - 23 times in the interview transcripts
- *mobility* - 16 times in the interview transcripts
- *communication* - 19 times in the interview transcripts

The conceptual framework discussed in Chapter 1 of this study justifies the reason and rigor behind conducting a study with the aim of supplementing or even replacing conventional methods of improving the educational process in the class of the child with RTT by introducing and practicing EBP for positive achievement. The researcher sought to explore what effects a change in the standards of education by the utilization of evidence based practices will have on the long-term life quality of students who cannot learn “conventionally” as well as the possible changes an educator may need to make in traditional education practices to help gain knowledge about and offer support to children with RTT. The qualitative research approach of interpretive case study allowed the researcher to fully explore this topic and create a narrative to explain the experiences of the educators in the day to day experiences with the special needs program and other educators in the public sector.

**Trustworthiness of Data**

The trustworthiness of data is vital to a successful study in qualitative research. Guba (1981) proposes four specific criteria that the qualitative researcher should consider:

1. *Credibility*: Merriam (1998) suggest that the researcher be able to show how congruent the findings of the study are with reality. The researcher should adopt appropriate
research methods, utilize triangulation, employ tactics to ensure honesty in informants, include a
description of the background, qualifications, and experience of the researcher, include a rich
description of phenomenon under scrutiny, and examine previous research to frame the study’s
findings.

2. **Transferability**: Considering that the findings of a qualitative case study are specific to
a small number of particular environments and individuals, it is difficult to broaden those
findings as conclusion which apply to larger groups. Stake (2010) suggests the use of
“Naturalistic Generalization” (p. 195). This process allows the reader to gain insight by
reflecting on the details and descriptions directly presented in case studies. The reader recognizes
similarities in case study details and find descriptions that resonate with their own experiences.
The researcher should provide background data to establish the context of the study and detailed
description of phenomenon in question to allow comparisons to be made.

3. **Dependability**: The processes within the case study should be reported in detail, to
enable a future researcher to repeat the work. For this, the researcher needs to consider
overlapping methods within the study and in-depth description for repetition.

4. **Confirmability**: The researcher is responsible to ensure findings of the study are the
result of the experiences and ideas of the informants, rather than the characteristics and
preferences of the researcher. The researcher can complete this by use of triangulation to reduce
researcher bias, the outright admission of researcher beliefs and assumptions, the creation of in-
depth methodological description to allow integrity of research results to be scrutinized, and
perhaps the use of diagrams for confirmability.

The practices that I used for trustworthiness in this study include the following:
• Personal engagement and persistent observation – builds trust with participants, deeper understanding of culture, and the checking of misinformation from any distortions that may come from the researcher (Ely et al., 1991; Merriam 1998)

• Triangulation – use of different sources and methods to provide corroborating evidence (Merriam, 1998)

• Rich, thick description – “shared characteristics” allow the reader to transfer information to other settings (Erlandson et al., 1993, p.32)

• Negative case analysis – the researcher provides a realistic assessment of patterns not compatible with codes or themes

• Peer review (debriefing) – external checks of the research process; Lincoln and Guba (1985) suggest that the peer reviewer is someone who keeps the researcher honest, asks difficult questions for the researcher to contemplate, and listens to the researcher’s feelings

Since the researcher was utilizing the narrative in the case study in this research, it is important to identify qualitative evaluation criteria.

The researcher considered utilizing the following criteria as stated by Creswell (2014):

• [The narrative] should focus on a single (or two to three) individual(s).

• [The researcher] collects stories about a significant issue related to the individual’s life.

• A chronology is developed that connects different phases or aspects of a story

• [The narrative] tells a story that reports what was said (themes), how it was said (unfolding story), and how speakers interact or perform in the narrative.

• [The researcher] reflexively brings himself into the study. (p.259)
Stake (1995) offers at least 20 criteria for assessing case study reports, criteria which include but are not limited to:

- Ease of readability
- Proper conceptual structure
- Effective use of quotations
- Sufficient raw data
- Empathy displayed for all sides

While the full “critique checklist” and criteria of Stake’s assessments of case study are extensive (p. 131), Creswell (2014) adds to this list by indicating that the case study should also have clear identifications of the cases which are studied, the difference between whether or not a case was used to understand a research issue or rather used because the case has intrinsic merit, and whether or not the researcher is reflexive or self-disclosing of the researcher’s position in the study.

**Role of the Researcher**

In reference to my personal motivations, there was one chief purpose in this case study: my daughter is afflicted with Rett Syndrome. She cannot communicate through traditional methods, such as speech or sign language. Her educators work daily to communicate lessons and personal communications to her in hopes that any retention will be successful. I hypothesized that if she were to begin recognizing letters and words, there may be connections made in reading and communication. I wanted to investigate what teachers are doing to help children like my daughter. I wanted to know what educational practices they were attempting to use with children who have RTT. However, if there were practices that were helping other students that have not yet been attempted with a child with RTT, would those practices be effective? I felt
that this case study would not be just for her benefit, but moreover for the benefit of so many other students with RTT when their teachers begin to recognize effective EBP to help those specific students. Most importantly, I felt that the development of more knowledgeable teacher leaders who advocate for their students, especially if their student has particular special needs, was paramount to the improvement of education for all students.

Professionally, I have a passion for this topic because I teach English/Language Arts, World History, and Theater/Theater Arts. I feel that EBP is essential to the well-rounded education of the well-rounded student. I feel that so many of my colleagues attempt to utilize specialized instruction as part of the general education of the general population of students; I just wonder if these colleagues are presenting EBP and are they being utilized in the special needs classroom, apart from IEPs and accommodations. I think we, as teachers, can assist students with RTT, like my daughter, by teaching to their strengths and discovering where their weaknesses may need some stability.

I feel that my topic, setting, and concepts of my research are action oriented. I want to discover what can be done not only to improve the education for children with RTT but to create teacher leaders school systems all around the world that will effectively use EBP to help children with special needs to have a greater quality of life. I am rooted in the process of the topic because I am a living experimental premise, an action research component, both as father and teacher. This topic has potential to make change through applicable practices that can be readily integrated into a school system. The topic also has potential to create a new source for teachers and teacher leaders to develop new and more focused programs of study and implementation for higher achievement within the special needs classroom. My ideas come from real life and every aspect of my belief system.
In my view, the micro-sociopolitical circumstances in which people make choices have a greater impact on the development and evolution of macro-sociopolitical issues. I believe that one must look at the personal conflicts in life, both personal and professional, before the concept of greater global issues (i.e. macro-sociopolitical issues) becomes real. For example, would I have truly considered my topic relevant for the overall benefit of students with genetic disorders, such as RTT, if I had never had a child with that specific disorder? Would I concern myself with global cultures, literature, or communication if I did not see the need for expansion of knowledge within my own classroom? I do see how others may view it the other way around, that the larger issues of the global community create our assumptions and beliefs which influence our own personal relationships, and it has merit.

The only potential bias in this study is that, personally, of the researcher. Since the researcher is a father of the elementary child with RTT, one may assume that personal bias for success would cloud judgment. Therefore, the researcher requested data for the use of all EBP utilized by educators, to include IEP information, accommodations, AT data, and anything the family or teaching team attempts to utilize for high quality education. These data are put in a permanent record for the student and should not be tampered with during the child’s education. The researcher received or observed as much original documentation as possible but would prefer to receive official facsimiles of documentation when available to help decrease the opportunity for document doctoring on the behalf of a successful result. The researcher wants to remain as professional with the elementary participant while in the field as possible.

**Ethical Principles Driving the Study**

Regardless of approach, ethical issues may surface during field research. The American Anthropological Association (1967) suggests that researchers protect the anonymity of the
informants by assigning numbers or aliases. They also suggest that the researcher conveys participation awareness, purpose of study, and avoids deception about the nature of the study. Ethical considerations which must be acknowledged in this study include:

1. Approval from university committee members and university IRB
2. Examination of professional association standards
3. Gain permission from research site and local school institution IRB
4. Disclosure of purpose of study
5. Being sensitive to the needs of the student with RTT
6. Site disruptions
7. Participation rewards
8. Avoiding siding with participants
9. Avoiding disclosing only positive results
10. Falsifying authorship, evidence, data, findings, and conclusions
11. Plagiarism
12. Use of clear, straightforward language
13. Publication of study
14. Complete proof of compliance with ethical issues and lack of conflict of interest (if applicable and if requested) (APA, 2010)

Anonymity and security are of the utmost importance when research involves a human being; it is even all the more imperative that this is done when a child is exposed to observations and research. FERPA, HIPPA, and all other national statutes of protection, as well as that provided through CITI Training and IRB standards, are completely followed with the utmost of care and professionalism. In the scope of this study, the participants are all teachers of a child
with RTT; the child herself was not a participant in this study. Any emailed or digitally shared information is archived in print format and in a removable drive during research, both of which were not only be delivered from doctoral candidate but also will be delivered directly into the hands participants at request for disposal or personal use. Until that time, research will be locked in a secure filing cabinet at the home of the researcher, of which he will solely have access. There was no open discussion with anyone about the personal data of the participants without the witnessing and explicit consent or request of these participants or the dissertation committee. All care has been taken to provide the best experience and safest use of data for all involved.
Chapter 4: Participant Portraits and Narratives

The purpose of this chapter is to offer the reader a snapshot, or a portrait, of the characteristics of the participants and their work environment. The following narratives give one a deeper insight into the day to day development of these teacher leaders as they attempt to discover what practices can best be utilized to support their student with RTT.

Pseudonyms for Anonymity

The participants were allowed to choose their own pseudonyms for this case study to protect anonymity. The lead participant of this team will be referred to as Miss June Lovell. The two other team participants will be identified as Miss April Joy and Miss May Kinder. The team works with a student with severe special needs who has been identified as a child with RTT and for anonymity will be simply referred to as “Lee.” The team works in a public-school setting, which for anonymity will be referred to as Spring Fountain Elementary School.

Participant Portraits

June Lovell

Miss June Lovell is a lead special needs teacher of a special needs teaching team in a rural public elementary school setting. She is a certified special needs educator of four years teaching students with special needs and had spent two years of student teaching students with special needs. Her special needs class is a safe haven for student with severe special needs. Miss Lovell works with a student with RTT named Lee. Lee is a ten-year old, 3rd Grade female student at Spring Fountain Elementary School, a rural, public elementary school in in the Southeast United States of America. Lee was diagnosed with Rett Syndrome when she was two years old. She lives with her mother, father, and younger brother in a rural town in Georgia. Lee is under the tutelage of Miss June Lovell and her special needs teaching team, which includes
Miss April Joy and Miss May Kinder. This is Lee’s second year of 3rd Grade. Miss Lovell specifically works in the elements of overall elementary education, communication, and physical therapy and serves as Lee’s parent liaison between Lee’s parents and Lee’s special needs school caseworker.

Her teaching team instructs a small group of five students with special needs, who have severe disabilities and range from kindergarten to fifth grade, in a self-contained, full day, 7.5-hour classroom for students with severe special needs. The children in the class have a range of needs to help cope with severe disabilities, including autism, Down syndrome, and Rett Syndrome. The youngest student is a five-year-old boy who is in kindergarten. There are two other boys, both seven years old and both in the second grade. Lee, a child with Rett Syndrome, is aged ten and is in her second year of third grade. There is another eight-year-old girl who is also in the third grade with Lee.

Miss Lovell’s teaching philosophy and goals can be summed up in one statement: She wants each and every student who passes through her classroom to fell loved, understood, and to have a higher quality of life. Along with team, Miss Lovell sees each student as a unique soul in need of guidance. From her viewpoint, education is the great equalizer, especially for students with special needs.

“I want to advocate for my students to become independent in all of their practices and activities, but I still to observe from a safe distance for success of both the educational process and the achievement of my kiddos,” said Miss Lovell, behind a wide smile. She believes that everything they do in the classroom should be purposeful and specific to the child with special needs. “Not everything works the same for each kiddo. They each their own version of our love and expertise.”
April Joy

Miss April Joy, who is a certified general education elementary educator serving in a paraprofessional role and has a total of fifteen years’ experience in the elementary education field, is a secondary member of Miss June Lovell’s teaching team. Miss Joy works with Lee during physical activity, leads hygiene exercises throughout the day, and assists with the end of the day activities for parent pickup.

Much like Miss Lovell, Miss Joy finds her joy in the success of her students. When she taught in the general education field, her viewpoint was that the academic success of all her students was paramount. Now serving as a paraprofessional for special needs students, her philosophy has changed. Miss Joy said, “These babies have a way of changing your mind about everything you know as an educator. Helping them with Miss Lovell has been one of the best experiences in my career. Seeing these children brow and succeed in what the rest of us may consider trivial exercises is thrilling and beyond fulfilling.”

May Kinder

Miss May Kinder, a secondary member of the teaching team, is a paraprofessional who has served students with special needs at Spring Fountain Elementary for twelve years. Miss Kinder assists with documentation of Lee’s progress throughout the day, acts as class liaison to the main office, and assists with speech therapy activities.

Much like her teammates, Miss Kinder holds to a philosophy that puts the children first. She said, “I have been in this profession for twelve years, and when I see those children make such strides and grow . . . it just fills my heart. To see them move on, and graduate, and then live. I had a little something to do that.”
Miss June Lovell's Classroom

Figure 2 below offers a spatial representation of Miss June Lovell’s classroom. The description of the classroom and its climate is vital to this study to help develop a well-rounded narrative for this case study. There is a valid relationship between classroom climate and students’ social, motivational, and cognitive development (Evans et al., 2007). The map of the classroom and the description of the classroom, respectively, helps serve as the setting of this case study.

When one first steps into Miss Lovell’s classroom, one can feel the excitement in the air for education. Bright colors adorn the walls, along with art projects and crafts created by the
students in the classroom. Little hands cut into various shapes for holiday celebrations are adorned with the name of every student and teacher in the room. There are posters with motivational slogans all around the room, both purchased from professional teacher supply companies and created by the individuals in the classroom. It is a most welcoming and warm environment.

Upon entering, to the left, one will see two important tools that the teaching team utilizes daily – a smart board and a step board. The smart board is one very large computer monitor that makes use of touch-screen technology. The teacher’s computer is connected to this screen for use with the Tobii Dynavox, as well as teacher presentations or reward video use. The Dynavox is an eye gaze-enabled speech generating device featuring an eye tracker. It is designed for people with conditions such as cerebral palsy, ALS, or spinal cord injury and is controlled completely with the eyes (Ruben, 2020). There is a small step board adjacent to the Dynavox system. It is a simple small bench, constructed for the use of physical therapies, (aerobics, stair stepping, etc.) to allow the students to work on stepping up and down to strengthen their legs.

Continuing to the corner of the room directly in front of the door is Miss Lovell’s desk. Here, there is an open side so that the children are aware that they are openly welcome to come see their teacher if there are any needs. The desk is adorned with personal knick-knacks and photos of family. Miss Lovell says it is to allow her students to know more about her personally and to allow her to share her life with her students.

Next to her desk, there is a window offering a view of the campus outside, allowing bright sunshine to pour into the classroom for a more natural lighting effect. Beneath that window, taking advantage of afternoon sunshine and evening cool downs, lies The Boat, an inflatable boat laden with pillows to allow students to nap if the stress of the day has become too
much. To the right of the boat is the first of two cabinets that the teachers use for storage of supplies and items used in day to day activities. These wood cabinets are parted from one another by a brightly colored rug, signifying a play area when recess is allowed inside or as a reward for a great day’s work. Another window sits next to the far-right cabinet allowing the natural sunlight to pour into that corner of the room.

In that corner, a handi-capable restroom has been constructed for the personal use of the students who may have more medical needs than the general population. In that restroom is a changing table for the students that still require the use of diapers. A small supply cabinet is found within for storage of diapers, powder, cleansing wipes, sanitizers, and soap.

Stepping outside the restroom, one will see a refrigerator to the right of the restroom door. This allows for storage of lunch items, snacks, and other foods as well as medicines that must be in the immediate area for teacher use and are allowed by the administration and the nurse to be kept in close quarters. Along this same wall is another cabinet for storage of manipulative items for education, such as toy bears for counting and felt stickers to place on the felt activity board, which is hung on the right-side corner closest to the hallway. The activity board is a neat little area where students can enjoy their educational activities that can be manipulated on the board using markers or felt. The children have a coat hanging rack and a cubby area immediately to the left of the activity board and immediately right of the classroom entrance.

The majority of the day is spent at the two tables in the center of the room. This is the location for amazing lessons, breakfast and lunch, playtime, and end of the day routines. The students are allowed to sit where they please at these locations, but of course, many of them like a specific place, so that becomes their spot. The tables are moveable, allowing the space to be
utilized in any creative fashion the teaching team can create. As far as classrooms go, this is one of the most inviting locations for a special needs classroom the researcher has ever seen. The potential for education of the social, motivational, and cognitive needs of these special needs students is evident.

**The Typical Day in Miss Lovell’s Classroom**

A normal day for this team of teachers and their students comprises of different activities to support these children. First, the team is required to report to class at 7:45 AM; their students will arrive promptly at 8 AM. When the students arrive, they all take a trip down to the cafeteria for their morning breakfast, which is served to these students after their peers in the general education classes have started their day’s work. This is done to maximize time for the students with special needs without the possibility of overly excited children not paying attention when they walk or run out of the cafeteria who may accidentally injure any of the students with special needs.

After their 30-minute breakfast period, the team takes their students back to their classroom for fundamental morning exercise and skills practice. Physical Therapy, Occupational Therapy, and Speech Therapy are first on the agenda. Those students with severe needs, such as Lee, are assisted not only by the teaching team. Along with a member of the teaching team, depending upon the day’s duties, the school nurse and the school’s physical/occupational therapist come to help assure that exercise is going smoothly. During these times, one of the three team members will accompany the support staff while the other two members of the team take this as a planning/conference opportunity. They will get approximately 30-45 minutes of preparation time. They rotate throughout the day so that each member of the team gets to plan with the two others. They review and approve the day’s activities. They also utilize the student’s
IEP and accommodation plans in conjunction with their daily journal to plan the next activities based on student need and resources available.

Next up on the agenda, the teaching team travels with their students to a Connections Activity, such as physical education, music, art, or media center time with their grade level peers. Here the students have an opportunity to create social relationships with like aged student peers, which is, according to the teaching team, vital to the mental well-being of the students with special needs. Miss Lovell says that she is especially interest in Lee’s interactions with other students.

“You can see how much happiness sparks in Lee’s eyes when she is watching other students play. When the other kids come and talk to her, she grins wider and laughs harder. I think she knows that these are her friends and that she enjoys spending time with them,” Miss Lovell says as she helps Lee walk over to a group of excited students chanting the child’s name. The child’s joy can be read in the body language and Miss Lovell adds that this is some of the best education she gets to witness each day of her career. By giving Lee this choice to play with her peers, Miss Lovell reinforces her philosophy on child-centered education. She sees Lee’s joy and notices that there is an increase in that emotion when Lee’s peers are around. This choice of being able to socialize is more important for Lee, and therefore, this small practice may be the most important of the day. Miss Lovell says that these small victories are the entire purpose for her educational career.

After activity time, it is time to hit the books, in the figurative sense. Lee is guided through several exercises that work on strengthening her communication. Lee cannot physically use her hands to indicate her needs nor can she verbally speak to her teachers. Since the teaching team has no textbooks, practices guides, or workbooks that specifically guide them on best
practices for a child with RTT, the team relies on practices they have used for other students with no vocal or physical communication. They utilize Assistive Technologies such as a smart board projection system, the Tobii Dynavox Program (Ruben, 2020), and the Eagle Eyes Program (Boston, 2015). One of the activities observed today is once where a series of targets pop up on the screen, and if the eye gaze is held long enough on a target, with the correct duration of response latency, the target beeps and the child is rewarded with a video clip of her favorite cartoon.

“Our hope here, “says Miss Kinder, “is that if she gets used to focusing on the correct targets, then we could potentially program the computer to bring forward choice options for her day to day choices, such as what to have for lunch or where she wants to go to play. It could be life changing if we can see the consistency in this program.”

Miss Lovell says, “Our teaching style is not reflective of textbook theory, especially when it comes to little Lee, because in her case, there are no known guides for educators who teach a child with RTT. We instead have to rely on what we can do for her based on her needs that we identify in other differently-abled students.” As the team worked with Lee, there were no textbooks brought out that had specific assignments for a child with RTT. There are none.

“Instead,” Miss Lovell continues, “I like to think that our teaching style combines compassion, understanding, and love. Our teaching theory is to give our students what they need, anytime they need it.”

Lunch is up next, and the teaching team gets to have their lunch with their students in the classroom. After lunch, the teaching team takes the students for about 30-45 minutes of outdoor time, such as a walk in the sun or recess time with the students’ peers. In the event that it is raining, they take the time to go into the gymnasium for their exercise.
Closer to the end of the day, it is nap time and snack time before parents come by for pick up about 30 minutes before the end of the school day, as the transfer of clothing, bags, wheelchairs, and other personal student items can take longer than the general education student traveling from the classroom to the bus. Naptime is an interesting time here in this classroom, since the teaching team allows for naps based on student needs. They do offer a twenty to thirty-minute naptime for all students before parent pick up. However, if a child is having a rough day, or if medications or other medical reasons cause a need for rest, the team adapts and allows that child all they rest he or she needs. “You may think that an administrator would disapprove of our methods of allowing a child to nap in the middle of the school day,” Miss Lovell says, cradling one of her students as she lays her in The Boat, “but since some of our administrative team have been special needs educators in the past, they understand. They are very supportive of our students needs first, everything else after.”

After the students leave, the team makes preparations for the next day by cleaning the classroom, wiping down chairs and tables, and programming the assistive technologies for the next day’s assignments. They take any remaining time to plan and verify their plans for the next day, pushing past their clock-out time of 3:45 PM if the team agrees that there is more time needed for finalizing plans. By 3:45 PM, the teaching team has completed a good day’s work in the world of special needs education and go home to a well-deserved afternoon of rest.

Observational Narratives

The first day of observation was a busy day. Breakfast was just what the kids need to start off the day, as the classroom was abuzz with giggles and smiles. The theme of the day’s lessons was based on Choice. This is a reoccurring lesson that is a primary focus at least once a week, but according to Miss Joy, “Every lesson we teach reinforces choice every day;
sometimes, we just add a little bit of deeper focus to this subject.” The teaching team feels that their lessons today, specifically for Lee, are important for her to make choices for improvement of her overall quality of life.

During an exercise of choosing food items today, Miss Lovell chose uncommon foods which Lee may not normally have at school, such as cucumbers, peppers, and blueberries. Cards with pictures indicating each food were held up and when Lee was asked to choose blueberry, not only did she gaze at the correct answer indicating the correct choice, but there where instances that Lee reached to grab the card or hit it with her hand. Miss Lovell said this is evidence of progress based on Lee’s growth from the beginning of the school year.

Miss Joy assisted Lee with the Tobii Dynavox system to reinforce this concept of choice. This is the assistive technology that allows the teacher to establish milestones and goals for a student to accomplish in a given time period. When the student’s gaze correctly matches with a desired answer, choice, or outcome, then the child is rewarded with three to five minutes of their favorite characters. Miss Joy looked directly into Lee’s eyes and said, “Okay, pumpkin, today we are going to decide what color you want to work on locating on the screen. Do you want to look for purple or orange?” Lee giggled a bit and kept her eyes focused on Miss Joy while Miss Joy calmly restated the question again and led Lee to the computer screen. On the screen, there were two rectangles, both filled with color based on the choice options. Miss Lovell asked if today was the day that Lee went with something besides purple. Before the question was finished, the choice was already made. Miss Joy giggled and announced proudly that Lee has, once again, decided to look for purple objects! The next fifteen minutes, Miss Joy documented all of the choices made in what she called a “Daily Choice Journal” which she typed into her laptop. Lee made eight choices of objects that were purple out of the twelve items in the lesson.
Each time she chose the purple object, a quick clip of her favorite cartoon would play as a reward. Miss Joy reminds Lee as the lesson finished that the computer is there to help her communicate her needs to her teachers and her parents every day. The more she practices, the more efficiently she will be able to tell people her needs or wants for the day, hopefully making her more self-sufficient with her choices virtually, since though she physically will not be able to speak her mind.

The teaching team utilized this data at lunchtime, when Miss Kinder took Lee to choose what she would have for lunch that day. Lee is actually fed via a feeding tube with formula due to some nutritional deficiencies that are part of her condition, but Miss Kinder has developed a choosing platform to reinforce Lee’s choices. Lee will receive her formula per her doctor’s guidelines, but Lee does get to choose her snacks that coincide with the formula to help her practice and enjoy the oral introduction of food. Lee’s choices today were wither goldfish shaped crackers in a single serving bag or potato wedges prepared by Lee’s mother. A small piece of purple construction paper was placed in front of both choices so that Lee could make the connection to the day’s choice color. After a minute or so of gazing at the options, Miss Kinder removed the paper. Lee looked a little longer at the choices before smacking a flat-palmed smack on top of the potato wedges. Miss Kinder continued with lunch, offering Lee her choice of snack, while miss Lovell’ documented her choice for the day in a dietary log they keep for her.

Miss Lovell explained this day was a particularly good day for Lee. She was attentive and participated eagerly. There are days that are hindered by medical conditions and on those days, Lee simply naps in what is lovingly referred to as “The Boat,” an inflatable boat laden with soft pillows for the comfort of the child with RTT if she chooses to nap. This day, however, the only hindrance was the distraction of another child in the classroom who became particularly
upset. Miss Joy thinks that Lee is a very intuitive child that can feel when other students are stressed. When this stress occurs, the team tries to remove the stressor or Lee herself from the stressor to maintain routine and learning. Miss Joy said that if there were professional learning based on improving coping mechanisms for stressors for the child with RTT, there would be a grand improvement in Lee’s overall education. For now, Miss Joy was able to relocate the distressed child and Lee’s attention was refocused.

On the second day of observation, the theme of the day’s lessons was Mobility. The teaching team spent over a year looking for specific practices for mobility training for a student with RTT. Almost everything they found coincided with mobility training for cerebral palsy instead of RTT. They consulted the Rett Syndrome Handbook (Hunter, 2007) to find any further specified practices. Miss Lovell even found a study on RTT services, Special Education Supports and Services for Rett Syndrome (Quest et al., 2014) that she had hoped to use as a jumping point for practices to help Lee. She ultimately decided that it would not help the team since the team in this study was focused on communication and concluded that there is a greater need for high-quality speech therapy and an emphasis on assistive communication support (Quest et al., 2014). Miss Lovell wishes there were more details in the research as to what mobility practices worked best for the child with RTT with a focus in physical education. Until then, the teaching team would focus these lessons on educational practices for students with cerebral palsy, guided of course by the physical and occupational therapists in the school.

Miss Joy noticed that Lee began the day a little tired from the night before. When noticing this, Miss Joy took the initiative to contact the parents to request information about the night before, whether Lee got enough sleep, how the morning routine went, etc. She documented all of this information in a personal log she keeps for Lee’s progress. She reinforced to the
parents in a most professional manner that the morning routine can be very important for Lee’s continued growth, not just in mobility, but in all aspects of her education. It is obvious that the parents and Miss Joy have a good relationship as evidenced by the positive reactions of the parent and teacher interaction. Miss Joy continued to inform the teaching team that Lee had a seizure that morning on the way to school. This was the cause for lethargy. Miss Lovell said that when this lethargy is present, regression for most activities for Lee is increased. By plotting the amount of times Lee sleeps in the day, Miss Lovell can see that there is an increase of lethargy. This can cause a regression in skills mastered if not acted upon in a quick and appropriate manner. The teaching team will usually adapt lessons to suit the child when these days happen.

When Lee is in a good mood, the teaching team tries to capitalize on that by offering as many activities possible before lethargy sets in. If that does happen, the team usually allows Lee to nap; however, this causes disruption in the routine. Routine is probably one of the most important factors in Lee’s education, so adaptations must occur to help maintain as much routine as possible.

The team has seen that there is improvement and retention when Lee is rested. Miss Joy took Lee to have a nap in The Boat. Breakfast was served through Lee’s feeding tube while she slept, so this information was logged in the Miss Joy’s dietary log. After approximately 45 minutes of napping, Miss Joy saw that Lee was alert and happy. Capitalizing on this time, Miss Joy took the opportunity to teach the morning lesson on mobility.

Miss Joy took Lee to the diaper-changing table. One of the lessons the team utilizes to teach mobility is that Lee will take what she has learned during physical and occupational therapy and help to hoist herself up on the changing table. Miss Joy simply held Lee’s hands and
placed them on the table. She then helped to guide Lee onto the first small step of the table with her right foot up on the bench. Once this occurs, Lee is supposed to move her left side of the body up onto the table without any more assistance. Lee grinned and laughed, Miss Joy reciprocated the laughter and encouraged her, and in the matter of around one minute, Lee was on the changing table, sitting proudly. Miss Joy reinforced Lee’s behavior with clapping and praise. Miss Lovell said, “This is not only time we have been successful in this, but our notes in our log show that she has been working on this specific skill now for over a year. Consistent exercise and practice have gotten us to this point, and we could not be any prouder!”

Apprently, mobility practice has the same effect on Lee as a seizure, because right before it was time for lunch, Lee was placed in The Boat once again for another nap. Miss Lovell says on days like this, they just help her as much as they can to get through the day with as much work as they can comfortably accomplish. After the nap, roughly 30 minutes, Miss Kinder took Hannah down do the therapy room for work with the school’s physical therapist. Miss Kinder helped Lee in an activity they called “tall kneeling,” in which Lee would be placed on her knees, her spine supported straight up by Miss Kinder, and the physical therapist would intentionally move Lee’s legs up and down to mimic the movement of rising from the kneeling position. This is what Miss kinder called today’s Hand of Hand Prompting lesson, even though it was technically “hand over leg”. Unfortunately, Lee was not very successful in today’s lesson, falling once and verbally showing her distaste for the activity by crying out in either anger or pain; Miss Kinder was not sure.

Since mobility is primarily a practice for the body, there was very little use of the Dynavox technology today. They did allow Lee to choose a video to watch to help calm her down after her therapy session, reinforcing the lesson of choice that is a continuing focus for
Lee’s education. This was administered by Miss Lovell, who said that on days like today, two of the team members will help with Lee since she is the most severely physically disabled in the class. Since Miss Joy and Miss Kinder had spent the majority of the day with Lee, Miss Lovell focused her attention on the remaining students in the classroom, asking for support only when absolutely needed. For her part today, she documented the choices Lee made utilizing the assistive technology for her videos. This documentation was sent to Lee’s parents before they arrived to pick her up so that they would be prepared to continue any lessons they could at home with their own Dynavox and mobility practices.

March 6, 2020 was the third day of observation. The theme of the day’s lessons was Communication. The team has decided that the most improved and best form for communication for Lee at this time with the resources involved is the use of the Dynavox system. In today’s activity, Lee was to choose what she wanted for her lunch snack, both reinforcing the lesson on choice from earlier in the week as well as communicating it to the teachers, but according to Miss Kinder, it did not occur normally. Lee had already accomplished proper choices in the color choice activity, the enrichment activity based on Miss Lovell’s choice activity previously in the week. Miss Kinder observed that while the videos continue per the normal rate expected, roughly five to ten minutes interrupted with questions and choices, Lee took one break opportunity to move her eye gaze to the food menu and chose chicken tenders for her solid food snack. This was unexpected, because Miss Kinder had not helped Lee navigate to this section yet, as lunchtime was still about an hour away. This was a genuine spontaneous request for food! Since Lee is nonverbal, any communication on this device helps the educator’s teacher her how to determine the day.
Lee did not accomplish a later in the day goal of turning her head or body to someone who was speaking. It was as simple as Miss Lovell standing in another part of the room as calling out to Lee for her attention. Lee continued to be fixated on another student in the classroom who was playing with some blocks. When the communication aspect was not successful, Miss Lovell adapted to an opportunity for acquiring choice skills instead. She had Lee begin tracking a colorful, music playing object. When this was more successful, the team determined to move forward with a lesson on helping Lee to choose from general items to specific items, agreeing to try again later in the afternoon.

Miss Lovell had Lee attempt two other forms of communication later in the day but combined them into one. There is a large button that is imprinted with the picture of a popular cartoon mouse that, when pressed, will sing the theme song to Lee’s favorite cartoon show. Lee knows where this button is located (on a small table next to Miss Lovell’s desk) and will walk over to the button to indicate when she wants to watch a video clip. Lee will stand at the button and Miss Lovell will encourage Lee to press the button but will not reward her with the video until the button is pressed. This is a practice that the team has followed for the entirety of this year. However, Miss Lovell wanted to add a second element to the practice which involved some occupational therapy.

Lee also has to practice the practicality of signing documents in her future. This is one of the goals found in Lee’s IEP. Since Lee had limited use of her hands, she can grab larger objects, but may never be able to utilize a pen. “Since we have been unsuccessful at getting Lee to utilize a pen, we have modified her signature as a rubber stamp which is easier for her to grab and use,” explained Miss Lovell as she prepped the stamp. She then showed Lee a piece of paper with a statement affirming that Lee would like to watch a video. Miss Lovell placed the stamp in
Lee’s hand and utilized Hand Over Hand Prompting to help Lee stamp her name on the line. The thought process behind this activity is that when Lee sees the line, she will take the stamp and stamp her name to her future IEPs, report cards, and in the future, official government documents for her livelihood. Unfortunately, today, Lee was not as successful at stamping after the initial practice. The reinforcement of no video until a stamp was placed upset Lee for a few moments, but when her parents arrived to pick her up for a doctor’s appointment, Lee perked up and excitedly neglected all other aspects of the classroom.

This was a short day for Lee due to the appointment, so after her departure, the team had a few moments during recess to discuss Lee’s progress while on the afternoon walk with their other students. The team has a collective wish of overall improvement for every student with which they come in contact. Miss Kinder believes that specific and purposeful discussion about events that interrupt the day, such as school photos, assemblies, fire drills, and even the unfortunate absence due to appointments would help improve the students’ understanding of their routine. When the routine is shaken, the day can sometimes become a loss. Even though Lee is nonverbal, the teaching team believes that she absorbs and understands more than she can tell them, and they imagine she would tell them that she is learning well. When asked if they feel that Lee herself would like more specialized instruction due to her disability, they unanimously believed that anytime a child gets special attention, they see growth.
Chapter 5: Findings

The purpose of this chapter is to exhibit the results of the qualitative case study that was conducted to answer the following research questions:

1. What evidence-based practices, if any, are currently being utilized by local educators to educate a student with RTT?

2. What professional development is needed for teachers and teacher leaders to become more experienced and knowledgeable about those evidence-based practices to support the child with RTT?

This chapter includes references to methods that were utilized to analyze the data which are aligned with the method of case study research in Chapter 3. This chapter also includes references to data from the Torres Implementation Process for Effective Teacher Leaders (Torres et al., 2014), to wit, what effective teaching techniques work well within the parameters of this case study. In addition, the researcher sought a deeper understanding of the teaching techniques that are more effective for teachers to utilize in the education of the student with RTT. The data collection process included participant observations, interviews, and surveys to triangulate data. The data that were gathered provided additional meaning and context to the research questions that guided the study. The data were analyzed at the ensuing levels (a) open coding, (b) theoretical framework, and (c) participant’s responses.

Findings

Research Question 1

What evidence-based practices, if any, are currently being utilized by local educators to educate a student with RTT?
Miss Lovell and her teaching team focused on three evidence-based practices in their educational practices to teach Lee. They primarily use *Tobii Dynavox Assistive Technology*, an eye gaze-enabled, speech-generating device featuring an eye tracker (Ruben, 2020). They also heavily rely on *Hand Over Hand Prompting*, which requires a teacher to physically manipulate a child's body as a cueing system for muscle memory and motor function (Webster, 2019). The team also utilizes practices within *Occupational and Physical Therapy*, therapies which focus on body mechanics and strength as well as purposeful movement of the body for quality of life improvement (Dobson, 2019).

**Research Data in Relation to Practices Utilized in Miss Lovell’s Classroom**

The teaching team attempts several practices daily to help educate the child with RTT. In the legend of Figures 4, 5 and 6, respectively, the data has been listed as the percentages of the frequency of practices. Each number represents the Interactions Observed (IO).

These three focus areas connect to the teaching team’s goal as referenced. Across these focus areas, there were three primary practices discovered in the data:

1. **Tobii Dynavox Assistive Technology** – This is an eye gaze-enabled, speech-generating device featuring an eye tracker. It is designed for people with conditions such as cerebral palsy, ALS, or spinal cord injury and is controlled completely with the eyes (Ruben, 2020).

2. **Hand Over Hand Prompting** - Hand over hand prompting requires a teacher to physically manipulate a child's body. Also known as "full physical prompting," it often involves performing an activity with a student. To use this cueing system, the person teaching a skill places their hand over a student's hand and directs the child's hand with their own (Webster, 2019).
3. Occupational and Physical Therapy

   a. Physical Therapy – Intense focus on body mechanics and how different body systems are impacted by motion, positioning, and exercise. Interventions are geared toward improving strength, balance, and range of motion to facilitate body movement. Treatment in this practice often targets the spine and lower extremities.

   b. Occupational Therapy – Primary focus is to help patients engage in activities in areas such as self-care, homemaking, leisure, play, and socialization. Interventions in this practice are geared toward physical exercise, yes, but may also focus on areas such as problem solving, memory, organization, routines, social skills, and using community resources.

Both disciplines can address developing, improving, and preventing deterioration of a patient’s physical function and ability to carry out daily living tasks, both strive to optimize a patient’s independence and quality of life, and both can work with patients across a lifespan (Dobson, 2019).

The following three themes emerged from the data: choice, mobility, and communication. The teachers in this classroom seem to have these three areas of focus when it comes to the education of Students with RTT. Each area has been defined within the context of the teaching team and their day-to-day experiences with Lee.

Choice – The teaching team felt it was necessary for Lee to be able to make choices for herself when able rather than depending upon teachers or parents to choose for her. The evidence-based
practice observed that exemplified this theme was the use of the Tobii Dynavox Assistive Technology.

Figure 3 shows the percentages of common practices that team has utilized in the general education of all their special needs students as a whole. From these practices, the special needs team determines what practices, if any are useful for the educator to teach their student with RTT. The graph below shows several specific practices that the team uses to help Lee with her first Focus Area – Choice. The team believes that Lee should become more independent by making her own choices. A student with RTT may have to depend on her caregivers for a majority of her life (Hunter, 2007), and the choices that caretakers may make could differ from the desires and wants that Lee may have. Choice has become a major focus on Lee’s IEP, and 504 Accommodations and the education team has determined that in the matter of choice, the most useful practice for Lee is the use of assistive technology, specifically the Tobii Dynavox Assistive Technology (Ruben, 2020). Approximately 26% of Lee’s choice lessons are presented via this technology. To supplement this, the teachers utilized the following practices an equal amount of approximately 11% of time to dedicated sections of activities throughout the day:

- Physical Therapy
- Occupational Therapy
- Speech Therapy
- Auditory Assistive Technology
- Small Group Work
- Partner Work

The portrait narratives in Chapter 4 offer interview and observational data of the theme of Choice.
Mobility – Lee’s disability leaves her with very little advanced motor skills, such as the ability to jump, run, or grab with her hands. The team is currently focusing on her ability to walk more steadily, her ability to balance, and the strengthening of her leg muscles.

Figure 4 shows the percentages of common practices that team has utilized in the general education of all their special needs students as a whole. From these practices, the special needs team determines what practices, if any are useful for the educator to teach their student with RTT. The graph below shows several specific practices that the team uses to help Lee with her second Focus Area – Mobility. A student with RTT has limited mobility due to scoliosis, muscular atrophy, and loss of complex motor functions, such as walking and grasping (Hunter, 2007). Mobility has become a major focus on Lee’s IEP, and 504 Accommodations and the education team has determined that in the matter of mobility, the most useful practice for Lee is a combination of physical and occupational therapy paired with Hand Over Hand manipulation of
items. 75% of Lee’s mobility lessons are presented in the aspect of physical therapy-based activities. To supplement this, the teachers utilized the following practices an equal amount of approximately 11% of time to dedicated sections of activities throughout the day:

- Small Group Work
- Partner Work

Inclusion in the regular education classroom comprises approximately 4% of her day. Inclusion with Lee’s peers offers Lee an opportunity to practice her walking and object manipulation in real life situations with other life participants.

The portrait narratives in Chapter 4 offer interview and observational data of the theme of Mobility.

**Figure 4. Practices Utilized Based on Themes: Mobility**
Communication – A student with RTT generally loses the ability to create complex verbal commands or conversations, even to the point of complete verbal loss (Hunter, 2007). However, in Lee’s case, she can still grunt, cry, and laugh. Paired with the eye gaze technology utilized for her lessons on Choice, the teaching team believes that Lee can improve her communication for an improved livelihood, even though she has no verbal acquisition.

Figure 5 shows the percentages of common practices that team has utilized in the general education of all their special needs students as a whole. From these practices, the special needs team determines what practices, if any are useful for the educator to teach their student with RTT. Communication has become a major focus on Lee’s IEP and 504 Accommodations and the education team has determined that in the matter of Communication, the most useful practice for Lee is the use of assistive technology, specifically the Tobii Dynavox Assistive Technology. Approximately 21% of Lee’s communication lessons are presented via this technology. Likewise, assistive technology is paired with speech therapy, also comprising approximately 21% of the day’s lessons and focus. Hand Over Hand manipulation is utilized approximately 12% of the time, connecting communication to choice in that Lee’s choices communicates her wants and desires. To supplement this, the teachers utilized the following practices an equal amount of approximately 9% of time to dedicated sections of activities throughout the day:

- Physical Therapy
- Occupational Therapy
- Small Group Work
- Partner Work

Inclusion in the regular education classroom comprises approximately 6% of her day in the matter of Communication. Inclusion with Lee’s peers offers Lee an opportunity to practice
her listening and verbal communications learned from time spent with assistive technologies in real life situations with other life participants. Along with this, Lee’s communication practice is supplemented with Audio Assistive Technology via video and audio presentations on Tobii Dynavox software, which not only acts as a control for her eye gaze measurements, but also stimulates auditory communication.

The portrait narratives in Chapter 4 offer interview and observational data of the theme of Communication.

Figure 5. Practices Utilized Based on Themes: Communication
Support from Interviews and Observational Narratives (Torres Process Steps 3-9)

From an interview with Miss Lovell:

“Lee has been a part of our family now for about three years,” said Miss Lovell, “and in that time, we have learned all we could from her parents. We get a little from the textbook they provided, and some from a few online hits. However, this isn’t enough.”

In terms of understanding more about RTT, the teaching team has learned quite a bit over the years. In reference to the data in the Chapter 4 narratives, Lee’s choices are more important than just choosing food for the teaching team. They see her choices as their only other window to learn more about Rett Syndrome. In the narrative, there was observations about Lee’s feeding tube. The teaching team is not permitted to place this tube during feeds; it must be done by the school nurse. However, Miss Joy would like to learn about the process to become certified to help with feeding tubes, at least for Lee:

“It would be easier if we didn’t have to wait on the nurse or even call in Lee’s Mom or Dad to place the tube properly. Learning more about the world of RTT and the specifics of how to help the child would be immensely beneficial for us to help Lee with her educational growth.”

Miss Joy also said “Lee is a very intuitive child that can feel when other students are stressed.” Being made aware of the stressors for a child with RTT via professional learning workshops with medical professionals would be beneficial. Miss Lovell said that the teaching team spent over a year looking for specific practices for mobility training for a student with RTT. Almost everything they found coincided with mobility training for cerebral palsy instead of RTT. They consulted *The Rett Syndrome Handbook* (Hunter, 2007) to find any further specified practices. Miss Lovell even found a study on RTT services, *Special Education Supports and Services for Rett Syndrome* (Quest et al., 2014) that she had hoped to use as a jumping point for
practices to help Lee. She ultimately decided that it would not help the team since the team in this study was focused on communication and concluded that there is a greater need for high-quality speech therapy and an emphasis on assistive communication support (Quest et al., 2014). Miss Lovell wishes there were more details in the research as to what mobility practices worked best for the child with RTT with a focus in physical education. Until then, the teaching team would focus these lessons on educational practices for students with cerebral palsy, guided of course by the physical and occupational therapists in the school.

The team has a collective wish of overall improvement for every student with which they come in contact. Miss Kinder believes that specific and purposeful discussion about events that interrupt the day, such as school photos, assemblies, fire drills, and even the unfortunate absence due to appointments would help improve the students’ understanding of their routine. When the routine is shaken, the day can sometimes become a loss.

From Miss Kinder: “If the administration could see this from our perspective, there may be some changes. Professional development on their part to understand the details of our student with RTT, or any of our students with special needs for that matter, would be a true path of growth and understanding for us all.”

Even though Lee is nonverbal, the teaching team believes that she absorbs and understands more than she can tell them.

From an interview with Miss Lovell: “I imagine, or at least hope (*grins*), that Lee would tell us that she is learning well. I do feel, however, that is Lee herself could speak to me, she would ask for more specialized instruction due to her disability. I mean, anytime a child gets one on one attention, teacher’s usually see growth.”
Research Question 2

What professional development is needed for teachers and teacher leaders to become more experienced and knowledgeable about those evidence-based practices to support the child with RTT?

Based on the data within this study, I identified four elements of professional development which should be considered for the improvement of teacher leadership within this specific teaching team. Currently, the teaching team is only aware of information about RTT from the parents and various websites online. A specified professional learning opportunity or community developed by teacher elders who teach a student with RTT, special needs educational specialists, and authoritative RTT medical personnel would be the first great step in understand more about students with RTT.

According to Miss Lovell, “Until we truly get to know our students, we can’t teach them much. It is vital for us as teachers to know our students as well as we can in order to tailor their education for their individual success. Lee is not different than any other student; a bit more special, yes, but she still deserves focus and love. For this reason, we need to know more about the practices involved with teaching children with RTT. Depending on the results of different practices, we could potentially help our staff and others like us around the world better teacher’s for children like Lee; more importantly for me and my team, we could make some great change in this little girl’s life.”

The team would then hope to discover resources in the world that either already contain or would help to develop educational practices specific to the student with RTT. Currently, the teaching team has not discovered any commercially available sources that are specific to this disability from leading material providers. The team stated in the interviews that they were really
only able to search for practices via the Internet, in that there are not any readily available commercial aids that are specific to the child with RTT. Most of what is discovered online in reference to RTT is primarily medical information, with little to no reference to educational materials or practices, save what they have found in the Rett Syndrome Handbook (Hunter, 2007). Furthermore, the team has not yet found an applicable professional development opportunity, neither locally nor virtually, that is specific to educating the child with RTT. One would suppose this would apply to professional learning involving information about Rett Syndrome itself, but this is not what the teaching team thinks.

“We need professional development on both Rett Syndrome as a disability to know Lee as well as we can, but we also need additional professional learning on the practices that other teachers are using to teach children with RTT as well. If someone were to develop training for us teachers that have a student with RTT, I feel that our teaching team would not only be able help Lee now as an elementary student, but we could then educate her future educators on the best practices to help her develop through high school. The programs are just not there, or at least are not accessible to us locally,” says Miss Kinder. In consideration of whether or not there would be support from the administration in the continued professional development of educators who teach children with RTT, and as far as this teaching team is concerned, there is no question.

Miss Lovell has had this conversation with her teaching team before this study: “We would receive not only full support from our administrative teams, but also that those teams would actively help in the search and discovery of professional development that fits our needs. The problem remains the same for administration, however, that remains for us – there is a severe lack of information for teachers and administration alike when it comes to specified RTT
education.” The research suggests that administration would also benefit from first learning more about the medical functionality and lifestyle of students with RTT and secondly, the specific educational practices that focus on the child with RTT.

**Discussion of Findings**

Based on the study, I did not find any EBP that differed from the practices already found in the review of literature. Based on the research, EBP seem to connect to child needs and teacher philosophy. There are limited resources available to these teachers. The teacher’s philosophies are driving any practice utilization in the classroom. This all connects to choice, mobility, and communication, but is also in relationships to the child’s needs, such as exercise or a child’s need of a nap. I did not observe the teachers doing anything new or utilizing any specific practices that were tailored for the child with RTT. However, what it seems I did find is that what they do use is connected deeply to their need for their children to live an abundant and self-sufficient life.

**Teaching Philosophy of the Team and Alignment with EBP Promoted in Teaching Lee**

The research for this case study provided detailed information into a snapshot in the daily routine and practices utilized when educating a student with RTT in the public elementary special needs setting. The poignancy of observation and real life testimony by educators who have direct access, or lack thereof, to materials and evidence based practices to teach the child with RTT are invaluable to the evolution and promotion of teaching practices for these educators, potentially driving a movement to increased focus on education of all children with special needs based on their specific disability. In this analysis, it has been made clear that these educators have the potential to become teacher leaders in their field and that they are already successful in their endeavors to educate a child with a rare disorder. It is also evident that there
are no specified materials or practices that are determined for the student with RTT alone and these educators are attempting to build a toolbox of resources from other sources that have been used in special needs classrooms. Educational resource providers, school system professionals, and local administration have a responsibility to support the teacher of a child with RTT so that these teacher leaders can not only excel in their own field but can also be role models to follow and future educators to give specialized attention to any student with a disability.

From Miss Lovell: “Our practices are rooted in our need for our students to live happy and healthy lives. We work with the severely disabled. Other teachers get to see the success of a child that passes a hard test, or finally grasps a concept with that wonderful ‘Aha!’ moment. We, on the other hand, see our fair share of pain and suffering in the eyes of our kiddos. However, one thing our colleagues never receive that we will is that look of love that we receive when we talk to our kiddos as human beings, rather than someone broken and unloved. My fear is that there are children being treated like that in the world. Well, not here. Not with us. Our success is their brief moments of happiness and, occasionally, a breakthrough in their traditional education. But remember, that’s not always the point; not even for the general education population of this school.”

**Connection of Evidence-Based Practices to Torres’s Model**

There is a special note to take in the data regarding the Torres Process, Step 2. In relationship to Research Question 1, there are no RTT specific evidence-based practice sources available to teachers. There is the handbook, *The Rett Syndrome Handbook* (Hunter, 2007), for parents and families of a child with RTT, that has a chapter dedicated to educational practices, but this was deemed by the teaching team as not sufficient for the creation of RTT specific tools, such as RTT educational practices, worksheets, or computer programs. Rather, they found the
text was more beneficial in the medical educational of the teaching team so that the team could modify their existing practices for students with autism, cerebral palsy, and Down syndrome. Miss Joy says, “We utilize texts and sources from the majority of leading educational communities, such as Pearson, Houghton Mifflin Harcourt, and Glencoe. We also utilize practices from other special needs teams in our region via Pioneer RESA and other nationwide studies on evidence-based practices for the special needs, elementary classroom. However, we haven’t seen the first guide for educators that specifically covers RTT. We create what is needed from preexisting sources for other disabilities.”

**Torres Process Step 10 - Become a Teacher Leader and Advocate for these Practices**

Step 10 of the Torres Process is an excellent support for the answers to Research Question 2 as it promotes advocacy for educators to become teacher leaders in their field to advocate for better practices in the classroom (Torres et al., 2014).

There is a clear issue with the initial training this teaching team received: special educators need to be made aware of RTT and the how to locate or develop resources to help children with this rare disorder. The teaching team admits that they were never aware of the disability known as Rett Syndrome before Lee came to Spring Fountain Elementary. The team is aware that there is a Rett Syndrome Handbook (Hunter, 2007) and they are aware of the Rett Syndrome Organization website (Kaminsky, 2013) that is currently the most up to date with information about the disability. However, they feel that researching a website and reading a manual on the disability is enough make them leaders in their field. There are seminars and conferences locally that help educate special needs educators about autism or cerebral palsy, but the closest center for Rett Syndrome research, whose purpose is more research focused than educator focused, is in Alabama, a full state away from this school. From what they have
learned on the website and through the handbook, they have a base understanding of Lee, but they would truly love to see more information from a joint venture of the medical and educational worlds to educate teachers about RTT itself so that practices and guides could be presented to specified education.

The team feels that there is a desperate and immediate need for resources specific to the needs of the child with RTT. This could be in the form of professional textbooks from well-known sources (i.e. Pearson, Glencoe, etc.), workbooks and workshops, or even electronic resources via the Internet or specified software. Mostly, the team is requesting, at the very least, a collection of practices or practice guide activities, lessons, and practices specified to teaching the child with RTT. The team is aware that there is a Rett Syndrome Handbook (Hunter, 2007). However, this text is not a technical text with the purpose of educating the teacher on how to teach the child with RTT, but instead is a comprehensive worldwide data compendium for parents, families, and doctors who are involved in the life of a child with RTT. There is a small section in this text on Education of the Child with RTT, but it is not exhaustive.

The teaching team is unanimous in that they believe there are not many opportunities available for teachers who teach a child with RTT to professionally learn specific and purposeful practices tailored to only the child with RTT. Many of the practices utilized are generic enough for use with all students with disabilities, regardless of the specific disability. They are deeply saddened by this and struggle with it because they genuinely care for each of their children specifically and uniquely. They want Lee to receive exactly what she needs, not just what they are offering her, hoping that it will continue to affect her positively. Most of the practices the team utilizes are generic practices modified by the team with their own creativity. This is driven by the team’s passion for their students.
When the team approaches the administration with issues specific to Lee or RTT, the administration is very supportive of Lee’s continued education and any practices that the team uses within the scope of the law and the Professional Standards Commission. They are supportive of all aspects of the teaching team and their desire to become teacher leaders in their field. However, just as it is with the teaching team, the administration is ill informed about RTT and the specific practices that could be affective in the classroom. The administration generally offers practices that are either recycled versions of practices which are already utilized, or they are recycled versions of practices that the team has created themselves. It is not a matter of the district saying no to specific professional learning for teachers teaching children with RTT; instead, it is a matter of the lack of professional development on the local, district, state, and national level. The professional learning utilized is at the request of the teaching team, and as long as it is justified with evidence and data, the school board supports the team with 100% of their endeavors as well as supplements and stipend for improved professional growth.

**More Effective Teacher Leaders Who Teach the Student with RTT**

In Chapter 4 of this study, the researcher was able to connect the results of the research to both disability inquiry as stated in the review of literature as well as the themes of the *Torres Implementation Process for Teacher Leaders*. In Chapter 2 of this study, the Review of Literature, Creswell (2014) cites Mertens (2009, 2010) in his description of disability inquiry as a theoretical framework. This inquiry addresses how schools utilize inclusion in their education and primarily encompasses administrators, teachers, and parents who have children with disabilities (Mertens, 2009, 2010). This study shows that for the improved inclusion of a child with RTT in a public elementary school, the administration and educators will need to find or develop practices to better serve the child with RTT. Furthermore, the Torres Model (2014)
offers these educators a ten-step implementation process to help them become more effective teacher leaders by spearheading best practices in choosing evidence-based practices.

Miss June Lovell and her teaching team qualify as becoming more effective teacher leaders in the following practices based on the aforementioned process:

1. **Determine Student, Environmental, and Instructor Characteristics** – The evidence in the study indicates that Miss Lovell’s team is fully adept in the acquisition of understanding the needs of their student with RTT based on the triangulation of student, environmental, and instructor characteristics.

2. **Search sources of evidence-based practices** – The team consistently searches for sources of evidence based for specified to their student with RTT. Unfortunately, the resources specified for the educator who teaches such a student are either non-existent or are, at best, practices that are specified for students of different-ability (i.e. autism, cerebral palsy, Down Syndrome, etc.). Instead, the teaching team can only promote the usage of practices based on previous success with students who have similar characteristics of those found in the child with RTT.

3. **Select the practice to utilize** – The team chose practices that were successful for the student with RTT in as much as they have observed.

4. **Identify the essential components of the chose practice** – The themes determined in the study which answer the research questions have been determined by not only the researcher but also verified by observation of the teaching team as themes that identify the essential practices to educate the student with RTT.
5. Implement the Practice within a Cycle of Effective Instruction - The teaching team has identified, with administrative help, a cycle of day to day instruction with repeated use of those practices found to be successful. This includes evolution of practices determined not successful and repurposing those practices for effectiveness.

6. Monitor Implementation Fidelity – Through the use of daily logs, journaling, and accommodation reports in the form of 504 Plans and Individualized Education Plans (IEP), the teaching team effectively monitors implementation of best practices.

7. Progress Monitor Student Outcomes – As with implementation fidelity, the teaching team monitors, records, and utilizes outcome data to drive their decision making of best practice use in educating the child with RTT.

8. Adapt the Practice, If Necessary – Of all the steps in the process, these teacher leaders are the exemplar in this step. By utilizing everything they consider noteworthy, such as conversation with parents and medical professionals, to suggestions from their administrators, as well as evolution of practice through day to day observations, this team of teachers looks for adaptations every day to help their student with RTT succeed.

9. Make Instructional Decisions Based on Progress-Monitoring Data – As effective teacher leaders, Miss Lovell’s team makes decisions based not only on quantitative data, such as number of targets reached or number of steps taken on stairs, but also on qualitative data, such as utilizing daily conversations with
parents and the student with RTT of the use of a daily journal of the events of the
day for reflective analysis.

It is within step number ten that one sees the crux of the problem in becoming a complete
and effective teacher leader while teaching a student with RTT:

10. Become a Teacher Leader and Advocate for these Practices

This study indicates that this teaching team is doing what has come be expected of any
ideal teaching team - the team advocates for their students in every way possible, especially
advocating for the practices that they believe will be most beneficial to Lee. The problem lies
within the available resources that are specific to the education of a student with RTT. The
teaching team mentioned within the study that there is a greater need for specified practices to
help their student. In turn, by discovering these practices, the teaching team can be advocates
and leaders for other teaching team that may be in need of professional learning communities,
strategy guides, or programs and documents that supplement exemplary practices to educate a
student with RTT.

Implications for Teacher Leadership

The accounts and information resulting from this study are important because every
student, regardless of ability, deserves a bright future. Furthermore, those students who live with
disability, such as the child with RTT, deserve a higher quality of life. Educators, partnered with
medical and familial support, can be a cornerstone for a better life for the student with RTT.
Creating these teacher leaders is more important than any study; however, this case study opens a
window into a specific part of the educational world that many may be hoping to look through
and evolve their way of thinking. The following information outlines and provides support for
the value and worth provided in this case study to the future success of teacher leaders educating a child with RTT.

**Implications for School Administration**

In this study, the teaching team never complained about their experience with their student with RTT. As teacher leaders, they expressed and demonstrated amazing professionalism, compassion, and genuine patience with a process that lesser individuals would find daunting. Perhaps it was Miss Lovell’s generous praise of the child, or Miss Joy’s warming smile that mirrored that of the child, or Miss Kinder’s kind words of understanding when a distressed parent calls to say that the child will not be in attendance one morning, but it is evident to the researcher that the ultimate variable in this study was the dedication of these educators and their loyalty to their student. This was evident when they stated their goals and philosophies.

One suggestion for administrators is that there should be a focus on development of teaching philosophies that connect with EBP. Not only this, but teachers could become inquirers and innovators by developing their own EBP in collaboration with special needs teachers across the nation or globally. Perhaps this could be done as teachers are developing their professional plans for the year. Teacher leaders in schools can guide this process, by offering workshops on building philosophies. School administrators need to assist teachers by providing teachers with professional development workshops. This can be done by bringing in RTT experts, sending teachers out beyond their system, or virtual training for any tools to help teach the educator to better serve the child with RTT. Another key option is to help build the professional learning communities with other communities that serve children with RTT in other school systems. Educators such as those found in this case study’s team should be equipped with the best tools necessary to serve their student with RTT. It would only be to the benefit of the
local administration, school system, as well as state and national school systems to equip these
and other likeminded teacher leaders with specific training on the education of a child with RTT.

The team has a deep desire to learn as much as they can about Lee and her condition. They feel that it is the first step in truly being able to educate her.

“Generally, we go to our local special needs colleagues for advice on practices to help out our kiddos who may have passed through the ranks of our halls and our colleagues. However, with Lee, we are the frontline,” says Miss Joy. “No other educator in our system has ever dealt with Rett Syndrome. It is such a rare thing that, truly, until I met Lee and her family, I didn’t know it existed! I truly thought she simply had a severe form of cerebral palsy. So, we just started that way until her parents got us some more information. We checked websites. And then, when we went to admin to ask about conference and professional learning opportunities that we could attend to help Lee, the coordinator came back with nothing. Apart from traveling out of state, way out of state, to go to a medical conference, there was not one thing locally or even statewide that we could attend to learn more about how to help her. I feel so lost and like . . . I’m not serving her properly. This is the first time in a long time I’ve felt that.”

This heartfelt need for further education by Miss Joy is the essential characteristic of the need for professional learning opportunities for educators who teach a child with RTT. Only by learning from other professionals or researching themselves what practices best serve a child with RTT can this team of teachers, and other like them, fulfill the tenth step of the Torres process: Become and Teacher Leader and Advocate for These Practices. The interview data alone suggests that this teaching team would be on the frontline of advocating for educators who
teach children with RTT and that is evidence of progress into this team becoming more effective teacher leaders.

**Implications for Teachers**

Teachers who educate the child with RTT have the potential to become teacher leaders in the field by dedicating time to the creation of new practices. The teacher leader can determine what the needs of the student with RTT are through analysis much like this study (triangulation of observations, surveys, and previous research) and try completely new practices within the themes identified in Chapter 5. The study suggests that this teaching team has a high dependency on eye gaze and assistive technologies, but is there a program written for any computer or smart device that focuses on the needs of the student with RTT alone? A device or app that offers for immediate recognition of eye gaze not just for the mute, but for the student with RTT that can laugh and cry, which when paired with eye gaze, can create purposeful interactions and communications, even phonetic vocal responses? This was one of the concerns of Miss Lovell, who stated:

“If we could find a way to translate Lee’s squeals and groans, or her eye gaze could help us read her mind, or . . . something! I just . . . I think there will be more we can offer her if there was research to map the mind of the student with RTT from an educator’s point of view. It is so difficult to of what a child is in need when they cannot completely tell us. It’s a pipe dream, I suppose. We all love her so much. She has a voice, and it deserves to be heard.”

Torres et al. (2014) suggests that a teacher leader needs to be able to adapt a practice, if necessary, for teacher leaders to be more effective. This teaching team has done so. If this case study has proven anything more than that it is simply a snapshot of a unique education situation,
has also shown that effective teacher leaders adapt. Miss Lovell’s team daily creates adaptations from other effective practices and therapies. The theme of Hand Over Hand instruction found within the data is just one example of the adaptation of an effective practice that is now utilized in the teaching team’s classroom for Lee’s education. Considering Lee’s lack of purposeful use of the hands, the teaching team adapts exercises from the areas of physical therapy and occupational therapy to help Lee make use of her hands.

“It’s not only that we think she needs to learn how to use her hands,” says Miss Kinder, “but it’s more important that we discover specific practices for the child with RTT to use her hands effectively for her. By this, I mean, it would be great if there were a YouTube series or a documentary or something to guide us in specific practices to make Lee grab onto food once again. A child with cerebral palsy may still be able to handle food and feed herself, or maybe not. However, Lee once had the ability to grab her food and eat by herself. I want to help her get there again, but we don’t have the guide to tell us what exercises to do with her verses our child with palsy, who still uses her hands ‘properly.’ It just seems there should be something.”

**Limitations**

The first limitation of this study is that the researcher himself, I, am a parent of a child with Rett Syndrome. The educators within the study were aware of my status as a parent of a child with Rett Syndrome. This limitation could have influenced the data in favor of success versus failures in the utilizations of practices in the classroom.
Another limitation was exposed during the course of this study, but it did not occur from within the study itself. The COVID-19 Coronavirus outbreak caused worldwide panic. Classified as a pandemic, governments from around the world had to take action to ensure the safety of as many people as possible. One of the actions taken in the United States of America was local state government powers were to decide the best measures for the safety of all people in their states. The governor of the state in which this study was to take place passed executive orders to cancel the in-person education which is traditional for public schools in favor of distance learning.

One of the limitations of this study was that the results of the data are solely based on the voluntary choice of the participants to proceed with new EBP or those practices already in place in the public sector. A child with RTT cannot verbally explain if and when she chooses to continue with the program or has become too fatigued with the exercises to move forward. This choice is usually resolved using professional and educator discretion based on past research of users with other diseases. If a professional or an educator deems that too much time has been spent on a particular activity, he or she may choose to remove the participant from the exercise for rest. This would, of course, put a delay on any anticipated data or even present an opportunity for new data to be acquired. In this case, no new procedures occurred that would cause limitations to affect the data as shown.

Other limitations which developed during this study include:

- the researcher’s interpretation of the data
- the honesty of the participants in interviews and surveys
- the number of participants (only one team, from one school)
- the demographic location of participants
Resolution of Limitations

Due to the COVID-19 Coronavirus outbreak, the researcher filed for IRB adjustments and was approved to complete interviews and survey work for the study remotely, via the Google Meet and Zoom applications. These applications make it possible for live video streaming and professional meetings over the Internet. The surveys were completed in documents sent via email and were reviewed by the researcher and the participants for accuracy via Google Meet and Zoom. The researcher was fortunate enough to have already had the opportunity to complete observation within the week before the mandated shutdown of in-person education on March 13, 2020.

As for the other aforementioned limitations, participants for this case study were chosen because they were of special needs educators. This team of educators was furthermore chosen for this case study based on a convenience sample (Miles and Huberman, 1994). This team worked exclusively within the self-contained classroom with students with severe disabilities. In addition, they were chosen because they happened to educate a child with RTT in the same classroom as other students with various disabilities. This study focused on their experiences and reflections of their use of evidence-based practices.

Suggestions for Further Research

After collecting and analyzing the data, it became evident that additional and deeper research around this topic is needed. The following are suggestions for additional research.

- A researcher may choose to conduct this same type of study, but with a different group of participants in a different region of the state or nation. Currently, there are no other
students in the entirety of the case study’s school system who have RTT. However, different participants from a different school system may yield different results, provide additional information, or further confirm results from the research.

- A researcher may propose this same study, but from the point of view of administration and contributing professionals who develop curriculum. This perspective may yield interesting results that would benefit the teacher leaders who desire to evolve further in their fields or even spark a new interest of future teachers with a specialty in teaching children with RTT.

- A researcher may want to conduct a grander quantitative study on percentage of students with RTT statewide, nationwide, or worldwide to determine the need for specified education in more than just a local setting.

- A researcher may want to research the commercial creation of educational curriculum and see how the process may incorporate the needs of the teacher leader who teaches a child with RTT.

- A researcher may want to research the process of curriculum development to discover gaps in the process where students with special needs, such as a child with RTT, are neglected.

Summary

This qualitative case study research project impacts the body of research by adding information for the special needs educator to create a foundational practice with which to educate the child with RTT. Additionally, this research study contributes to the body of research by serving as a model for other teams looking for ways to help educate the child with RTT in their own districts. As a researcher conducting this study, I have been afforded an opportunity to see
the unique creativity and true compassion that a team of educators offered to one little girl with RTT. This passion for learning and their extreme care and love to help this one student can be a beacon of knowledge for further study, to allow other teachers in this same situation a first step in deeper, richer education. This team of participants, in completing this study, has become teacher leaders in their own right. By working with this team of teachers, the researcher has witnessed innovation at a professional level which may be shared with the world of educators.

In the review of literature and through the study’s methodology, the researcher has determined that is evident that evidence-based practices to teach the child with RTT is noteworthy and further study on a grander scale may be of significance to help this population of educators increase their knowledge and leadership opportunity when teaching children with RTT. The importance of understanding the perceptions of educators who work with a child with RTT should raise awareness of the impact EBP have on a team of teacher leaders.

As provided earlier in this study, there is very little research on EBP to help educators better educate the child with RTT. This case study sought out to simply identify those practices and perhaps inspire further research for evidence-based practice effectiveness when utilized by teacher leaders. Conceptual frameworks can evolve, and this is the evolution of any study (Riggins and Ravitch, 2017). This can be said of this case study in that the information in this study for the future of teacher leaders educating children with RTT, much like the innovation of the teacher leaders in this classroom, can and will evolve.
References


Bursuck, W. L., and Damer, M. (2007). Reading instruction for students who are at risk or have disabilities, Boston, MA: Auyn and Bacon.


Lipkin, P. H., and Okamoto, J. (2015). The Individuals with Disabilities Education Act (IDEA)


Spooner, F., McKissick, B. R., & Knight, V. F. (2017). Establishing the State of


APPENDIX A – Daily Teacher Reflection Journal

Teacher Reflection Form for ___________________________ Date: ___________________________

Today’s Reflection Topic: __________________________________________________________________________________

Method of Instruction:

_____ Lecture  ____ Small Group Work  _____ Partner Work

_____ Textbook  ____ Guided Notes  ____ Hand over Hand

_____ Eye Gaze Tech  _____ Auditory Tech  _____ Inclusion

_____ Physical Therapy  _____ Occupational Therapy  _____ Speech Therapy

What, if anything, captured my attention about our student with RTT today?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

What worked well today?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

What could have been more effective today and why?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

What one aspect should I look to improve upon for tomorrow or by the end of this week?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Other Reflections:

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________
APPENDIX B – Interview Questions – Pre-Study Assessment

General Background:

Why did you want to become a special education teacher?

How long have you been teaching children with special needs?

What is one of your biggest strengths? Weaknesses?

What is your experience with the self-contained classroom setting? Inclusion classes?

How do you communicate with services (OT, PT, Speech, etc.)?

How do you implement inclusive practices?

Explain the IEP process and the makeup of the IEP.

What is the school culture like?

How is the culture of the school fostered school-wide?

How does administration support the teachers?

What is your experience teaching with technology?

Rett Syndrome

Have you ever heard of Rett Syndrome? If so, what is your experience with this disorder?

Classroom Data

What types of data do you use in the classroom?

How do you take and analyze data?

How often do you collect data on IEP goals and objectives?

Explain how you will use data collected to guide you in lesson planning.

Explain how you will use data collected to guide you in writing an IEP.

Evidence Based Practices

What is your definition of Evidence Based Practices in the classroom?
Give me an example of an Evidence Based practice you once utilized with any student.

How have you been able to get nonverbal students engaged to participate in lessons?

How do you plan to adapt lessons to meet the state standards?

How do you handle different levels of classroom behaviors?

How can you tell if a nonverbal student is reluctant to learn?

How do you motivate a nonverbal student who is reluctant to learn?

Paraprofessionals

How do you communicate with paraprofessionals in your classroom?

How are paraprofessionals utilized in your classroom?

How would you feel about working with support staff who have more experience than you with, for example, RTT?

Professional Development

What is the last professional development book on Rett Syndrome or educational practices for the student with RTT you read or are currently reading?

What is the last professional development workshop on Rett Syndrome or educational practices for the student with RTT you attended?

Did either of the professional development offerings specifically focus on the student with special needs?

Does the district provide any type of mentor program for teachers of special needs students?

What professional development opportunities are available for teacher growth?
APPENDIX C – Interview Questions – Midterm Study Assessment

Reflection:

Why did you want to become a special education teacher?

Do you still feel that you are serving that purpose that made you want to teach those with special needs?

What is currently one of your biggest strengths? Weaknesses? Have they changed since our last interview?

Has there been any change in how you communicate with services (OT, PT, Speech, etc.)?

How do you currently implement inclusive practices?

Has the school culture changed since our last interview?

How does administration support the teachers?

Rett Syndrome

What new information, if any, have you learned about Rett Syndrome (RTT) since the beginning of this study?

How do you feel RTT has affected the student in your class positively? Negatively?

Are any of the practices implemented for the student with RTT evidence based or generic for any student with special needs?

Of any practices attempted with the student with RTT, which do you personally feel has had the most positive effect? The most negative?

Do you feel this child can learn/is learning?

Evidence Based Practices

Has your definition of Evidence Based Practices in the classroom changed?

Give me an example of an Evidence Based Practices practice you utilized with the student with RTT.

Have you been able to get the student with RTT engaged to participate in lessons?
Paraprofessionals

Have the paraprofessionals in your classroom been important to the Evidence Based Practices process?

How are paraprofessionals utilized for the child with RTT in your classroom?

Have you learned anything from the paraprofessional which you found useful in the education of the child with RTT?

Professional Development

What is the last professional development book on Rett Syndrome or educational practices for the student with RTT you read or are currently reading?

What is the last professional development workshop on Rett Syndrome or educational practices for the student with RTT you attended?

Did either of the professional development offerings specifically focus on the student with special needs? With RTT?

Does the district provide any type of mentor program for teachers of special needs students? With RTT?

What professional development opportunities are available for teacher growth?
APPENDIX D – Interview Questions – Post-Study Assessment

Reflection:

Why did you want to become a special education teacher?

Do you still feel that you are serving that purpose that made you want to teach those with special needs?

What is currently one of your biggest strengths? Weaknesses? Have they changed since our last interview?

Has there been any change in how you communicate with services (OT, PT, Speech, etc.)?

How do you currently implement inclusive practices?

Has the school culture changed since our last interview?

How does administration support the teachers?

Rett Syndrome

What new information, if any, have you learned about Rett Syndrome (RTT) since our midterm interview?

How do you feel RTT has affected the student in your class positively? Negatively?

Are any of the practices implemented for the student with RTT evidence based or generic for any student with special needs?

Of any practices attempted with the student with RTT, which do you personally feel has had the most positive effect? The most negative?

Do you feel this child can learn/is learning?

Evidence Based Practices

Has your definition of Evidence Based Practices in the classroom changed?

Give me an example of an Evidence Based Practices practice you utilized with the student with RTT since the midterm interview.

Have you been able to get the student with RTT engaged to participate in lessons?
Paraprofessionals

Have the paraprofessionals in your classroom been important to the Evidence Based Practices process?

How are paraprofessionals utilized for the child with RTT in your classroom?

Have you learned anything from the paraprofessional which you found useful in the education of the child with RTT?

Professional Development

What is the last professional development book on Rett Syndrome or educational practices for the student with RTT you read or are currently reading?

What is the last professional development workshop on Rett Syndrome or educational practices for the student with RTT you attended?

Did either of the professional development offerings specifically focus on the student with special needs? With RTT?

Does the district provide any type of mentor program for teachers of special needs students? With RTT?

What professional development opportunities are available for teacher growth?

Final Reflection:

Was this a worthwhile study to conduct? Why or why not?

Do you feel other teachers may benefit from the findings of this study, either positively or negatively, and how so?