

HOW EDUCATOR ATTITUDES, KNOWLEDGE, AND PRACTICE IMPACT THE  
ACADEMIC ACHIEVEMENT OF STUDENTS WHO HAVE EPILEPSY:  
A PHENOMENOLOGICAL INVESTIGATION OF  
CANADIAN SECONDARY SCHOOL TEACHERS

by

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Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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## **ABSTRACT**

The purpose of this phenomenological study was to discover how teacher attitude, knowledge, and practice with epilepsy impact the academic achievement of students who have epilepsy. This study assumed that middle school teachers perceive students diagnosed with epilepsy as lower academic achievers when compared to students who do not have epilepsy. The stigma associated with labels, such as epileptic, can negatively impact the academic performance of children with this disorder. For this study, stigma was generally defined as the negative perceptions about epilepsy held by middle school teachers. The participants included six middle school teachers from the Anglophone West School District in New Brunswick, Canada. The data collection techniques for the study were (a) interviews, (b) surveys, and (c) a focus group. The phenomenological analysis based on Stevick-Colaizzi-Keen's method was used to analyze the data. The study results revealed that middle school teachers who teach in the Anglophone West School District need training in how to properly teach and care for students who have epilepsy.

*Keywords:* attitudes, epilepsy, knowledge, middle school teachers, practice, stigma

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### **Dedication**

This dissertation is dedicated to my wonderful parents, Janice and Leonard Fanjoy, who have encouraged me and supported my dreams since the beginning of my academic journey in grade 1. I want to especially thank my mother for all of her love and guidance throughout my life. My mother has always been there for me during good times and bad times. Thanks to Mom for being a wonderful mother and best friend. She did not even hesitate when I asked her to fly with me from our home province in New Brunswick, Canada, to Lynchburg, Virginia, when I needed to attend all three of the intensives. I also want to dedicate my dissertation to my late grand-parents, Connie and Richard Wiggins. They were always very supportive and interested in my studies. I miss them very much. I also want to dedicate this dissertation to my husband Ross Britton. Thank you for all of your love and encouragement.

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## **CHAPTER ONE: INTRODUCTION**

Epilepsy is a common neurological disorder that impacts individuals all over the world (Mustapha, Odu, & Akande, 2013). Epilepsy is the second most frequent neurological disorder diagnosed by medical doctors and epilepsy has a global prevalence rate “between 5 and 10 per 1000” (Alkhamra, Tannous, Hadidi, & Alkhateeb, 2012, p. 430). Students who have epilepsy are likely to experience at least one seizure in the school environment during their academic careers. Depending on where in the brain a seizure arises, it can cause brief disturbances in mobility, thought process, and level of awareness due to the synchronous and excessive firing of the cells in the cerebral cortex (Mustapha et al., 2013).

Chapter 1 includes sections on the following topics: the background of research, which discusses previous studies conducted in the area of teacher attitude, knowledge, and practice with epilepsy; situation to self, which discusses the author's personal experiences of living with epilepsy; the problem statement; the purpose statement; the research questions; the research plan; the significance of the research; the study's delimitations and limitations; a list of definitions pertinent to this study; and a chapter summary.

### **Background**

The majority of research in the area of teacher attitude toward epilepsy, knowledge about epilepsy, and practice with epilepsy has been conducted in countries other than Canada (Alkhamra et al., 2012; Lim et al., 2013; Toli, Sourtzi, Tsoumakas, & Kalokerinou-Anagnostopoulou, 2013). Although a limited amount of research on teachers of students with epilepsy has been conducted in countries such as the United States, no research related to the current study has previously been conducted in any public schools located in the eastern provinces of Canada. The current research study has addressed this lack of research in the

maritime provinces of Canada concerning teacher attitude, knowledge, and practice with epilepsy.

This study discovered how Canadian teacher attitudes, knowledge, and practice with epilepsy impacts student academic achievement. The study focused on educators teaching in middle schools located in New Brunswick, Canada. Existing studies revealed that teacher attitude, teacher knowledge, and teacher practice with epilepsy impact student achievement. For example, a study conducted in the nation of Cameroon revealed that many students were familiar with epilepsy; however, many Cameroonian students who have epilepsy reported that they encountered frequent instances of stigma and discrimination due to their disorder (Njamnshi, Angwafor, Jallon, & Muna, 2009). In a subsequent study, Fernandes, de Barros, and Li (2009) collected data from various test items that revealed some teachers may underestimate the academic performance level of students who have epilepsy (labeled) when compared with students who do not have epilepsy (unlabeled). Study results revealed that group members were more likely to believe students were less capable academically if questionnaires used the term *epileptic* rather than *people with epilepsy* (Fernandes et al., 2009). Thus, the use of the term *epileptic* to describe a student with epilepsy has a negative connotation and impacts teacher perception of the academic abilities of these students.

In summary, this study was designed to discover how teachers' attitude toward epilepsy, knowledge about epilepsy, and practice with epilepsy impacts the academic success of students who have epilepsy, as well as discovering whether teachers' perception of epilepsy is related to the stigma associated with epilepsy. Research into these two areas was important because the results would help to create and implement teacher-training programs that will properly educate them about this neurological disorder. The training programs will instruct teachers how to

effectively teach and care for students who have epilepsy, which in turn will eliminate the stigma associated with epilepsy.

### **Situation to Self**

I am an individual who has epilepsy and who has experienced the stigma associated with epilepsy throughout my academic career. Many of my general education teachers did not possess accurate knowledge about epilepsy and had not received any training in how to properly help students who had epilepsy. I had my first partial seizure when I was in my classroom in grade 6. During lunch hour, I began to act strangely and tried to put two shoes on one foot. I was not responding appropriately to my teacher's questions. My teacher called my parents to come pick me up. I had a generalized seizure in the car, and my parents immediately took me to the local hospital. I was diagnosed with epilepsy when I was 11 years old. In hindsight, it seemed very strange that the administrators and the teachers at my school did not ask my parents to provide them with any information on how to handle my seizures if I were to have another one at school. The teacher obviously told my classmates that I had epilepsy because the days and years following the seizure were dreadful. My classmates and the other students at my school treated me very badly. They continually made fun of me, and they bullied me for being a "freak." My self-esteem plummeted, and I had moments when I wished that I was not around anymore, but I loved my family, and I knew that it was not Christian behavior to commit suicide. My academic life was horrible, but my family life was wonderful. My parents and my family were very loving, caring, and supportive. I thank God for them each and every day.

Fortunately, I moved from the small country school that I attended and transferred to a junior high school in the city. In order to have a regular life and begin to make friends with my peers, I decided that it would be best not to advise my new teachers that I had epilepsy. The first

time that I revealed my condition to my friends was after high school. It was difficult but necessary because I had a seizure while I was with my friends. I was very relieved that they were understanding and were just worried about me. A few years later, one of my closest friends admitted to me that she was worried about being around me and was hesitant about continuing our friendship. Fortunately, she cared too much about our friendship to end it, so she decided to do some research about epilepsy. She wanted to be able to properly help me if I had a seizure while I was with her. This is another reason why training programs should be implemented because education is key to mitigating the fear that causes some of the stigma associated with epilepsy.

One reason for this study has been to determine whether current middle school teachers in New Brunswick, Canada, have sufficient knowledge and training about epilepsy to effectively help students who have epilepsy during their seizures. Effective training programs will improve teacher perception of epilepsy by decreasing the fear associated with the disorder. After teachers receive proper training, they will be able to more effectively teach and care for students with epilepsy in their classrooms because they will have acquired the skills necessary to help these students during seizures.

### **Problem Statement**

The stigma associated with labels such as epileptic can negatively impact the academic performance of children who have been diagnosed with epilepsy (Jacoby, 2008). By exploring teacher perceptions of students who have been diagnosed with epilepsy, this study seeks to mitigate the stigma associated with epilepsy through the creation of educational programs and through increasing opportunities for academic achievement in students who have been diagnosed with epilepsy.

Children who have epilepsy often experience the stigma associated with epilepsy (Asindi & Eyong, 2012). For example, some children who have epilepsy have been viewed as being demon possessed, as suffering from madness, or as being under a family curse (Asindi & Eyong, 2012). In other cases, children with epilepsy were bullied by their peers. Asindi and Eyong (2012) found that 50% of such children interviewed would drop out of school if they were able to do so because of the embarrassment associated with having epilepsy. Asindi and Eyong (2012) also found that 46% of children who have epilepsy and have experienced a seizure at school would change schools if they had the opportunity and 24% of these students have considered committing suicide because of the stigma associated with epilepsy. These data indicate the importance of addressing issues that arise from stigma in order to ensure that all students have access to a positive learning environment.

Babikar and Abbas (2011) found that many teachers in their study did not have sufficient knowledge or training to adequately support students who have epilepsy. Some teachers who participated in the study demonstrated discriminatory beliefs and behaviors toward students who have epilepsy (Babikar & Abbas, 2011). These results suggest that teachers benefit from attending seminars or information sessions about epilepsy, which in turn helps students who have epilepsy to succeed academically. School teachers who are properly educated about this disorder could assist in reducing or eliminating the stigma associated with epilepsy (Babikar & Abbas, 2011).

Other scholars determined that when compared to a control group (siblings), children who have epilepsy are unfairly labeled and are more apt to be enrolled in special education programs regardless of their IQ scores (Berg, Hesdorffer, & Zelko, 2011). Therefore, it is important to teach school teachers that labels can have a negative impact on the academic

success of students who have epilepsy. A research study conducted by Fernandes et al. (2009) sought to determine whether the terms *epileptic* or *person with epilepsy* had an impact on attitudes toward children who have epilepsy. The results of the questionnaire given to two groups of students revealed that Group 2, who were given the survey that used the term *epileptic*, had a significantly higher negative perception of epilepsy than Group 1, who were given the survey that used the term *person with epilepsy*. This study revealed that terminology can have an impact on the stigma associated with epilepsy (Fernandes et al., 2009). Therefore, teachers need to be aware that the use of incorrect terminology can negatively impact students who have epilepsy.

Even though there is an awareness of epilepsy, most individuals still have misconceptions about epilepsy and of individuals diagnosed with this disorder. Scholars have found that misperceptions about, and stigma related to, epilepsy still exist throughout many contemporary cultures, social groups, and societies (Gzirishvili et al., 2013). However, the acceptability of individuals who have epilepsy has increased in some circles (Gzirishvili et al., 2013). Therefore, the problem addressed in this study is the impact of teacher attitude, knowledge, and practice with epilepsy on the academic achievement of students who suffer from epilepsy.

### **Purpose Statement**

The purpose of this phenomenological study was to discover how teacher attitude, knowledge, and practice with epilepsy impact the academic achievement of middle school students who have epilepsy in New Brunswick, Canada. For the study, stigma was generally defined as the negative perceptions about epilepsy held by middle school teachers.

### **Significance of the Study**

This study investigated how the diagnosis of epilepsy impacts student academic achievement. The current findings of this study may be used by school administrators in Canada to create and implement educational programs or seminars on epilepsy for middle school teachers (general education and special education) to improve the academic achievement levels of students who have epilepsy. Similarly, research conducted by Jantzen et al. (2009) found that training programs for students with epilepsy and their parents was beneficial. The training program implemented by Jantzen et al. (2009), “. . . showed medium to large effects both on medical and social aspects of epilepsy knowledge compared to controls” (p. 485). Therefore, administrator-led programs can mitigate the stigma associated with epilepsy and improve the learning environments of students who have epilepsy. Lee et al.'s (2011) “. . . finding that teachers' knowledge is the most important factor influencing teacher's attitudes toward epilepsy indicates that teachers should be provided with information about epilepsy universally” (p. 380). Therefore, teacher training programs in the area of epilepsy will improve the learning environments for students who have epilepsy, and will have a positive impact on the achievement levels of these students (Lee et al., 2011). Future researchers will be able to duplicate this study by surveying primary school teachers or high school teachers.

### **Research Questions**

Recent research studies conducted in countries other than Canada, such as Egypt, Greece, and the United States, revealed that teacher attitude, knowledge, and practice with epilepsy impacts the academic success of students diagnosed with this disorder (Shehata & Mahran, 2010; Toli et al., 2013; Wodrich, Jarrar, Buchhalter, Levy, & Gay, 2011). Based upon previous research, the following research questions have guided this study's attempt to discover how



teachers' perception of epilepsy impacts the academic achievement of students who have epilepsy in Canadian schools (Shehata & Mahran, 2010; Toli et al., 2013; Wodrich et al., 2011).

This phenomenological study has been guided by the following research questions:

**RQ1.** How do teacher attitudes toward epilepsy impact their perception of academic ability of students who have been diagnosed with epilepsy?

**RQ2.** How does teacher knowledge about epilepsy impact their perception of the academic ability of students who have been diagnosed with epilepsy?

**RQ3.** How does teacher practice with epilepsy impact their perception of the academic ability of students who have been diagnosed with epilepsy?

### **Research Plan**

For this qualitative phenomenological study, data collection consisted of questionnaires and surveys completed by teachers in a school district in New Brunswick, Canada. Teachers were asked to complete a questionnaire and a survey regarding their perceptions of the academic capabilities of students who have epilepsy as compared to students who do not have epilepsy. Six teachers were selected to attend a focus group meeting to discuss their opinions, beliefs, and viewpoints about epilepsy and the academic capabilities of students who have epilepsy. Teachers at this level were assumed to be aware of epilepsy, based on earlier studies. For example, “Surveys conducted mostly in developing countries show that many teachers are aware of epilepsy in general, but most of them have misperceptions about specific problems” (Mecarelli, Capovilla, Romeo, Rubboli, Tinuper, & Beghi, 2011, p. 285). Many factors can negatively impact the academic achievement of students who have epilepsy. Some of these factors are low self-esteem, low Intelligent Quotient (IQ) scores, stigma associated with epilepsy, teacher

attitude toward epilepsy, teacher knowledge of epilepsy, teacher experience with epilepsy, and labels such as epileptic.

A qualitative study, using a phenomenological approach, was the most appropriate research method for this study because it measures the subjective meaning that teachers associate with epilepsy, which influences the academic achievement levels of students who have epilepsy. Creswell (2013) indicated that “. . . a phenomenological study describes the common meaning for several individuals of their lived experiences of a concept or a phenomenon” (p. 97). In this research study, the impact of teachers' attitudes, knowledge, and practice on students' academic achievement was investigated. Data collection strategies implemented were (a) interviews, (b) surveys, and (c) a focus group. The data analysis technique used was a phenomenological design based on the Stevick-Colaizzi-Keen method. A phenomenological design allowed information to be obtained about teacher attitude, knowledge, and practice with epilepsy directly from middle school teachers in New Brunswick, Canada.

### **Delimitations and Limitations**

#### **Delimitations**

This study had three delimitations. First, the study included only teachers who teach in one particular school district. Only one school district was included because permission to conduct research in the other Anglophone school district that I contacted was not obtainable. Second, the study only included teachers from grades 6 - 8. Middle school teachers were chosen because there were a large number of individuals in the Anglophone school district who met the requirements to be potential participants. Third, although New Brunswick is a bilingual province, the study only included middle school teachers who can speak and understand the English

language because the survey questions and interview questions were only written and explained in English.

### **Limitations**

The study had two limitations. First, teachers' fears of being negatively judged by society if they were to reveal their true feelings about epilepsy, could have caused them to provide answers that they believed to be commonly held beliefs within society, instead of divulging their true beliefs. Second, teachers who did not want to participate in the study could have felt obligated to participate because they feared that if they had declined, they would have been negatively judged by their fellow teachers and their school administrators.

### **Definitions**

1. *Epilepsy* - Epilepsy is a common neurological disorder that impacts individuals all over the world (Mustapha et al., 2013). Epilepsy is the second most frequent neurological disorder diagnosed by medical doctors and epilepsy has a global prevalence rate of “. . . between 5 and 10 per 1000” (Alkhamra et al., 2012, p. 430).
2. *Seizures* - Seizures can cause momentary disturbances in mobility, thought process, and state of consciousness when the involved part of the cerebral cortex suddenly produces excessive amounts of electrical discharges (Mustapha et al., 2013).
3. *Generalized seizures* - Generalized seizures include tonic-clonic seizures, tonic seizures, clonic seizures, and absence seizures (Titus, Kanive, Sanders, & Blackburn, 2008).  
However, this literature review will discuss only the tonic-clonic and absence seizures.
4. *Focal or partial seizures* - Focal or partial seizures may or may not cause an altered level of awareness (Titus et al., 2008). The symptoms the patient experiences depend on which part of the brain is involved (Titus et al., 2008). For example, involvement of the primary

motor area will cause jerking movements of the affected area such as the arm (Titus et al., 2008).

5. *Social Cognitive Theory* - The social cognitive theory is based on the premise that individuals develop through their interactions with society (Bandura, 1989).
6. *Stigma* - Stigma is a negatively held belief, perception, or opinion. In this study, stigma was generally defined as the negative perceptions about epilepsy held by middle school teachers. This label can have an impact on the academic, social, and personal lives of students who have epilepsy (Fernandes et al., 2009).

### **Summary**

This chapter provided a detailed description of this study. This study enabled middle school teachers to describe their opinions, beliefs and feelings about epilepsy. It was important to conduct research in the area of teacher attitude, knowledge, and practice with epilepsy because teachers are in a prime position to be able to educate others about the disorder. Access to accurate and up to date information to effectively teach and properly care for students during seizures is important for middle school teachers. Similarly, Wodrich et al. (2011) noted that “preparedness to respond to student's epilepsy-associated medical needs (e.g., classroom emergencies) is of further concern to teachers” (p. 360). Based on Bandura's (1989) social cognitive theory, it is important for teachers to educate others about epilepsy because it will decrease the stigma associated with this disorder, thereby, improving the self-efficacy of students who have epilepsy. Improving self-efficacy in students who have epilepsy will improve their academic, social, and personal lives (Bandura, 1989).

## **CHAPTER TWO: LITERATURE REVIEW**

Chapter 2 includes a brief overview of the entire chapter. It also provides a description of the theoretical framework that was used during this study. The theoretical framework used was Albert Bandura's social cognitive theory (Bandura, 1989). Additionally, this chapter includes a synthesis of current literature in the area of teacher attitude, knowledge, and practice with students who have been diagnosed with epilepsy. Finally, this chapter contains a summary of literature on the topic of epilepsy, areas that should be investigated, and gaps in the literature regarding teacher attitude, knowledge, and practice with epilepsy.

### **Theoretical Framework**

This study was based on Albert Bandura's (1989) Social Cognitive Theory. The social cognitive theory is based on the premise that individuals develop through their interactions with society (Bandura, 1989). Bandura (1989) did not believe that individuals are solely self-directed or merely influenced by environmental pressures, but that human motivation is based upon their personal beliefs, family influences, and societal norms. He also believed that there are three types of processes that manipulate human functioning: a) cognitive processes, b) emotional processes, and c) motivational processes (Bandura, 1989). Based upon this belief, Bandura asserted that "any account of the determinants of human action must, therefore, include self-generated influences as a contributing factor" (Bandura, 1989, p. 1175) to human motivation.

Based upon Bandura's (1989) social cognitive learning constructs, such as self-efficacy, increasing self-esteem would be effective in helping students who have epilepsy succeed academically. It is not uncommon for students who have been diagnosed with epilepsy to experience feelings of loss and fear of the unknown (Sung, Muller, Ditchman, Phillips, & Chan, 2013). When individuals are diagnosed with epilepsy, they do not know what future challenges

they will encounter, and how the diagnosis may impact their academic careers, their personal lives, and their social lives (Sung et al., 2013). Students who have been diagnosed with epilepsy may feel angry, depressed, and sad because the life that they have known up until their diagnosis will change and it is reasonable to assume that they will need to make lifestyle adjustments in order to accommodate living with epilepsy (Sung et al., 2013). They may also experience feelings of inadequacy, failure, and insufficiency because they may believe that they are less capable than they were before they were diagnosed with epilepsy (Sung et al., 2013). These feelings can lead to a decrease in self-efficacy and contribute to low self-esteem (Sung et al., 2013).

Self-efficacy refers to an individual's confidence that he or she can attain specific goals or complete tasks that need to be completed to succeed academically, personally, or socially (Bandura, 1989). Teachers need to learn that students who have epilepsy may possess lower self-efficacy than those who do not have epilepsy causing students who have epilepsy, to feel insecure about their academic abilities (Sung et al., 2013). Therefore, it is important for teachers to encourage high levels of self-efficacy through their classroom curriculum (Sung et al., 2013). It is through self-efficacy that students who have epilepsy can improve their own situations at school by personally educating their teachers, their peers, and other members of society about their condition (Sung et al., 2013). Students who have epilepsy can also teach their teachers and their peers about effective techniques to use when helping students during seizures, which in turn will decrease or eliminate the stigma associated with epilepsy (Sung et al., 2013).

Students who have epilepsy need to feel that they are in control of their disorder and it does not define them as individuals (Sung et al., 2013). It is not uncommon for students who have epilepsy and who possess low self-efficacy to feel helpless and powerless because they feel

dependent on others and on medication to help control epilepsy (Sung et al., 2013). It is important for them to learn proper coping skills and techniques, such as problem-focused coping strategies and cognitive-behavioral coping strategies, in order to maintain healthy levels of self-esteem and self-efficacy (Sung et al., 2013). Effective coping strategies can help to decrease or eliminate depression and anxiety levels in some students who have epilepsy and also help these students maintain or improve their psychological well-being (Sung et al., 2013).

Students who have epilepsy and who possess high self-esteem and high self-efficacy are more apt to implement effective coping strategies that will help them successfully achieve their academic and personal goals, when compared to students who have epilepsy and who have low self-efficacy (Bandura, as cited in Sung et al., 2013). Based upon Bandura's social cognitive theory, individuals' performance rates can best be predicted by their level of self-efficacy (Bandura, as cited in Sung et al., 2013). Students who have epilepsy and who possess a healthy self-esteem and self-efficacy are more apt to succeed academically and enjoy a high quality of life (Sung et al., 2013). Students who have epilepsy and who feel that they are in control of their lives and their futures usually experience fewer psychosocial tribulations throughout their lifetime, when compared to those who have epilepsy and who also feel helpless (Sung et al., 2013). For this reason among others, it is important for researchers to conduct and to review studies in the area of teacher attitude, knowledge, and practice with epilepsy.

### **Review of Literature**

Over the past 60 years, researchers have conducted numerous studies concerning teachers' attitudes toward epilepsy, teachers' knowledge about epilepsy, and teachers' practice with epilepsy (Alkhamra et al., 2012). The World Health Organization (WHO) has noted that approximately 50 million individuals around the world are impacted by epilepsy (Chen, Chen,

Yang, & Chi, 2010). Epilepsy can be defined as a neurological disorder that occurs when neurons misfire and cause repeated and unprovoked seizures. Seizures result from sudden, unprovoked synchronous electrical activity within the brain (Wallace & Farrell, as cited by Chen et al., 2010). Epilepsy is a common neurological disorder that impacts between five and ten individuals in a thousand (Alkhamra et al., 2012; Ibekwe, Ojinnaka, & Iloeje, 2007; Shehata & Mahran, 2010). This neurological disorder is the most common disorder that pediatric doctors encounter in their Pediatric Neurology Units (Ibekwe et al., 2007). Epilepsy has no limitations or boundaries when it comes to those who suffer from it; it impacts males and females from all age groups, races, cultures, societies, and demographics (Gzirishvili et al., 2013).

Individuals who have epilepsy usually experience their first seizure before they reach adulthood and many of these individuals have their first seizure during early childhood (Chen et al., 2010). Specifically, Chen et al. (2010) revealed that approximately 75% of individuals who developed epilepsy experienced a seizure by the time they started school. Epilepsy is a chronic neurological disorder that is common in children of school age (Eyong, Anah, Asindi, & Ubi, 2012). A diagnosis of epilepsy can be made in any child with recurrent unprovoked seizures. Typically, the diagnosis is made after the individual has experienced two or more unprovoked seizures (Titus et al., 2008). Pediatric neurologists will only make this diagnosis when there is sufficient evidence that these children have experienced more than one seizure that is unrelated to other medical conditions or trauma (Titus et al., 2008).

There are many ways to categorize seizure types, but two are more common than others, and they are (a) generalized seizures and (b) focal or partial seizures (Titus et al., 2008). Generalized seizures include tonic-clonic seizures, tonic seizures, clonic seizures, and absence seizures (Titus et al., 2008). However, in the generalized category, this literature review will



discuss only the tonic-clonic and absence seizures. The second seizure category to be discussed in the review of literature is focal or partial seizures.

Tonic-clonic seizures can be dramatic and frightening to on-lookers and are extremely embarrassing for students who experience them (Titus et al., 2008). It is not uncommon for students who have experienced tonic-clonic seizures at school to be bullied, excluded, and teased by their peers because they are afraid or disgusted, or they do not understand why some individuals experience seizures (Titus et al., 2008). Some students who have epilepsy develop low self-esteem because they regularly encounter situations where negativity is directed toward them and the stigma associated with epilepsy ensues (Bell & Sander, 2009). In some cases, students who have epilepsy are more apt to attempt suicide or successfully commit suicide to escape the emotional pain and loneliness of being singled out and ridiculed by their peers, their teachers, and other members of society (Bell & Sander, 2009). Bell and Sander (2009) suggested that it is important for future researchers to determine whether their participants have depression, which could also be a factor in suicidal ideation of students who have epilepsy.

Students who have epilepsy and who frequently experience the negative effects of the stigma associated with epilepsy may become depressed for extended periods of time because they feel inadequate, belittled, or ostracized by their families, their teachers, their peers, and society (Bell & Sander, 2009). Because of these negative feelings and the resulting depression, anger, and frustration, these individuals may decide that the only way to stop these feelings from occurring is to end their lives (Bell & Sander, 2009). Education of teachers, students, and other members of society about epilepsy and adequate supports for individuals with epilepsy may prevent future suicides from occurring.

## **Absence and Focal Seizures**

Absence seizures may go unnoticed by teachers because such seizures are subtle. For example, students who are experiencing an absence seizure may experience brief periods in which they are unaware of their surroundings but without having associated tonic-clonic movements (Titus et al., 2008). In young children, absence seizures may occur hundreds of times per day and typically last 10-15 seconds. Absence seizures can impact students' ability to function in school. In some cases, students are incorrectly identified as having attention deficit issues because their teachers are not aware that they are experiencing absence seizures during class (Titus et al., 2008). Absence seizures can have a negative impact on the learning process as some students may experience several episodes of loss of awareness throughout the day and will not be aware that they have missed portions of the subject matter being taught during class time (Titus et al., 2008). In contrast, focal or partial seizures that do not cause an altered level of awareness are referred to as simple focal seizures. During a simple focal or partial seizure, the person who has epilepsy is completely aware of what is happening but is unable to stop it. If there is associated altered level of awareness, these seizures are referred to as complex focal or partial seizures (Titus et al., 2008).

School-aged children who have been diagnosed with epilepsy often encounter a variety of problems during their academic careers. For example, an abundance of research reveals that individuals who have epilepsy are at risk of developing an assortment of educational and cognitive difficulties (Berg et al., 2011; Wodrich et al., 2011). Wodrich et al. (2011) stated that “well documented, epilepsy-related cognitive and educational risks include those to global IQ, memory, processing speed, attention, academic acquisition, peer acceptance, and special services usage” (p. 360). Frequent seizures impact cognitive, social, and personal development of

individuals who have epilepsy (Chen et al., 2010). Children between the ages of 7 and 12 are in the process of developing their learning skills, as well as their social skills, so it is especially important to provide students within this age group with an adequate support system (Erikson, as cited by Chen et al., 2010). The fundamental skills developed between the ages of 7 and 12 provide a foundation for future skills that those individuals will require in their academic careers and their professional and personal lives.

It is important for teachers to realize that a diagnosis of epilepsy can have a major impact on the student's learning process because of difficulties associated with the condition. Some students with epilepsy have co-morbid learning disabilities, social skills difficulties, and cognitive delays (Reilly & Ballantine, 2011). Unfortunately, it is not uncommon for teachers, parents, medical advisors, and even those who have epilepsy to focus primarily on the effective control of seizures through medication (Reilly & Ballantine, 2011). While the effectiveness of medication in controlling seizures is important, it is also important to focus on the academic success, personal success, professional success, and social success of those who have epilepsy and to take into consideration other factors that may impact these areas (Reilly & Ballantine, 2011). Researchers note that many students who have epilepsy tend to be absent from school on a regular basis, perform poorly academically, and experience higher rates of emotional and social difficulties when compared to their peers who do not have epilepsy (Wodrich & Cunningham, as cited in Reilly & Ballantine, 2011).

In cases where students who have epilepsy are not performing well academically, teachers should attempt to determine whether they have an undiagnosed learning disability or other contributing factors (Reilly & Ballantine, 2011). It is not uncommon for absenteeism, peer exclusion or bullying, family embarrassment or self-shame regarding epilepsy, negative teacher

perceptions toward epilepsy, and lack of teacher knowledge about epilepsy to have an impact on the academic success of students who have epilepsy (Reilly & Ballantine, 2011). Students who have epilepsy may also become sleepy during classroom hours because they are experiencing seizures at home during the night while they are sleeping or because drowsiness is a side effect of their medication (Reilly & Ballantine, 2011). Students who experience seizures during the night are more apt to become sleepy, tired, frustrated, restless, and exhausted during classroom hours (Reilly & Ballantine, 2011). Students who have epilepsy and who experience sleep deprivation may have difficulty remaining alert and paying attention to their teachers and may also display problematic behaviours such as acting-out during class and disrupting the classroom dynamic (Didden et al., as cited by Reilly & Ballantine, 2011).

Moreover, many teachers obtain their information about epilepsy from inaccurate and unreliable sources that state that children who have epilepsy are not as able, capable, gifted, or talented as other children (Reilly & Ballantine, 2011). This inaccurate information about epilepsy can negatively impact teacher and other educators perceptions regarding the academic abilities of students who have epilepsy (Babikar & Abbas, 2011). Thus, some teachers also believe that students who have epilepsy are not as intelligent as those who do not (Babikar & Abbas, 2011). The belief that students who have epilepsy are less intelligent than those who do not have epilepsy is a fallacy, as students diagnosed with epilepsy fall within the same intelligence range as students who do not have epilepsy (Babikar & Abbas, 2011). For students who have epilepsy, however, the negative viewpoint about epilepsy and seizures possessed by some of their teachers, peers, and society can impact on the development of their self-confidence, self-esteem, and self-worth (Babikar & Abbas, 2011). It is important for students of middle school age who have epilepsy to learn how to successfully develop friendships with others as well as to remain in

control of themselves (Chen et al., 2010). Such students who do not properly develop these skills are at risk for feeling inferior to others, which can negatively impact their self-esteem and self-competency level (Erikson, as cited in Chen et al., 2010). It is important for students who have epilepsy to learn how to develop long-term friendships, effectively communicate with others, show compassion, properly deal with conflicts, and become productive members of society (Chen et al., 2010).

### **Academic Achievement**

In addition, children who have epilepsy do not properly develop a positive self-image are likely to produce lower than average grades regardless of their intelligence level because they are viewed by others as less competent than their peers who do not have epilepsy (Chen et al., 2010). Studies have shown that when compared to students who do not have epilepsy, students who have epilepsy usually produce lower test scores and, overall, perform poorly academically (Chen et al., 2010). Not surprisingly, it is common for students who have epilepsy to begin to believe that they are not as smart as their peers when their teachers, peers, and parents believe this to be true (Chen et al., 2010). Children who have epilepsy are not oblivious to the beliefs, feelings, and thoughts of those around them (Chen et al., 2010). Even if they do not share these same beliefs in the beginning, over time these children may begin to take on this same viewpoint toward themselves and others who have epilepsy (Chen et al., 2010). Unfortunately, some children who have epilepsy fall victim to learned helplessness when their teachers continually tell them that they cannot participate in certain learning activities because they have epilepsy or because they are not likely to succeed academically because of it (Chen et al., 2010). Research has revealed that erroneous teacher perceptions of epilepsy can negatively impact the short-term and long-term academic success of students who have epilepsy (Chen et al., 2010).

Researchers in Africa, Asia, Europe, North America, and South America have contributed a wealth of information in the area of epilepsy and its impact on student academic achievement and social skills (Alkhamra et al., 2012). The majority of the research conducted in these regions has indicated that most teachers who participated were aware of epilepsy (Alkhamra et al., 2012). Research has also revealed that the perception of epilepsy has improved in the areas where the studies were conducted (Alkhamra et al., 2012). Many misperceptions and erroneous beliefs still exist, and can impact teacher attitude, knowledge, and practice with epilepsy (Alkhamra et al., 2012). Therefore, it is important to inform parents/guardians, educators, health care professionals, and the general public that any misperceptions society has about epilepsy can have a negative impact on the academic success and social progression of future generations (Asindi & Eyong, 2012).

### **Epilepsy Education**

It is also important to educate youth who have epilepsy about the disorder. Research has shown that children with epilepsy are not as knowledgeable about their own diagnosis as children who have other disorders and diseases, such as diabetes. Some children who have epilepsy feel that their parents and doctors do not include them in their conversations during appointments with their specialists (Jantzen et al., 2009). When creating services, programs, or action plans to educate teachers, students, and the general public about epilepsy, it is important to be in possession of data that reveal the prevalence rate and characteristics associated with epilepsy found within the local population (Swiderska, Gondwe, Joseph, & Gibbs, 2010). In some cases, children who have epilepsy do not have sufficient knowledge about it and the ways to prevent or decrease the likelihood of experiencing a seizure. Educating students who have epilepsy about the disorder itself and about the importance of getting enough sleep, taking their

medication regularly, and observing safety precautions is a crucial part of ongoing care.

Education of friends, family members, peers and teachers on what to do in the event of a seizure may reduce harm during or from the event (Jantzen et al., 2009).

Students, who have epilepsy and who have a good understanding of their disorder can better educate their teachers and their peers about proper methods to use to help them during their seizures than students without this knowledge (Jantzen et al., 2009). Students who are educated about their epilepsy are likely to possess higher self-esteem than those do not possess enough knowledge about their medical condition (Frizzell, Connolly, Beavis, Lawson, & Bye, 2011). Students who have sufficient knowledge about epilepsy usually feel more empowered and confident overall and usually possess a higher level of mental health when compared to those who do not possess adequate knowledge about epilepsy (Jantzen et al., 2009). For example, Frizzell et al. (2011) discovered that educational programs without the inclusion of psychological components, are effective methods to implement when attempting to improve self-efficacy in relation to seizures.

Frizzell et al. (2011) also found that students with epilepsy who participated in epilepsy educational intervention programs improved their knowledge and attitudes toward epilepsy and were more likely to develop healthy and long-term friendships with their peers. However, other studies indicated the level of knowledge that children who have epilepsy possess about their own condition is not significantly higher when compared to children who do not have epilepsy (Jantzen et al., 2009). Jantzen et al. (2009) noted that an educational program referred to as the FLIP & FLAP program “is an effective child-and family centred programme, which provides knowledge on medical and social aspects of epilepsy and its treatment in an age-appropriate way” (p. 485). The results of the study by Jantzen et al. (2009) indicated that children who

completed the FLIP & FLAP program reported higher knowledge and understanding about epilepsy as well as an improvement in their quality of life. These results support the need for educating youth who have epilepsy about their own medical condition because these individuals are the only ones who understand the challenges that they encounter and the degree to which their disorder impacts their daily lives (Jantzen et al., 2009).

### **Teacher Attitude About Epilepsy**

Teachers' attitudes can impact the academic achievement of the entire student population, so there is a high probability that teachers' attitudes toward epilepsy can impact the academic success of students who have this disorder (Lee et al., 2011). Lee et al. (2011) believed that acceptable academic performance and properly developing social skills are important to the quality of life of all students. Lee et al. (2011) also believed that teachers' attitudes toward persons with epilepsy could significantly impact the academic success and social acceptance of these students. Recent studies have investigated teacher attitude and knowledge about epilepsy (Eyong et al., 2012; Lee et al., 2011; Mustapha et al., 2013). The common theme was that teachers did not believe that students who have epilepsy are as academically capable as their peers who do not have epilepsy (Lee et al., 2011). Furthermore, a study conducted by Eyong et al. (2012) revealed that the majority of teachers who completed questionnaires about epilepsy had many misconceptions about the disorder. The majority of teacher respondents (85%) revealed that they obtain their information about epilepsy from their community (Eyong et al., 2012). Researchers noted that 57% of the teachers who participated in their study believed that students who have epilepsy have below average intelligence (Eyong et al., 2012). Another study noted that when compared with general education teachers, special education teachers are more apt to properly support and care for students who have epilepsy, as well as feeling more



comfortable teaching students who frequently experience seizures during class hours (Swiderska et al., 2010).

The misconceptions that teachers have about epilepsy can have a negative impact on their students' academic careers, as well as their students' social interactions within the general community. For example, Eyong et al. (2012) demonstrated that the various misconceptions that community members possess might be caused by an abundance of inaccurate information. A study conducted by Alkhamra et al. (2012) revealed that these misconceptions about epilepsy can lead to the negative attitudes of the general community toward students who have epilepsy. Alkhamra et al. (2012) also revealed that teachers' misconceptions about epilepsy impacts students' overall academic performance, social skills, and future academic success in post-secondary institutions. The misconceptions that teachers have about epilepsy can also have an effect on their students' self-esteem, self-worth, and self-confidence. The outcome of the negative attitudes that teachers, peers, and the general community have toward students who have epilepsy can be much worse than the outcome of the disorder itself (Alkhamra et al., 2012).

Middle school teachers who possess a negative attitude toward epilepsy and toward students who have been diagnosed with epilepsy can have a negative impact upon the academic futures of these students (Lim et al., 2013). Some students who have epilepsy may have been advised not to take the prerequisite courses necessary in order to apply to post-secondary educational institutions. Teachers, guidance counsellors, and/or parents may have discouraged these students from choosing such courses because they believed that students with epilepsy are academically incapable of succeeding at college or university (Lim et al., 2013). The lack of encouragement to enroll in college preparation courses during high school may negatively impact the future financial success of these students (Lim et al., 2013). For the rest of their lives,

students who have epilepsy may find themselves in the position of being unable to achieve specific career goals because of the erroneous beliefs and perceptions held by the individuals with whom they had contact during their academic careers (Alkhamra et al., 2012; Lim et al., 2013).

Furthermore, a study conducted in Italy revealed that even though experienced secondary teachers had adequate knowledge about epilepsy, they possessed negative attitudes toward students who had epilepsy and their academic capabilities (Mecarelli et al., 2011). When compared to novice middle school teachers, it is not uncommon for experienced middle school teachers who have had frequent and direct contact with students who have epilepsy to believe that students who have this disorder are more apt to have learning deficits and/or mental disabilities (Mecarelli et al., 2011). The stigma associated with epilepsy can be more harmful than the disorder itself. A diagnosis of epilepsy can cause others to expect less from such students as well as decreasing the personal expectations of those students themselves. The decrease or lack of expectations of these students can often have a negative impact on the quality of life of these individuals (Gzirishvili et al., 2013).

### **Teacher Knowledge About Epilepsy**

In general, university education programs do not usually include formal information training sessions pertaining to teaching or caring for school-aged children who have medical disorders such as epilepsy (Mecarelli et al., 2011). Research conducted in the area of teacher knowledge about epilepsy in the United States has revealed that many teachers do not have sufficient knowledge about epilepsy, which can lead to significant fear and panic when one of their students is having a seizure (Wodrich et al., 2011). Teachers who do not have sufficient knowledge about epilepsy and how to properly care for students during seizures may be placing

these students in danger as they are unfamiliar with acute seizure management. Conversely, teachers may decide to prematurely call for emergency services when, if properly trained, they could have safely handled the situation themselves (Mott, Shellhass, & Joshi, 2013). Moreover, a study conducted by Wodrich et al. (2011) revealed that the teachers who participated in their study only possessed about 50% of the facts about epilepsy.

**Degree of teacher knowledge.** Furthermore, the degree of teachers' knowledge about epilepsy can impact many areas of the lives of students who have epilepsy. Additionally, teachers who do not have sufficient knowledge about epilepsy can impact student self-esteem, social skills, and the likelihood of success during adulthood (Bishop & Boag, 2006). Teacher attitude can also impact academic success in one of two ways: academic underachievement or low achievement. Academic underachievement exists when students' academic performance significantly conflicts with their expected potential, based upon the score that they obtained on the Intelligent Quotient (IQ) test. Low achievement exists when the academic performance of a student falls below the mean for a particular subject and is not based on the IQ score (Reilly & Neville, 2011). The school environment plays a major role in the lives of all students, so it is extremely important to create a learning environment that is beneficial to the academic success of all students (Bishop & Boag, 2006).

Students who have epilepsy are at a higher risk for accidents at school compared to students who do not have epilepsy (Toli et al., 2013). The increased risk of accidents can negatively impact the quality of life experienced by these students (Toli et al., 2013). For example, Toli et al. (2013) found that 45% of their student participants who had epilepsy had experienced a seizure-related accident at school, and 18% of those students required emergency medical treatment from their local hospital. When compared to children who do not have

epilepsy, children who have epilepsy are more likely to experience contusions, minor injuries, and bone fractures associated with falls caused by their seizures (Toli et al., 2013). Children who have epilepsy are also more susceptible to being struck by cars, being hurt on playground equipment, falling off amusement park rides, drowning in swimming pools, and falling down stairs because they experience brief episodes of unconsciousness or unawareness (Titus et al., 2008; Toli et al., 2013).

**Teacher training.** In addition, many school teachers have not received any formal training about epilepsy and the challenges that students who have epilepsy experience throughout their academic careers as well as in their personal and social lives (Babikar & Abbas, 2011). One research study revealed that teachers obtained most of their knowledge about epilepsy from their community, the Internet, peers, parents, and their personal experience with students who have epilepsy (Alkhamra et al., 2012). Shehata and Mahran (2010) similarly suggested that it is important to make an effort to educate the general population through information sessions, seminars, and programs related to epilepsy, as well as through the use of social media, such as the Internet.

Information obtained from the Internet, peers, parents, and students who have epilepsy is often outdated, erroneous, or inaccurate, especially in the area of how to care for students during a seizure (Alkhamra et al., 2012). For example, researchers found the majority of teachers were very knowledgeable about the causes and indicators of epilepsy; however, they were not knowledgeable about the proper techniques to use when helping students during seizures (Alkhamra et al., 2012). When teachers who participated in the study were asked about the proper methods to implement during a seizure, many of the respondents believed that they should place something in the student's mouth to prevent the tongue from blocking the air

passage (Alkhama et al., 2012). These same teachers believed that they should hold down the student's extremities or elevate them during a seizure in order to reduce the possibility of injury (Alkhama et al., 2012). Some middle school teachers who do not possess adequate knowledge about epilepsy may decide not to help students during seizures, because these teachers fear that they may be held accountable if they make a mistake assisting students during their seizures (Toli et al., 2013).

It is important for middle school teachers to be aware that there are three useful techniques that can assist students who have epilepsy, and they are as follows: (a) effective epilepsy/seizure management, (b) appropriate diagnoses of learning and behavioral difficulties, and (c) psychosocial support (Reilly & Ballantine, 2011). Schools need guidelines readily available for teachers to help them while students are having seizures (Reilly & Ballantine, 2011). These guidelines should include the following: (a) do not place any objects or fingers into the mouth of the student during a seizure, (b) make sure that the area around the student is safe and free of dangerous objects, (c) place a soft object such as a sweater or pillow under the student's head in order to prevent head injury, (d) do not restrain the student during a seizure, (e) make sure clothing around the neck is loose, (f) place student on his/her side when seizure has ceased, (g) note length of seizure and when seizure stopped occurring, and (h) call parents or legal guardian (Reilly & Ballantine, 2011).

For students who have been diagnosed with epilepsy and behavioral issues, appropriate accommodations and interventions need to be implemented (Reilly & Ballentine, 2011). Some students may have issues related to attention span, sleep deprivation caused by seizures that occur at night, and epilepsy medication side effects (Reilly & Ballentine, 2011). Teachers can use interventions such as visual timers or aids that will help keep the attention of students who

have epilepsy (Reilly & Ballentine, 2011). Another intervention may be to allow the student to have a short break in order to help stay focused and to feel refreshed (Reilly & Ballentine, 2011). Teachers can also create a reward system specifically for each student who has epilepsy, which will encourage these students to begin and complete assigned school-work (Reilly & Ballentine, 2011). Additionally, social skills training can assist students with peer interaction. Interventions that promote self-esteem, self-efficacy, and self-confidence are important for all students. In situations where teachers observe students diagnosed with epilepsy experiencing difficulties, the teacher should consider discussing these issues with parents and encourage them to seek the guidance and support of mental health care professionals (Reilly & Ballentine, 2011).

### **Teacher Practice With Epilepsy**

Recent studies suggest that even though teachers are aware of epilepsy and have dealt with students who have epilepsy, the majority of teachers do not feel that they are adequately trained about epilepsy (Mott et al., 2013). Teachers have revealed that they do not feel confident they could properly help students who have epilepsy if they were to have a seizure in the classroom environment (Mott et al., 2013). Mott et al. (2013) found that the majority of elementary school teachers who participated in their study lacked the confidence to help students during a seizure and these same teachers did not feel comfortable teaching students who have epilepsy. Research has also indicated that even though teachers are aware of epilepsy and had students who have epilepsy in their classrooms, they have not been properly trained in the subject area of epilepsy and would not have the skills necessary to help students who have this condition (Mott et al., 2013). In some cases, however, even when teachers have experience and general knowledge about helping students who have epilepsy during a seizure, they believe that proper procedures may not always be beneficial. Mercarelli et al. (2011) found that the middle

school teachers who participated in their research study had knowledge of the appropriate techniques to implement during a seizure; however, the teachers believed that in some cases it might be necessary to apply incorrect procedures in order to effectively deal with epileptic seizures.

Research also indicates that school administrators should offer up-to-date training programs during teacher education days, which includes videos that discuss epilepsy and explain why it is extremely important to implement proper first-aid procedures while helping students during seizures (Toli et al., 2013). Information about why it is imperative to always follow proper first-aid procedures for the well-being and safety of students who have epilepsy should also be included in the video since more and more students who have epilepsy are being mainstreamed into general classroom learning environments (Swiderska et al., 2010). A study conducted by Roberts and Farhana (2010) determined that it is beneficial for school nurses to present first-aid videos discussing epilepsy because they are effective information tools to include during training sessions, especially for individuals such as school administrators, school staff, and teachers, who are anticipated to encounter individuals who have epilepsy at some point during their careers.

Subsequently, a study conducted by Toli et al. (2013) indicated that the role of school nurses is very important in the school environment because they can provide teachers, school administrators, school counselors, students, and parents with accurate and up-to-date information about epilepsy as well as advocating for the psychological health and academic success of all students who have epilepsy. In schools that have a school nurse on staff, there are great advantages for students and educators because the school nurse can help school administrators create an action plan to implement if students with epilepsy have seizures during school hours. A

school nurse can also help to increase the quality of life of students who have epilepsy by creating a plan of action that teachers, school administrators, and school staff can implement during an emergency when caring for students who are having seizures (Toli et al., 2013). A school nurse can also help children who have epilepsy and their families to find effective ways to handle and cope with epilepsy. Apart from scheduling regular visits with their neurologist, students who have epilepsy should attempt to remain current on issues associated with epilepsy, such as learning about new techniques to implement when they are experiencing seizures or new ways that will help them to effectively cope when dealing with the stigma associated with epilepsy (Toli et al., 2013). Accordingly, a school nurse can be a valuable resource for all teachers, regardless of practice level, who deal with students who have epilepsy.

Additionally, recent studies conducted in the area of teacher knowledge and practice revealed that teachers who lacked the training necessary to properly help students who have epilepsy during seizures may cause unintentional harm to these students (Mustapha et al., 2013). Teachers who do not know how to properly help these students may place objects into the students' mouths, hold their students' tongues with their fingers, or attempt to hold these students down during their seizures (Mustapha et al., 2013). Teachers need to be aware that placing foreign objects into the mouths of students who are having seizures may cause students to choke or break their teeth. Teachers who attempt to hold the tongues of students who are having seizures may cause the students to bite their tongues; there is even the possibility that some students may actually bite off pieces of their tongues. These research results attest to the importance of training teachers in the proper procedures to follow when a student with epilepsy is having a seizure (Mustapha et al., 2013). Researchers who conducted a study in Assiut City, Egypt suggested that offering education programs taught by knowledgeable and expert



instructors may help to change the negative perceptions that some teachers hold about epilepsy, and about students who have epilepsy, by educating the teachers on how to properly manage seizures, as well as discussing the causes associated with the disorder (Shehata & Mahran, 2010).

### **Stigma Associated With Epilepsy and Society**

Researchers in northern Ghana noted that the stigma associated with epilepsy may impact society as a whole (Adjei et al., 2013). As stated by Adjei et al. (2013), “Stigma is a complex concept that involves combinations of personal and social beliefs, personal and social attitudes, and the social environment” (p. 316). For many years, epilepsy has been perceived by many people all over the world to be a disease caused by evil (Adjei et al., 2013). The diagnosis of epilepsy often carries with it a great deal of intolerance and social stigma that can negatively impact the personal lives, social lives, and academic careers of school-aged children who have epilepsy. Social discrimination affects many middle school students because they are at the developmental stage where they are learning how to appropriately interact with their peers, their teachers, and other members of society based on societal norms (Thacker, Verma, Ji, Thacker, & Mishra, 2008). Unfortunately, students who have epilepsy may be unaware that some individuals view them as unacceptable members of society.

In addition, de Boer, Mula, and Sander (2008) discussed the stigma associated with epilepsy and also the physical, psychological, social, and economic burdens experienced by students who have been diagnosed with epilepsy, and how these burdens affect their families, their communities, and the general public. Stigma can be characterized by isolation, dismissal, suppression, or devaluation of those who have epilepsy because many members of society tend to negatively judge individuals by their disorder (Adjei et al., 2013). The welfare of the students

who have epilepsy, as well as their entire community, depends upon appropriate education for teachers, so they may in turn properly educate their students about epilepsy.

Moreover, a study conducted by Roberts and Farhana (2010) aimed to determine whether instructional videos discussing epilepsy would help to reduce the stigma associated with epilepsy. Research results indicated that first-aid educational videos could reduce the stigma associated with epilepsy (Roberts & Farhana, 2010). Their research revealed that the video was a valuable tool to implement in order to increase knowledge about epilepsy and to improve individuals' attitudes toward persons who have epilepsy, in three out of the four types of stigma related to epilepsy (Roberts & Farhana, 2010). The four types of epilepsy-related stigma included in their study were negative stereotypes, personal fear and social avoidance, risk and safety concerns, and work and role expectations (Roberts & Farhana, 2010).

Furthermore, the negative stereotypes associated with epilepsy can impact the quality of life of individuals who have this neurological disorder. Unfortunately, these negative stereotypes can lead to discrimination, unfairness, intolerance, and prejudice toward students who have epilepsy because negative stereotypes can cause personal fear and lead to social avoidance of individuals who have epilepsy (Roberts & Farhana, 2010). When members of society do not have sufficient knowledge about epilepsy, they may consciously or unconsciously mistreat individuals who have epilepsy. The stigma surrounding the risk associated with epilepsy and safety concerns can cause panic and apprehension in those who are not educated about epilepsy or familiar with this disorder. These feelings of panic and apprehension can lead to risk aversion tendencies such as shunning or ignoring students who have epilepsy (Roberts & Farhana, 2010). In some cases, students who have epilepsy are viewed as incapable of being able to transition into society when they graduate from high school or college. Some members of society do not

believe that individuals who have epilepsy possess the same work abilities and competencies as individuals who do not have epilepsy. This can have a negative impact on the professional and economic successes of individuals who have epilepsy, their families, and society as a whole because this may lead to individuals with epilepsy believing that they are not capable of becoming productive members of society (Roberts & Farhana, 2010).

Educating teachers can be effective in reducing the misconceptions associated with epilepsy because they are in a prime position to educate their students, which may in turn help to reduce the stigmatization associated with epilepsy in the classroom. Research has suggested that educating young students about epilepsy may help to bring epilepsy out of the shadows (Bandstra, Camfield, & Camfield, 2008). A study by Bandstra et al. (2008) found that individuals who have epilepsy reported experiencing feelings of isolation and shame because of their diagnosis. Unfortunately, it is not uncommon for many people with epilepsy to encounter negative situations associated with stigma even though their seizures are controlled with the help of their specialist (Bandstra et al., 2008). It is important to provide educators, parents, students, and the general public with an opportunity to attend educational programs pertaining to epilepsy, in order to eliminate or decrease the stigma associated with epilepsy (Jacoby, 2008). Many students who have epilepsy around the world might be at risk of experiencing a lower quality of life because of the stigma associated with epilepsy and with seizures (Jacoby, 2008).

Research conducted by Lee et al. (2011) revealed that the quality of life experienced by students who have epilepsy can be greatly impacted by the stigma associated with the disorder. Lee et al. (2011) also discovered that students who have epilepsy, regardless of whether they reside in developed or developing countries, encounter situations where they believe that they are being stigmatized because of their disorder. A study conducted in the developing country of

Ghana, found that students who had epilepsy experienced discrimination and stigmatization on a regular basis because the members of their communities believed that they were demon possessed and very dangerous individuals (Adjei et al., 2013). In another study conducted in the developed country of Taiwan, research indicated that some students who have epilepsy hold a negative viewpoint of epilepsy and of individuals who have epilepsy (Chen et al., 2010). To increase the likelihood that students who have epilepsy develop confidence and effective coping skills, it is important to teach school-aged students how to ascertain which information is incorrect about epilepsy and which information is correct, in order to ensure that they develop positive attitudes toward epilepsy (Chen et al., 2010). Developing a positive attitude toward epilepsy through proper interventions and training programs will help to encourage students who do not have epilepsy to become more accepting of the differences between themselves and those who have epilepsy (Chen et al., 2010). Also, developing a positive attitude toward epilepsy will decrease the stigma associated with the disorder.

**Enacted and perceived stigma.** Two main forms of stigma that students who have epilepsy may encounter are enacted stigma and perceived stigma (Adjei et al., 2013). The first form, enacted stigma, occurs when students who have epilepsy are discriminated against because members of society are afraid or do not feel comfortable associating them (Adjei et al., 2013). Enacted stigma is usually overt in nature, such as discriminatory actions, teasing, and bullying of students who have epilepsy by their peers (Adjei et al., 2013). School bullying is an international phenomenon that occurs in all grade levels, reaching the highest point in elementary school and declining as students mature with age (Hamiwka et al., 2009). Even though childhood epilepsy is considered to be a common neurological disorder, in comparison with other chronic neurological disorders, there is a higher probability that students with epilepsy will frequently experience

bullying by their peers and other members of society (Hamiwka et al., 2009). In a study by Ibekwe et al. (2007), students diagnosed with epilepsy had higher rates of absenteeism when compared to students who did not have epilepsy, due to bullying related to the disorder.

The second form, perceived stigma, occurs when students with epilepsy experience feelings of anxiety, embarrassment, and apprehension because of anticipated discrimination or prejudice toward them (Adjei et al., 2013). In some cases, perceived stigma is present when there is no evidence of enacted stigma occurring. Students who are sensitive about their disorder may perceive that the actions of other students are occurring because of their diagnosis of epilepsy (Adjei et al., 2013). For example, they may assume that the laughter of their peers is being directed toward them, when in fact their peers may be laughing at something entirely unrelated to them. Students who are not insecure about their disorder will not perceive the laughter of their peers as being directed toward them and may opt to join in on the fun, which will improve their mental and social well-being because they are interacting with their peers (Adjei et al., 2013).

When compared to enacted stigma, perceived stigma had a higher risk of causing behavioral problems, social problems, and learning problems for students who have epilepsy (Adjei et al., 2013). It is not uncommon for students who have epilepsy to choose not to disclose their diagnosis to their teachers or peers. In many cases, this may be due to shame or embarrassment (Adjei et al., 2013). Students who have epilepsy may decide to implement a stringent non-disclosure strategy because they fear that the stigma associated with epilepsy will cause others to discriminate against them (Bandstra et al., 2008).

Furthermore, there are three levels of perception that may impact the quality of life in students who have epilepsy, and they are (a) self-perception, (b) family perception, and (c) societal perception (Räty & Wilde-Larsson, 2011). First, self-perception can either be negative or

positive. Students who have a positive outlook with regard to their epilepsy are more likely to succeed academically and professionally and to become productive members of society. These individuals do not let the diagnoses of epilepsy define who they are as people but rather they succeed in spite of their disorder (Räty & Wilde-Larsson, 2011). Students who hold negative attitudes toward their epilepsy are at a greater risk of becoming depressed, frustrated, and angry because they believe that their failures are solely related to their epilepsy. It is not uncommon for students to feel discouraged when they possess this viewpoint because they are mainly focused on their weak areas and not on areas in which they excel (Räty & Wilde-Larsson, 2011). Students who have epilepsy and who focus on their weak areas will eventually succumb to feelings of aggravation and resentment, resulting in unhappiness because they continually encounter difficult challenges and experience self-doubt since they seldom receive positive feedback from their teachers, peers, or parents (Räty & Wilde-Larsson, 2011).

Second, families who possess a negative perception can have a traumatic effect on students who have epilepsy. When students who have epilepsy do not have the support of their families, they are at a higher risk of developing low self-esteem and feelings of low self-worth, depression, and anger (Räty & Wilde-Larsson, 2011). It is not uncommon for these students to also develop negative attitudes toward epilepsy and toward other people who have epilepsy, especially when their family members or those of importance to them possess this viewpoint. Students who belong to families who hold a positive perception of epilepsy and who are supportive are more apt to succeed and flourish in all areas of their lives (Räty & Wilde-Larsson, 2011).

Finally, society's perception of epilepsy can impact students who have epilepsy (Räty & Wilde-Larsson, 2011). When society holds a negative attitude toward epilepsy, it can cause

students who have epilepsy to hide their epilepsy because they are afraid that they will be stigmatized and treated unfairly by their peers, their teachers, and the public. When society's perception toward epilepsy is negative, students who have epilepsy can develop feelings of inferiority, inadequacy, depression, low self-esteem, and low self-efficacy (Räty & Wilde-Larsson, 2011). When society takes a positive stance on epilepsy, students who have this disorder are more apt to disclose that they have epilepsy and implement effective coping techniques that will help them to succeed academically and in society (Räty & Wilde-Larsson, 2011).

Consequently, the stigma associated with epilepsy may cause the parents of students who have epilepsy to hide their children's disorder because it is believed that it will bring shame to the family (Mecarelli et al., 2011). The stigma associated with epilepsy can often overwhelm and cause stress within the families of children who have epilepsy because of the negative viewpoint held by the general population in any given society (Räty & Wilde-Larsson, 2011). Some parents are reluctant to reveal to teachers that their children have epilepsy because they are afraid that their children will experience the secondary effects associated with epilepsy, such as bullying, which will have a negative impact on their children's academic career and social acceptance (Mecarelli et al., 2011).

Correspondingly, a research study conducted in Taiwan revealed that primary school children who participated in the study preferred to keep their diagnosis of epilepsy a secret, in order to avoid being ridiculed, teased, isolated, and/or rejected by their teachers, their peers and their community (Chen et al., 2010). The students in the study also revealed that many of their teachers did not allow them to participate in some classroom activities or group exercises, which made these students feel embarrassed, excluded, and isolated (Chen et al., 2010). These reactions

to epilepsy tend to add to the stigma associated with this disorder and may force students who have epilepsy to hide their disorder; unfortunately, hiding their disorder from their teachers can be detrimental to attempts to decrease the stigma associated with epilepsy (Adjei et al., 2013).

It is important for school teachers to become educated in the area of epilepsy in order to decrease the likelihood of placing these students at an academic or social disadvantage. Some students who have epilepsy are more likely to be placed into special education programs by their teachers, when in actuality they do not need these services (Chen et al., 2010). In situations where students who have epilepsy cannot participate in general classroom activities and group exercises, teachers need to create effective alternatives to test these students' academic achievements and discover techniques that will help them to reach their academic goals without stigmatization (Chen et al., 2010).

Furthermore, teachers need to be aware of the impact of terminology and use more positive terms about the condition (Fernandes et al., 2009). Researchers have suggested that teachers who refer to their students as “having epilepsy,” as opposed to referring to their students as “epileptic,” may decrease the likelihood that the students will experience the stigma associated with epilepsy (Fernandes et al., 2009). Research results have revealed that the label *epileptic* carries a negative connotation. The proper terminology should be *persons with epilepsy* because the label *epileptic* can prompt teachers and students to form a negative perception of students who have epilepsy and their academic capabilities (Fernandes et al., 2009). In some cases, students who are considered to be disabled or labeled with a disorder might be in jeopardy of receiving a lower quality education when teachers' perceptions of their students' disorders are inaccurate (Katzenstein, Fastenau, Dunn, & Austin, 2007).



It is important for teachers to be aware that labels such as *epileptic* can add to the psychosocial tribulations experienced by students who have epilepsy, such as academic difficulties, psychological difficulties, and problems dealing with others in society (Mott et al., 2013). These labels can mask the true identities of students who have epilepsy (Fernandes et al., 2009). Teachers also need to be aware that labels such as *epileptic* can impact the perceptions of those who have epilepsy (Fernandes et al., 2009; Katzenstein et al., 2007).

Some students who are labeled *epileptic* are at risk of having their teachers focus primarily on the disorder itself and not their students' actual abilities, capabilities, and personality (Fernandes et al., 2009). It is difficult to comprehend that in contemporary society some individuals still hold the belief that students with epilepsy are not as academically capable as other students who do not have epilepsy (Lim et al., 2013). It is discouraging that this common neurological disorder still bears any degree of social stigma (Bandstra et al., 2008). Labeling students as *epileptic* may prevent teachers from providing these students with the extra help needed to succeed academically (Katzenstein et al., 2007). Teachers who possess a negative perception or an incorrect perception of epilepsy are more apt to hinder the academic successes of those who have epilepsy because these teachers believe that students with epilepsy are not capable of achieving certain goals, participating in certain activities, and keeping up academically with their peers (Chen et al., 2010; Katzenstein et al., 2007). The negative perceptions about epilepsy held by teachers can be very discouraging and disheartening for students who have epilepsy, and these students may eventually adopt the viewpoint of their teachers as their own and succumb to the negative stigma associated with epilepsy (Katzenstein et al., 2007).

Teachers who focus mainly on the individual characteristics, abilities, and talents of students who have epilepsy are in a primary position to help those students achieve their academic goals regardless of having epilepsy (Eyong et al., 2012). Teachers need to be aware that being diagnosed with epilepsy need not be viewed as negative, but as something that may need to be addressed from time to time during the school year when a student experiences a seizure (Eyong et al., 2012). Teachers need to inform all of their students that being diagnosed with epilepsy does not render an individual incapable of succeeding academically (Eyong et al., 2012). Students with epilepsy need encouragement from their teachers to participate in all classroom activities, to set obtainable academic goals, and to socialize with their peers. Students diagnosed with epilepsy should be told by their teachers that they are as capable and competent as students who do not have epilepsy (Eyong et al., 2012). It is important for teachers to remember that epilepsy does not define a student but that it is only a medical diagnostic term used to describe the disorder (Fernandes et al., 2009).

### **Summary**

Researchers have found that epilepsy training programs for students who have epilepsy have a positive impact on the academic, social, and personal lives of those students (Jantzen et al., 2009). Epilepsy training programs help to bring epilepsy out of the shadows, which in turn decreases the stigma associated with this disorder. Providing students, parents, and teachers with up-to-date information about epilepsy is a key factor in decreasing the stigma associated with epilepsy. Studies indicate there is a need for school teachers to attend training programs that provide them with information about epilepsy and how to effectively teach students who have this condition. Teacher attitude, knowledge, and practice with epilepsy have an impact on the academic achievement of students with this diagnosis.

To date, studies have not demonstrated whether middle school teacher education programs improve teacher attitude toward epilepsy, teacher knowledge about epilepsy, or teacher practice with epilepsy. Also, studies have not demonstrated how teacher training programs related to epilepsy impact the stigma associated with the disorder. This is the gap in the literature and research base that this study attempted to address: how teacher attitude, knowledge, and practice with epilepsy, impacts the academic achievement of middle school students in New Brunswick, Canada who have epilepsy. This study also attempted to discover the level of confidence that middle school teachers, in the Anglophone West School District, had when teaching and caring for students who had epilepsy.

It is important to determine the confidence levels of teachers because they are the primary caregivers of their students during school hours. Students could be negatively impacted if their teachers are not confident that they can properly teach or care for students who have epilepsy during their seizures. Research in the area of teacher confidence with epilepsy is imperative for the safety of all students. As noted by Wodrich et al. (2011), “More rigorous experimental studies that provide teachers with facts then measure changes in confidence are needed to confirm a cause-and-effect relationship” (p. 364).

### **CHAPTER THREE: METHODS**

The purpose of this phenomenological study was to discover how teacher attitude, knowledge, and practice with epilepsy impact the academic achievement of middle school students who have epilepsy in New Brunswick, Canada. For the study, stigma was generally defined as the negative perceptions about epilepsy held by middle school teachers. Chapter 3 begins with an overview, then includes a brief description of the research design used in this study. The chapter also provides a list of the research questions formulated for this study; describes the participants, setting, procedures, and the researcher's role in the study; explains the data collection process using interviews, focus group, and surveys, and the data analysis techniques implemented in this study; and discusses trustworthiness issues and ethical considerations.

#### **Research Design**

This study used a phenomenological approach to investigate teachers' perceptions of epilepsy and its impact on student achievement. "A phenomenological study describes the common meaning for several individuals of their lived experiences of a concept or a phenomenon" (Creswell, 2013, p. 57). Furthermore, this study used Edmund Husserl's bracketing approach that requires researchers to become aware of and to put aside their own personal thoughts and feelings about the phenomenon being studied, in order to ensure that the results would not be jeopardized by their past experiences (Creswell, 2013). This qualitative study used the phenomenological approach to allow participants to discuss their opinions, beliefs, and experiences dealing with students who have epilepsy. The stigma associated with epilepsy in this study was generally defined as the negative perceptions about epilepsy held by middle school teachers. Using a phenomenological approach was valid because it facilitated a

confidential, face-to-face interview with each participant, and it allowed participants to complete surveys. This phenomenological study also allowed selected participants to attend a focus group to discuss their personal feelings and opinions about epilepsy, as well as discuss their perceptions of the academic capabilities of students who have epilepsy. It was appropriate to use a phenomenological study because it “shows” what each of the participants experienced in relation to epilepsy, and “how” they experienced it during their careers as teachers (Moustakas, 1994, as cited in Creswell, 2013). Focusing on each participant's attitude, knowledge, and practice with epilepsy will help to generate a universal description of epilepsy (Creswell, 2013).

### **Research Questions**

Recent research studies conducted in countries other than Canada, such as Egypt, Greece, and the United States, have revealed that teacher attitude, knowledge, and practice with epilepsy impact the academic success of students who have epilepsy in those countries (Shehata & Mahran, 2010; Toli et al., 2013; Wodrich et al., 2011). The following research questions were formulated to discover how teachers' perceptions of epilepsy will also impact the academic achievement of students who have epilepsy in Canadian schools.

The phenomenological study has been guided by the following research questions:

**RQ1.** How do teacher attitudes toward epilepsy impact their perception of academic ability of students who have been diagnosed with epilepsy?

**RQ2.** How does teacher knowledge about epilepsy impact their perception of the academic ability of students who have been diagnosed with epilepsy?

**RQ3.** How does teacher practice with epilepsy impact their perception of the academic ability of students who have been diagnosed with epilepsy?

### **Setting**

This study was conducted in the Anglophone West School District located in New Brunswick, Canada. The Anglophone West School District includes the Fredericton, Oromocto, Woodstock, and Edmundston regions, as well as 13 sub-districts. The Anglophone West School District includes rural and urban schools. The middle schools in the Anglophone West School District adhered to the laws of the District School Board of New Brunswick, Canada, regarding inclusion in the classroom. The majority of teachers in the Anglophone West School District were female and were aware of epilepsy.

### **Participants**

Six middle school teachers participated in the study. The middle school teachers were purposively selected from teachers who are aware of epilepsy. Purposive samples enable researchers to “. . . select individuals and sites for study because they can purposefully inform an understanding of the research problem and central phenomenon in the study” (Creswell, 2013, p. 177). This study used a purposive sample of secondary school teachers who have volunteered to participate in research studies conducted in their school districts. A purposive sample was appropriate for the proposed study because it ensured that all teacher participants were aware of epilepsy. The purposive sample will be selected from teachers who are currently teaching in a middle school in New Brunswick, Canada. The purposive sample consisted of males and females. The purposive sample consisted of teachers who have taught middle school students.

### **Procedures**

This phenomenological study began after Institutional Review Board (IRB) approval had been obtained. After IRB approval, participants were purposively selected from a volunteer sample consisting of middle school teachers who taught in New Brunswick, Canada, and who

were aware of epilepsy. Each participant was asked to complete a consent form before participating (see Appendix A). Data were collected using the following methods: interviews, surveys, and focus group. The data were analyzed using (a) bracketing, (b) a simplified version of the phenomenological analysis created by Moustakas (as cited in Creswell, 2013), and (c) memo writing techniques. The study's trustworthiness was verified by implementing (a) peer debriefing, (b) triangulation of data, and (c) member checking techniques. Ethical issues were addressed by following the IRB's ethical guidelines. The identities of all participants were concealed using pseudonyms to protect both their identities and the study location. All information obtained throughout the study was placed in a safe and secure location where only individuals involved in the research study were able to access the data.

### **Researcher's Role/Personal Biography**

I am perfectly suited to be the human instrument for this research study because I have firsthand experience with epilepsy. As an individual who has epilepsy, I have encountered and continue to encounter, in my academic career as well as in my professional career, the many challenges associated with the stigma of epilepsy. As an individual who bases her decisions on a Christian paradigm, I believe that God has chosen me to expand upon previous research in order to help others who have encountered or will encounter these same challenges. I am very excited to begin conducting research in the area of epilepsy because I know that God will guide me throughout the process.

My educational background includes a bachelor degree in psychology from the University of New Brunswick, and a master degree in counseling psychology from Yorkville University. After graduation, I was a family counselor for a private Christian organization for 2 years, and it was during this time that I made the decision to return to university to study for a

doctorate of education in curriculum and instruction. I have been a board member for the Learning Disabilities Association, Saint John Chapter, for the past 7 years. In the future, I plan to advocate for students who have epilepsy by encouraging all school districts to require that every teacher be trained in the area of epilepsy, in an attempt to decrease and eventually eliminate the stigma that is associated with epilepsy.

The assumptions that I bring to this study are that (a) I believe the stigma associated with epilepsy has a negative impact on the academic achievement of students who have epilepsy, (b) I believe that teacher attitude, knowledge, and practice with epilepsy can impact the academic achievement of students who have epilepsy, and (c) I believe that teacher training programs about epilepsy can decrease or eliminate the stigma associated with epilepsy.

### **Data Collection**

Data triangulation was used to ensure confidence that the data collected were valid. Triangulation is a process that implements “. . . multiple data-collection methods, data sources, analysts, or theories as corroborative evidence for the validity of qualitative research findings” (Gall, Gall, & Borg, 2007, p. 657). The study implemented the following data collection methods and each method was used in the order that it appears in the follow paragraphs: 1) interviews, 2) surveys, and 3) focus group. Interviews were implemented first in order to build a rapport with the participants and provide them with an opportunity to meet the researcher in person, to ask questions and address any issues or concerns that they had about the study. The survey was given to each participant following the face-to-face interview. This enabled participants to read the survey instructions and ask the researcher any questions before they completed the surveys. The focus group was scheduled after each participant had a face-to-face interview and completed



both surveys because information obtained from the interviews and surveys helped to reveal areas that needed to be addressed during the focus group meeting.

## **Interviews**

Six teachers were interviewed separately using a confidential online meeting room. Semi-structured online face-to-face interviews were conducted with each of the six teachers during school hours at a predetermined time, and each online interview was approximately 40 minutes in length. The semi-structured online face-to-face “interviews consist of oral questions asked by the interviewer and oral responses by the research participants” (Gall et al., 2007, p. 228). “The semistructured interview involves asking a series of structured questions and then probing more deeply with open-ended questions to obtain additional information” (Gall et al., 2007, p. 246). The online face-to-face interview consisted of 11 open-ended questions that related to teacher attitude, knowledge, and practice with epilepsy (see Appendix B). The semi-structured online face-to-face interview questions were created to obtain information pertaining to all three research questions addressed in this study. Each of the teachers was interviewed using the online face-to-face method in order to obtain in-depth information about their experiences and perceptions regarding the phenomenon being studied. The online interview enabled the teachers to reveal their true feelings and beliefs about epilepsy and about how they view the capabilities of children who have epilepsy. Because each online interview was audio recorded, written consent was obtained from each participant. Each online face-to-face interview was recorded using an electronic recording program and the information collected was backed up using an USB flash drive. When necessary, hand written notes were taken during the online interview.

After receiving IRB approval, but prior to conducting the online interviews with teacher participants, the open-ended questions were piloted during the fall of 2014. For the pilot, six

New Brunswick school teachers who were familiar with epilepsy were contacted via email or Facebook and asked to complete an electronic version of the open-ended questions. The pilot participants were asked to email their responses to me within 3 days of receiving the email containing the pilot questions. Teachers who completed the pilot questions were not eligible to participate in the actual study. All information obtained during the pilot will remain confidential and will be treated in the same manner as information obtained during the actual study.

### **Surveys**

All six of the middle school teachers participating in the study were asked to complete two surveys. Surveys were used “. . . to supplement data that have been collected by other methods” (Gall et al., 2007, p. 244) during the study. Many researchers use surveys to supplement other forms of data collection, such as questionnaires and focus groups, to ensure validity (Frizzell et al., 2011; Gzirizhvili et al., 2013). One of the surveys that the middle school teachers were asked to complete during this study was the Attitudes Toward Persons with Epilepsy (ATPE) survey, which focused on their attitudes and knowledge about epilepsy (Antonak & Livneh, 1988). “The ATPE (Form S) is a summated rating scale developed to be a contemporary, brief, easily administered and scored, psychometrically sound instrument for measurement of both attitudes toward persons with epilepsy and knowledge about epilepsy” (Bishop & Boag, 2006, p. 398). The ATPE survey is a reliable and valid measure. It was validated in 1982 and again in 1990 (Bohac & Wodrich, 2013). “Internal consistency estimates of the ATPE subscale appeared adequate as evidenced by item-total correlations and shared variance” (Bohac & Wodrich, 2013, p. 5). Therefore, the ATPE survey was a relevant measure to implement in the study because it accurately measured teachers' attitudes toward epilepsy in middle schools in New Brunswick, Canada.

The other survey that each of the middle school teachers was asked to complete was the Teacher Epilepsy Knowledge and Confidence Survey (TEKCS). The TEKCS focuses on teacher knowledge about epilepsy and their confidence dealing with students who have epilepsy (Wodrich et al., 2011). The “. . . TEKCS contains two subscales: Knowledge and Confidence” (Wodrich et al., 2011, p. 361). The Knowledge subscale consists of 25 multiple-choice questions, and the Confidence subscale consists of 14 questions utilizing a 5-point Likert-type scale (Wodrich et al., 2011). “A Likert scale asks individuals to rate their level of agreement (e.g., strongly agree, agree, undecided, disagree, or strongly disagree) with various statements” (Gall et al., 2007, p. 220).

Researchers have determined that the TEKCS is a reliable and valid measure. Wodrich et al. (2011) addressed the psychometric validity and discovered that the Knowledge subscale “coefficient  $\alpha$  was computed to be 0.82” (p. 362). They also discovered that the Confidence subscale coefficient  $\alpha$  was 0.91 (Wodrich et al., 2011). These alpha scores indicate that both subscales are reliable (Wodrich et al., 2011). The TEKCS survey was relevant for the study because it was used to measure teachers' confidence level of teaching students who have epilepsy as well as helping students who have epilepsy during seizures.

Each participant was sent a copy of both surveys via email. Participants were asked to complete both surveys before they attended the face-to-face interview. The completed ATPE survey and the TEKCS survey were sent back to me via email. I sent a request to obtain a copy of the ATPE survey and the TEKCS survey from the publishers when my prospectus was approved. Data obtained through the completion of the ATPE survey and the TEKCS were used to answer Research Question 1 (RQ1) and Research Question 2 (RQ2) of this study.

## **Focus Group**

Six teachers were also randomly selected to attend a focus group meeting to discuss their opinions, beliefs, and viewpoints about epilepsy and the academic capabilities of students who have epilepsy. The focus group session consisted of 11 open-ended questions that were related to teacher attitude, knowledge, and practice with epilepsy (see Appendix B).

A focus group consists of participants who are taking part in the research study (Gall et al., 2007). Focus groups are used by researchers because “. . . the interactions among the participants stimulate them to state feelings, perceptions, and beliefs that they would not express if interviewed individually” (Gall et al., 2007, p. 254). The focus group session took place during school hours, and it was approximately 60 minutes in length. The focus group session was conducted in a private online meeting room that allowed audio recording (Creswell, 2013). The focus group session was used to obtain information pertaining to all three of the research questions being addressed in this study.

## **Data Analysis**

The data analysis techniques implemented during the study were (a) bracketing, (b) phenomenological analysis based on the Stevick-Colaizzi-Keen method, and (c) memo writing.

## **Bracketing**

The first data analysis technique used was bracketing. During bracketing, “investigators set aside their experiences, as much as possible, to take a fresh perspective toward the phenomenon under examination” (Moustakas, as cited in Creswell, 2013, p. 101). As a person with epilepsy, bracketing was used during the coding process in order to decrease the likelihood that I would jeopardize the research study by interjecting my personal negative experiences with

middle school teachers who were not properly educated in teaching students who have epilepsy, nor properly trained to help students who have epilepsy during and after their seizures.

### **Phenomenological Analysis**

The second data analysis technique used was “. . . a simplified version of the Stevick-Colaizzi-Keen method” (Moustakas, as cited by Creswell, 2013, p. 214). This approach included six steps that were followed during this study. During the first step, the study participants' personal experiences with epilepsy were documented (Creswell, 2013). During the second step, a list of prominent statements was recorded (Creswell, 2013). During the third step, the list of prominent statements was grouped into themes (Creswell, 2013). During the fourth step, a description of the experiences that each participant had encountered associated with epilepsy was written (Creswell, 2013). During the fifth step, a description of “how” each experience occurred was written (Creswell, 2013). During the sixth and final step, a summary was written to describe to “. . . the reader 'what' the participants experienced with the phenomenon and 'how' they experienced it” (Creswell, 2013, p. 215). This technique was relevant to my study because it helped me to code the answers obtained from the interview questions, the survey, and the focus group. Once data were coded and summarized, it enabled me to confirm with the participants that I had correctly deciphered the information obtained from them.

### **Memo Writing**

The third data analysis technique used was memo writing. Memo writing is a “. . . process in which the researcher writes down ideas about the evolving theory throughout the process of open, axial, and selective coding” (Creswell, 2013, p. 110). Memo writing was used to keep track of any discoveries, ideas, insights, or thoughts that occurred during the research process.

## **Trustworthiness**

It is important for qualitative researchers to ensure trustworthiness in their studies (Cao, 2007). In qualitative research, trustworthiness refers to the value or quality associated with research results (Cao, 2007). The following four aspects of trustworthiness were addressed during this study: (a) transferability, (b) confirmability, (c) credibility, and (d) dependability.

### **Transferability**

Transferability is “. . . the applicability of the research findings to another setting or group” (Cao, 2007, p. 443). Transferability of this study will allow future researchers to apply the results to studies that take place in other provinces within Canada, and with students who are in either elementary school or high school. To ensure transferability, participants were asked to confirm that their responses to interview questions and surveys were properly transcribed and understood. Also, focus group participants were asked to read a copy of the transcribed meeting in order to ensure that their spoken contributions were correctly interpreted and recorded.

### **Confirmability**

Confirmability occurs when research results are “. . . reflective of the inquiry and not the researcher's biases” (Cao, 2007, p. 443). It was imperative for the validity of the study results that I, the researcher, became aware of my own thoughts, beliefs, and biases. When researchers are aware of their own biases, it decreases the likelihood that their preconceived ideas will influence or impact their study results. Researcher bias can have a negative impact on research results, which verifies the importance of collaborating with other professionals to ensure that researcher bias does not occur (Cao, 2007; Creswell, 2013). In order to ensure confirmability in this study, I collaborated with other local professionals who specialized in epilepsy and who worked with students who lived in the maritime provinces of Canada.

## **Credibility**

Credibility of a study refers to “. . . the truthfulness of particular findings” (Cao, 2007, p. 443). To ensure that research results are credible or truthful, researchers should confirm the results with their participants and other professionals (Cao, 2007; Creswell, 2013). Credibility can also be obtained by providing participants with copies of the transcribed versions of verbal information collected during the study. In order to obtain credibility during this study, I asked participants to review the transcriptions of their answers and confirm that I accurately interpreted and recorded their responses. I also encouraged participants to inform me of any corrections that needed to be made to the transcriptions (see Appendix E).

## **Dependability**

Dependability of a study is achieved when research results are consistent and can be easily reproduced (Cao, 2007). It is important to maintain dependability by implementing techniques that will ensure that data collected has been correctly decoded and recorded throughout the study. Triangulation of data and audit trail techniques were implemented to ensure dependability. Researchers should attempt to obtain transferability, confirmability, credibility, and dependability by applying appropriate strategies or techniques. Four techniques implemented to achieve trustworthiness during this study were (a) peer debriefing, (b) triangulation of data, (c) member checking, and (d) audit trail.

**Peer debriefing.** Peer debriefing “. . . provides an external check of the research process” (Ely et al., 1991; Erlandson et al., 1993; Glesne & Peshkin, 1992; Lincoln & Guba, 1985; Merriam, 1988, all as cited in Creswell, 2013, p. 272). “The reviewer may be a peer, and both the peer and the researcher keep written accounts of the sessions, called ‘peer debriefing sessions’” (Lincoln & Guba, as cited in Creswell, 2013, p. 272). In the present study, peer

debriefing was done in order to ensure that different perceptions and viewpoints at the professional level were considered that addressed credibility issues. In the current study, I occasionally contacted a local professional who specialized in epilepsy. Collaborating with this individual ensured that my personal beliefs, experiences, and perceptions of epilepsy did not influence the results of the study.

**Triangulation of data.** In triangulation of data, “. . . researchers make use of multiple and different sources, methods, investigators, and theories to provide corroborating evidence” (Ely et al., 1991; Erlandson et al., 1993; Glesne & Peshkin, 1992; Lincoln & Guba, 1985; Merriam, 1988; Miles & Huberman, 1994; Patton, 1980, 1990, all as cited in Creswell, 2013, p. 272). In this study, triangulation of data was used to ensure that all of the pertinent information obtained from the participants had been successfully gathered throughout the research process. Use of the triangulation of data method addressed dependability issues associated with the proposed study questions. In this study, data were triangulated using face-to-face interviews, surveys, and a focus group.

**Member checking.** During “member checking, the researcher solicits participants' views of the credibility of the findings and interpretations” (Ely et al., 1991; Erlandson et al., 1993; Glesne & Peshkin, 1992; Lincoln & Guba, 1985; Merriam, 1988; Miles & Huberman, 1994, all as cited in Creswell, 2013, p. 273). Lincoln and Guba believed that member checking is the most important technique to implement when addressing credibility (Lincoln & Guba, 1985, as cited in Creswell, 2013). In this study, member checking was used to confirm that the themes identified by me throughout the interview process were correct. Each of the participants was asked to review the themes with the researcher and provide the researcher with feedback. As the researcher, I also read the written transcripts of the interviews “several times to obtain an overall



feeling for them” (Creswell, 2013, p. 353). Member checking helped to ensure that the answers to the research questions had been correctly coded and transcribed during the proposed study, which addressed confirmability, transferability, and credibility issues (Creswell, 2013).

**Audit trail.** Dependability of the study was achieved by implementing an audit trail. An audit trail was executed to accurately maintain all of the information obtained throughout the research process. An audit trail is “. . . the process of documenting the materials and procedures used in each phase of the study” (Gall et al., 2007, p. 633). The audit trail in this study contained transcription notes of the face-to-face interviews and focus group, a list of coding and recording techniques implemented, and methods used to arrange the information gathered throughout the interview process (Creswell, 2013). The audit trail also contained a record of dates and times scheduled for meetings with participants. The audit trail included a detailed description of how the face-to-face interviews were conducted, as well as describing how and when surveys were completed. The audit trail also included a detailed outline of the agenda that was followed during the focus group meeting.

### **Ethical Considerations**

I protected the identities of each participant by implementing methods that concealed the identities of each participant, such as using pseudonyms to protect the identities of the participants. “A researcher protects the anonymity of the informants, for example, by assigning numbers of aliases to individuals” (Creswell, 2013, p. 195). I have kept all information related to the study in a safe and secure place where no one other than the individuals involved in the research study has been able to gain access to it.

I applied for the approval of the Institutional Review Board (IRB) before I collected any data for my research study (see Appendix C). The IRB “is a group of individuals who are

authorized by an institution to determine whether research studies by colleagues affiliated with the institutions comply with institutional regulations, professional standards of conduct and practice. . .” (Gall et al., 2007, p.78). Most importantly, it was vital that I complied with “. . . the human subjects provisions of the Code of Federal Regulations for the Protection of Human Subjects. . .” (Gall et al., 2007, p. 78). After receiving IRB approval, I proceeded to gain approval from the district school board where I wanted to conduct the study (see Appendix D).

### **Summary**

It is important to provide readers with a detailed outline of procedures in order to understand the beginning, the middle, and the end of the study. Chapter 3 clearly demonstrates the necessity to conduct a research review on a topic before formulating research questions. In this study, it was vital to discover the gap in literature before proceeding with the research study. During this study, it was important to create a detailed research plan in order to gain approval from the appropriate review boards and committees. Chapter 3 provided a thorough description of how data were collected and analyzed. The chapter discussed the importance of using trustworthiness techniques to ensure that the study yielded valuable or quality results, and the importance of following ethical guidelines. In order to ensure confidentiality, it was imperative to conceal the identities and locations of the study participants.

## **CHAPTER FOUR: FINDINGS**

The purpose of this phenomenological study was to discover how teacher attitude, knowledge, and practice with epilepsy impact the academic achievement of middle school students who have epilepsy in New Brunswick, Canada. A phenomenological study affords participants an opportunity to openly discuss their lived experiences of dealing with students who have epilepsy. As indicated by Creswell (2013), “. . . a phenomenological study describes the common meaning for several individuals of their lived experiences of a concept or a phenomenon” (p. 97). The one-on-one interviews conducted during the study and the focus group enabled all participants to reveal their personal attitudes toward epilepsy, their knowledge about epilepsy, and their practice with epilepsy.

Chapter 3 of this study discussed procedural methods implemented during the study. Chapter 4 presented the data analysis findings of the face-to-face interviews, the focus group session, and the two surveys. All six of the participants attended an online face-to-face interview. Four participants attended the online focus group session in its entirety, but because of a teachers' meeting, two of these participants were not able to join the session until later. Five out of the six participants completed the two surveys. In Chapter 4, a background of the participants, as well as a discussion of the themes as they relate to the research questions, has also been included.

### **Participants**

Six individuals participated in the present study. One participant was male, and five participants were female. All participants were English-speaking middle school teachers who taught in the Anglophone West School District. All six of the participants were aware of epilepsy.

**Dean**

Dean is a school teacher with a master's degree in educational psychology. He has also completed some psychometric work in the past. Dean was intrigued by the research topic and decided to participate in the study in order to learn more about epilepsy. Dean acknowledged that “I was thinking I really do not know a lot about that.” In his role as a teacher, he did not have any experience teaching students with epilepsy, and for this reason he did not know how epilepsy impacts academic achievement in students who have epilepsy. As stated by Dean, “I am not really sure how epilepsy does impact a student's learning” (personal communication, March 09, 2015).

**Alberta**

Alberta is a seasoned school teacher who does not have formal training in helping students during a seizure. Years ago, she did experience a situation where a student needed help during a seizure, and with the assistance of another teacher she was able to effectively help that student. Alberta has only encountered that type of situation once in her career, but she believes that students who have epilepsy should be in the classroom with other students. As stated by Alberta, “I believe that individuals who have epilepsy should be immersed in regular education classrooms” (personal communication, March 11, 2015).

**Elizabeth**

Elizabeth has been teaching for approximately twenty years, and she is also a resource teacher. Despite her years of experience, in her role as a school teacher, she has not taught any students who have epilepsy and has not received any formal instruction. Elizabeth stated that she has “not personally had any training in that area” (personal communication, March 13, 2015). In her role as a resource teacher, she has also not encountered any students who have epilepsy.

Elizabeth mentioned that if she did have students who had epilepsy in her classroom it would be important to ask parents for “. . . pertinent information about medications, or how to treat students if they had a seizure, and how to help students until help arrives” (personal communication, March 13, 2015).

### **Reba**

Reba is an experienced teacher and resource teacher. She has a background in teaching and helping students who have epilepsy. She has professional experience as well as personal experience dealing with individuals who have epilepsy. She feels very comfortable having students who have epilepsy in her classroom and is confident that she can properly help them during seizures. When Reba was asked how she felt about having students who have epilepsy in her classroom, she stated that she “was not afraid” (personal communication, March 12, 2015) to have them. Reba believed that students who have epilepsy will be as successful academically as those who do not have the condition, and that it does not have any impact on their academic goals. As stated by Reba, “. . . it doesn't. It is a medical condition, like any other medical condition. I mean we just go on, we move on. It does not impact them academically” (personal communication, March 12, 2015).

### **Marie**

Marie is a school teacher who has experience teaching students who have epilepsy. She has received formal training from a nurse in how to properly teach students who have epilepsy and how to effectively help them during a seizure. Marie feels comfortable having students who have epilepsy in her classroom. Marie stated the following during her interview: “I have no problem with them being in my classroom” (personal communication, February 24, 2015).

## **Lynne**

Lynne is a school teacher who has a passion to educate others about epilepsy. She has a family member who has epilepsy and understands the challenges that individuals who have epilepsy encounter in their personal and academic lives. Lynne is an advocate for students who have epilepsy, and each year she encourages her students and her peers to participate in Purple Day at her school. Lynne stated the following during the interview: “I helped to organized Purple Day, went on the Purple Day website quite a bit, and we are actually doing a fund raiser, because this Thursday is Purple Day, for the Epilepsy Foundation of Nova Scotia” (personal communication, March 23, 2015). She believes that students who have epilepsy are as capable as students who do not have epilepsy. Lynne stated that “as far as ability goes, they have every opportunity for academic successes as every other student does” (personal communication, March 23, 2015).

## **Research Questions**

This phenomenological study was guided by the following research questions:

**RQ1.** How do teacher attitudes toward epilepsy impact their perception of academic ability of students who have been diagnosed with epilepsy?

**RQ2.** How does teacher knowledge about epilepsy impact their perception of the academic ability of students who have been diagnosed with epilepsy?

**RQ3.** How does teacher practice with epilepsy impact their perception of the academic ability of students who have been diagnosed with epilepsy?

## **Survey Results**

The Attitudes Toward Persons with Epilepsy (ATPE) subscale for Attitude revealed that all participants held a favorable attitude toward people with epilepsy (see Table 1). The ATPE

subscale for Knowledge revealed a high level of knowledge about epilepsy among the participants (see Table 1). The Teacher Epilepsy Knowledge and Confidence Survey (TEKCS) subscale for Confidence revealed that there was a difference in the level of confidence among the participants (see Table 2). The TEKCS subscale for Knowledge revealed that four out of the five participants had a low level of knowledge about epilepsy (see Table 2).

Table 1

*ATPE Scale*

	*Attitude subscale	**Knowledge subscale
Dean	100/150	10/13
Alberta	110/150	10/13
Elizabeth	114/150	13/13
Reba	112/150	12/13
Marie	112/150	11/13

\* “Attitude scores range from 0 to 150 with a high score indicating a favorable attitude” (Antonak & Livneh, 1988, p. 177).

\*\*“Knowledge scores ranged from 0 to 13, with a higher score representing correct responses to more items” (Antonak & Livneh, 1988, p. 177).

Table 2

*TEKCS*

	*Confidence subscale	**Knowledge subscale
Dean	4.14 - Somewhat confident	3/25
Alberta	2.43 - Somewhat unsure	4/25
Elizabeth	3.21 - Between confident & unsure	7/25
Reba	4.86 - Very confident	15/25
Marie	4.21 - Somewhat confident	3/25

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\* The confidence scale for each participant was scored by summing the Likert-item values and dividing them by 14. The raw score was then compared to the survey anchors to obtain an idea of each participant's confidence level (Wodrich et al., 2011).

\*\*Knowledge scores ranged from 0 to 25, with a higher score representing correct responses to more items (Wodrich et al., 2011).

### Themes

As a result, this study's research questions revealed 11 themes, and they have been discussed in the following paragraphs. A detailed outline of open coding, enumeration, and themes has been included (see Appendix F).

#### Research Question 1

Four themes emerged from question 1, How do teacher attitudes toward epilepsy impact their perception of academic ability for students who have been diagnosed with epilepsy?: (a) epilepsy does not impact academic ability, (b) students who have epilepsy should be included in regular education classrooms, (c) students who have epilepsy are no different than other students, and (d) teachers would be concerned if a family member was diagnosed with epilepsy.

**Epilepsy does not impact academic ability.** All the participants in the study held the opinion that being diagnosed with epilepsy does not impact the student's academic ability. All participants believed that students who have epilepsy are as able as students who do not have epilepsy to succeed academically. As stated by Elizabeth, “We are inclusive educators, and I don't feel that epilepsy plays any role in how a student performs academically” (personal communication, March 13, 2015). Alberta agreed with Elizabeth but mentioned that teachers should be aware that seizure intensity could cause students to miss time at school, which in turn could have an impact on their academic success. Alberta affirmed that epilepsy “. . . does not really affect their academic abilities in any way, shape, or form, unless their epilepsy and their



seizures were so intense that they were missing quite a bit of school time” (personal communication, March 11, 2015).

**Students who have epilepsy should be included in regular education classrooms.** All participants believed that students with epilepsy should be included in regular education classrooms. Reba believed that all students have the right to receive their education in a regular classroom with their peers. As stated by Reba, “Everyone should have and can have equal access to all education” (personal communication, March 12, 2015). In addition, Marie stated:

We have come into a society where we have already passed laws saying that they should not be stigmatized . . . or seen as segregated. I think that is extremely important for their own social wellbeing and mental wellbeing to be submersed as part of the classroom, and seen as they are no different (personal communication, February 24, 2015).

Most participants agreed that appropriate accommodations and modifications within the classroom should be allowed if needed. Reba mentioned that at her school they “... accommodate and modify where necessary but if they [the student] are able to achieve the regular curriculum without modifications then they are in the classroom, just the same as every other student and doing the same work” (personal communication, March 12, 2015). Lynne, however, mentioned that some students who have epilepsy may not reveal that they have the condition because they feel uncomfortable or embarrassed about having epilepsy. Lynne stated the following:

I know that sometimes that students do not want other students to know they have epilepsy but if a seizure were to happen in the classroom, then I think that it is important for other members of the class to know so that they can respond appropriately (personal communication, March 23, 2015).

**Students who have epilepsy are no different than other students.** All participants stated that students who have epilepsy are the same as any other students in the classroom. The majority of teachers in the study agreed that appropriate precautions and an action plan should be put into place in case a student has a seizure. Most participants also agreed that meeting with parents, the student, and the resource team would be beneficial. Dean said,

It is a special needs concern so you would . . . need to have the background information, I would want to have a relationship with the parents in order to determine what their expectations are, consultation with the educational psychologist would be helpful, and if there has been an intervention I would want to be properly informed about what to do in that type of situation (personal communication, March 09, 2015).

In addition, Alberta stated that she

would definitely request a meeting with the parents, and with the Resource and Methods team, just to make sure to be familiar with what is common with that student, how many seizures they have, what has been done in the past, what seems to trigger those seizures, and is it different or similar to what you can expect from other students who have epilepsy (personal communication, March 11, 2015).

**Teachers would be concerned if a family member was diagnosed with epilepsy.** This study found that all of the participants would be concerned if a member of their family was diagnosed with epilepsy. Most of them agreed that they would need to educate themselves in the area of epilepsy in order to ensure that their family member was properly cared for during a seizure. This study also found that all participants agreed that being diagnosed with epilepsy

could have an impact on the daily routine of their family member. Some areas that may be impacted are being able to live independently, using power tools, bathing, and driving. Dean stated,

If I learned that someone in my family received that diagnosis, I would want to arm myself by doing as much up-to-date research in how you can go about your day to day living and look after the special needs of that individual (personal communication, March 09, 2015).

In addition, Reba commented,

It would worry me because of things that would change in their life and that is really more of how would we adapt, not so much being afraid for their health in a way that is life threatening. It is more how do we adapt things that could potentially impact your health. For example if my Dad was diagnosed with epilepsy, I would not want him out there with a chainsaw anymore (personal communication, March 12, 2015).

## **Research Question 2**

Four themes emerged from question 2, How does teacher knowledge about epilepsy impact their perception of the academic ability of students who have been diagnosed with epilepsy?: (a) teachers should be educated in epilepsy and work with their Resource Team, (b) teachers obtained most information from the Internet and parents, (c) the majority of teachers believed that there is a risk stigma associated with epilepsy, and (d) teacher training is needed in the area of epilepsy.

**Teachers should be educated in epilepsy and work with their resource team.** This study found that all study participants believed that teachers should be educated in epilepsy in

case they encounter students who have epilepsy. Most believed that it would be beneficial to work with their school's Resource Team in order to provide the best support for all students who have epilepsy and their peers who witness students having a seizure. As stated by Alberta, “Our methods and resource teachers have a whole bunch of information that they can give us whenever we have a high needs student in our classroom that might need some extra attention” (personal communication, March 11, 2015). Most teachers were aware of epilepsy but did not know enough details about the disorder. Reba voiced the following opinion:

I think that they [teachers] know what seizures are, and they know what epilepsy is, they are trained in terms of what safe positioning is, what to do for emergency procedures, but in terms of all the side effects and the physical effects of having seizures, I do not think that they are completely up-to-date on that (personal communication, March 12, 2015).

Some participants agreed that teachers do not have enough time to become educated in epilepsy and, therefore, will not take the time needed to become properly educated. Marie stated the following:

I think that it is important, that being said unless you have a student, who has epilepsy, enrolled in your classroom, a teacher will more than likely say that I have too much on my plate to educate myself about epilepsy (personal communication, February 24, 2015).

**Teachers obtained most information from the Internet and parents.** The majority of participants in the study obtained their information about epilepsy from parents, a student who had epilepsy, and Internet sites, such as the Epilepsy Foundation of Nova Scotia. Elizabeth

pointed out that she typically obtained information from the feeder school before a student arrived at their middle school. Elizabeth stated,

When we do transition in late spring, like in May/June, with feeder schools they often will let us know about any medical issues with students who are coming to us, so they would alert us, and then we would normally meet with the parents in September or late August before school started (personal communication, March 13, 2015).

However, some participants mentioned that if they needed to quickly obtain information about epilepsy, they would go to the resource department at their school. Alberta stated the following:

Our methods and resource teachers have a whole bunch of information that they can give us whenever we have a high needs student in our classroom that might need some extra attention. So they generally are very, very good at accessing some resources for us, I would go to them first before I would go anywhere else probably (personal communication, March 11, 2015).

Another participant mentioned receiving information from a nurse during professional development days because they have students who have epilepsy enrolled in their school.

**Stigma associated with epilepsy.** The majority of participants held the belief that there is a risk of stigma. The stigma could impact academic achievement if students who have epilepsy are continually bullied, singled out, ridiculed, or embarrassed by their peers or their teachers. Alberta stated "... it just depends on the classroom dynamic and how the teacher responds to the situation if it were to happen" (personal communication, March 11, 2015). Most of the participants believed that the stigma associated with epilepsy could be decreased or eliminated through educating teachers and students. In order to decrease stigma, Dean believed that

“understanding it is the first step and then prescribing differentiated education in terms of safety” (personal communication, March 09, 2015). Although most participants believed that there is a risk of stigma, one participant believed that there is no stigma associated with epilepsy.

**Teacher training is needed in the area of epilepsy.** This study found that teachers agreed that training in epilepsy would be helpful if students with epilepsy were enrolled in their schools. This study also found that participants indicated that topics, such as seizure types, seizure triggers, epilepsy's impact on learning, and proper procedures to implement during seizures, should be included in teacher training seminars or discussed during professional development days, as well as providing access to an information package that can be quickly read by teachers. As stated by Lynne, what is needed is “an information package that gets down to the nitty-gritty, the down and dirty, because if it is a book, teachers are not going to read it. It has to be something precise and very simple” (personal communication, March 23, 2015). The study revealed that the majority of teachers only thought about one type of seizure, which is the grand-mal seizure, and they were not aware that other seizure types that are not as noticeable existed. For instance, Reba stated,

A lot of people out there have this picture in their head of what epilepsy is, that it is always grand-mal seizures, you are going to fall to the ground, the whole thing with biting their tongue or swallowing their tongue (personal communication, March 12, 2015).

### **Research Question 3**

Three themes emerged from question 3, How does teacher practice with epilepsy impact their perception of the academic ability of students who have been diagnosed with epilepsy?: (a) proper safety procedures need to be implemented, (b) teachers are not formally trained to

properly teach students who have epilepsy, and (c) teachers are not formally trained to effectively help students during seizures.

**Proper safety procedures need to be implemented.** Participants agreed that when a student is having a seizure, proper safety procedures need to be implemented. Dean stated, “You have to be cautious about making certain that when they are in their seizures they don't hurt themselves” (personal communication, March 09, 2015). All participants in the study believed that the following procedures should be implemented if a seizure occurs: remain calm and do not panic, try to get the student safely to the floor, make sure that there are no blunt or dangerous objects in the way that would cause harm to the student, try to keep the student from banging his/her head, loosen any tight clothing, do not restrain the student during the seizure, give the student room to have a seizure, and do not place any objects in the student's mouth. Lynne stated,

I know that it is very important to teach people not to panic first of all, that there are things that we can do to help, such as allowing for lots of space around the person who is having the seizure (personal communication, March 23, 2015).

**Teachers are not formally trained to properly teach students who have epilepsy.** The present study revealed that the majority of the participants had not received any formal training in how to properly teach students who have epilepsy. However, Reba had knowledge in how to properly teach students who have epilepsy because she is also a resource teacher. Marie also had training because she had previously taught a student who had epilepsy. She was trained to watch for signs to determine whether her student was having a partial seizure. Partial seizures are more difficult to observe than grand-mal seizures because they do not include visible convulsions. Marie mentioned that in order to determine whether her student was having a seizure, she would simply ask the student. Marie stated,

There are certain signs to watch for, biting on the inside of the cheek and a dazed confused look. There are certain triggered signs. You literally go to the student and say “So and so” are you okay. If there is a silly response, it usually indicates there is something wrong (personal communication, February 24, 2015).

**Teachers are not formally trained to effectively help students during seizures.** The majority of teachers did not have any formal, hands-on training in how to effectively and properly help students during seizures. One participant mentioned that the only training that she received was from taking a basic Cardiopulmonary Resuscitation Training (CPR) course. Reba was the only participant who had received formal training in aiding students during seizures.

### Summary

Chapter 4 discussed the lived experiences of six middle school teachers, who were aware of epilepsy and who taught in the Anglophone West School District in New Brunswick, Canada. A background of each participant was included in the chapter. This phenomenological study used two surveys, online face-to-face interviews, and an online focus group session to collect data. Data analysis for Research Question 1 revealed 4 themes . Question 1 results found that participants believed that epilepsy does not impact academic ability. Question 1 results also found that participants believed that students who have epilepsy should be included in regular education classrooms, and students who have epilepsy are no different than other students. However, this study also showed that these same participants would be concerned if a family member was diagnosed with epilepsy.

Data analysis for Research Question 2 revealed 4 themes. Question 2 results found (a) that teachers believed that they should be educated in epilepsy and work closely with their Resource Team, (b) that the majority of participants obtained most of their information about



epilepsy from the Internet and from parents, (c) that teachers believed there can be a stigma associated with epilepsy, and (d) that they believed that teacher training is needed in the area of epilepsy.

Data analysis for Question 3 revealed 3 themes. Question 3 results found (a) that participants believed that proper safety procedures need to be implemented, (b) that participants were not formally trained to properly teach students who have seizures, and (c) that participants were not formally trained to effectively help students during seizures. The research questions used in this study were designed to discover the level of teacher attitude toward epilepsy, knowledge about epilepsy, and practice with epilepsy in middle schools in the Anglophone West School District in New Brunswick, Canada.

## **CHAPTER FIVE: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS**

The purpose of this phenomenological study was to discover how teacher attitude, knowledge, and practice with epilepsy impact the academic achievement of middle school students who have epilepsy in New Brunswick, Canada. Chapter 5 discusses the findings of the study and the theoretical, empirical, and practical implications related to the study findings. Chapter 5 also discusses the limitations, delimitations, recommendations, and directions for future research related to this study. Finally, a summary of the entire research study is provided, along with a reiteration of the key findings.

### **Summary of Findings**

This section provides a summary of the findings for each research question.

**RQ1.** How do teacher attitudes toward epilepsy impact their perception of the academic ability of students who have been diagnosed with epilepsy?

For question 1, the results indicated that the middle school teachers who participated in the study believed that epilepsy does not impact the academic abilities of students who have epilepsy. As stated by Marie, “I would say that they are completely capable of doing exactly what I expect of any other student” (personal communication, February 24, 2015). The results also revealed that the study participants believed that students who have epilepsy should be included in regular education classrooms and that these students are not any different from their peers who do not have epilepsy. As affirmed by Elizabeth, “That is exactly where they should be. All of our students are immersed into regular classrooms. We do very little pullouts. Our EAs work in the classroom with students. It is completely inclusive” (personal communication, March 13, 2015).

**RQ2.** How does teacher knowledge about epilepsy impact their perception of the academic ability of students who have been diagnosed with epilepsy?

For question 2, the results indicated that middle school teachers should be encouraged to attend educational training programs about epilepsy that would train them to properly teach students who have epilepsy as well as training those teachers to effectively help students who have epilepsy during their seizures. The study also discovered that most of these middle school teachers obtained their information about epilepsy from the Internet and from parents of students who have epilepsy. Reba stated that “there is so much out there on the internet, and I would say that is probably the first place that people would go if they wanted to learn about it” (personal communication, March 12, 2015). The study showed that most of the teachers who participated believed there is a risk of stigma associated with epilepsy. Because these teachers teach in an inclusive educational system, they are expected to implement practices to eliminate stigma in all areas associated with the educational system. However, these same middle school teachers would be concerned if a family member was diagnosed with epilepsy. As previously stated by Dean,

Well, it would not be good news, of course, if I learned that someone in my family had that diagnosis. I would want to arm myself by doing as much up-to-date research in how you can go about your day-to-day living, and look after the special needs of that individual (personal communication, March 09, 2015).

**RQ3.** How does teacher practice with epilepsy impact their perception of the academic ability of students who have been diagnosed with epilepsy?

For question 3, the study revealed that all of the middle school teachers who participated in the study believed that proper safety procedures need to be implemented while students who have epilepsy are having a seizure. As stated by Marie:

I really do believe that somebody, like a nurse or somebody in the medical field definitely needs to come out and even parents of epileptic children need to come out and talk about what the signs are, what happens afterwards, what medicines they are on, and how to handle different situations so that teachers feel more in the know (personal communication, February 24, 2015).

The study also indicated that most of these same middle school teachers were not formally trained to properly teach students who have epilepsy, and they were not formally trained to effectively help students during their seizures. Alberta acknowledged that “the only background that I have is just what I know from taking some basic CPR courses” (personal communication, March 11, 2015). Dean said,

I haven't received any specialized training. I have specialized training in terms of someone who is experiencing a heart attack, or somebody who is oppositional defiant, or somebody who is dyslexic. That is the only specialized training I have received; I have not received anything related to epilepsy (personal communication, March 09, 2015).

### **Discussion**

The findings of this study align with previous research, which found that most middle school teachers do not have sufficient knowledge or practice with epilepsy (Alkhamra et al., 2012; Shehata & Mahran, 2010; Toli et al., 2013). The majority of participants in the current study had some knowledge about epilepsy but it was insufficient. Most participants in the current study agreed that teachers should have more knowledge about epilepsy in order to ensure that students who have epilepsy are properly cared for during their seizures. Reba stated, “I think that they should be aware of not only what happens when they are having a seizure, but also how

long the effects may last” (personal communication, March 12, 2015). For the most part, study participants also believed that it is important for parents to inform teachers when their child has epilepsy in order for teachers to obtain accurate information about epilepsy from their school's Resource Department. Elizabeth mentioned that “if we had a student in our building that was epileptic the whole ESS team as well as teachers who teach that child would definitely meet with parents in advance and be educated” (personal communication, March 13, 2015).

Obtaining up-to-date information from reliable sources will ensure that students who have epilepsy will be properly cared for by their teachers and will help to eliminate the stigma associated with epilepsy. For example, in a study conducted by Babikar and Abbas (2011), the researchers found that the majority of teachers in their study did not have sufficient knowledge about epilepsy and held discriminatory beliefs about students who have epilepsy. Another study conducted by Toli et al. (2013) found that teachers did not have enough knowledge about how to effectively assist students during their seizures or how to prevent harm from occurring during a seizure. The research by Toli et al. (2013) also showed that the teachers who participated in their study did not receive any formal training about epilepsy during their academic or professional careers.

The findings of the present study found that the majority of middle school teachers who participated in this study had not received any formal training in how to effectively teach students who have epilepsy, and that these same teachers did not receive any formal training on the acute management of seizures during their careers. When asked if she had received any training in how to properly teach students with epilepsy, Alberta stated, “None, as of now” (personal communication, March 11, 2015). Similarly, Lynne also stated, “No formal training” (personal communication, March 23, 2015). Previous research has produced results similar to

those of the current study. A study conducted by Mott et al. (2012) found that the majority of teachers who participated in their study did not have formal training about epilepsy and that most of their knowledge about epilepsy was obtained via the Internet. Similarly, a study conducted by Eyong et al. (2012) found that middle school teachers did not have any formal training on epilepsy and that they obtained most of their information about epilepsy from their communities.

Although this study had some similarities with previous research, there were some specific differences from previous literature data. For example, the findings of this study indicated that participants held the viewpoint that students who have epilepsy are as academically capable as other students, which differs from previous research studies that revealed that teachers did not consider students who have been diagnosed with epilepsy to be as academically capable as students who do not have epilepsy. For instance, one study conducted by Katzenstein et al. (2007) revealed that teachers in their study believed that students who have epilepsy were more likely to produce lower grades than students who did not have epilepsy, and another study conducted by Eyong et al. (2012) found that 57% of participants believed that students who have epilepsy had below average intelligence. However, participants in this study believed that students who have epilepsy are as academically capable when compared to other students. For example, Lynne stated, “As far as ability goes, they have every opportunity for academic successes as every other student does” (personal communication, March 23, 2015). Similarly, Dean stated that “I believe that students who have epilepsy are as academically able as students who do not have epilepsy” (personal communication, March 09, 2015).

The present study results also diverged from previous studies in the area of teacher attitude toward epilepsy. For example, in a previous study it was revealed that some participants held a negative viewpoint of individuals who had epilepsy, and these same participants believed

that epilepsy was a punishment for breaking societal rules (Adjei et al., 2013). However, results of the current study indicated that all participants held a positive attitude toward students who have epilepsy and that they felt comfortable having students who have epilepsy in their classrooms. Alberta revealed the following during her interview, “. . . I'd feel quite comfortable I think, having a student with epilepsy in the classroom, as long as I had been given a good amount of notice beforehand so that I could help them” (personal communication, March 11, 2015). The study participants believed that students who have epilepsy are the same as other students who do not have epilepsy and that students who have epilepsy have the right to receive a quality education beside their classmates who do not have epilepsy. Elizabeth stated the following when asked if students should be immersed in regular education classrooms, “That is exactly where they should be. All of our students are immersed into regular classrooms. We do very little pullouts. Our EAs work in the classroom with students. It is completely inclusive” (personal communication, March 13, 2015). This indicated that most teachers in the current study had a positive viewpoint of epilepsy and would be comfortable having students who have epilepsy in their classrooms, whereas, a study conducted by Thacker et al. (2008) discovered that approximately 30% of teachers who participated in their study were afraid to have students who have epilepsy in their classrooms.

The major contribution that my research adds to the field of education is that middle school teachers who teach in New Brunswick, Canada, need training in the area of epilepsy in order to ensure that students who have epilepsy receive a high quality education throughout their academic careers. Teachers who are educated about and trained in epilepsy will be able to recognize the signs when students are experiencing partial/focal or generalized seizures.

Recognizing these signs is important because it allows teachers to immediately implement the proper procedures to ensure the safety of the student who is experiencing the seizure.

Teachers who have sufficient knowledge about epilepsy and who are properly trained to teach students who have epilepsy are in the best position to eliminate the stigma associated with epilepsy. Eliminating the stigma associated with epilepsy will improve the self-efficacy of students who have epilepsy. Furthermore, it is important for students who have epilepsy to possess high levels of self-efficacy because self-efficacy impacts their self-confidence, self-esteem, and self-worth. A study conducted by Sung et al. (2013) found that individuals who possess high self-efficacy are more apt to feel confident that they can successfully accomplish their goals. Additionally, previous research has also found that teacher perceptions about epilepsy impact the academic success of students who have epilepsy (Katzenstein et al., 2007). Students who have epilepsy and have teachers who are properly trained in how to teach and to care for students who have epilepsy are more likely to successfully meet curriculum requirements put into place for all students by school administrators. In conclusion, it is evident that teacher training in the area of epilepsy will eliminate the stigma associated with epilepsy and, therefore, will ensure that students who have epilepsy will reach their full academic potentials.

### **Implications**

This phenomenological study was based on Albert Bandura's Social Cognitive Theory. Bandura (1989) believed that individuals are in control of their destinies, of their actions, and of other events that happen in their lives. However, Bandura (1989) also posited that environmental factors can impact the daily lives of individuals who have epilepsy. In relation to the findings of



this study, environmental factors, such as teachers, students, and parents, can influence the academic success of students who have epilepsy.

Students who possess a strong self-efficacy are more likely to succeed in all areas of their lives. Conversely, students who possess a low self-efficacy are more apt to have low motivation levels, self-esteem problems, academic difficulties, and social development problems. As stated by Bandura (1989), “Self-efficacy beliefs affect thought patterns that may be self-aiding or self-hindering” (p. 1175). Students who have epilepsy and who possess low self-efficacy are more likely to produce lower grades than students who do not have epilepsy because students who have epilepsy may believe that they are not as academically capable as their peers who do not have epilepsy. Teachers who are equipped with appropriate knowledge have the opportunity to improve the self-efficacy levels of students who have epilepsy by encouraging them to participate in all regular education activities, treating them the same as other students. Education of others about epilepsy can assist in eliminating the stigma associated with epilepsy. Teachers can play a major role in helping students who have epilepsy increase their self-esteem by helping them to achieve their academic goals. The following paragraphs will discuss the findings of each of the research questions through a theoretical-empirical-practical lens.

### **RQ1. How Do Teacher Attitudes Toward Epilepsy Impact Their Perception of Academic Ability of Students Who Have Been Diagnosed With Epilepsy?**

**Theoretical implications.** Previous studies have found that some teachers believed that students who have epilepsy are not as academically able as students who do not have epilepsy (Eyong et al., 2012; Lim et al., 2013; Shehata & Mahran, 2010). Some studies have also shown that teachers did not have the same academic expectations for students who had epilepsy when compared to students who did not have epilepsy (Katzenstein et al., 2007). Accordingly, students

who had epilepsy were not required to do as well as their peers. Earlier research had also found that students who had epilepsy were at risk of producing lower grades when they adopted the belief that they were less intelligent or less likely to attain their academic goals because of their disorder (Katzenstein et al., 2007).

My study revealed, however, that teachers believed that students who have epilepsy were as capable of achieving their academic goals as students who did not have epilepsy. Elizabeth stated “. . . as far as academics it does not play a role at all in how the student learns or how we teach that student. It is strictly medical only. . .” (personal communication, March 13, 2015). My study also revealed that study participants expected all their students, regardless of having or not having epilepsy, to participate in classroom activities and to successfully complete classroom work assignments. Maria affirmed, “I guess speaking from experience with students who have epilepsy in the school. I would say that they are completely capable of doing exactly what I expect of any other student.” Based on Bandura's (1989) Social Cognitive Theory, it would be more beneficial for students who have epilepsy to have teachers who treated them the same as their peers and expected them to meet the same academic requirements. Teachers should never treat students who have epilepsy differently than they would treat any other student in their classroom. However, in situations where these students need some help with course material, teachers should be encouraged to provide these students with the proper accommodations to achieve their academic goals. Students who have epilepsy and who believe that they are as academically capable as their peers are less likely to feel depressed, inadequate, helpless, and unintelligent. These same students are more apt to feel autonomous, self-confident, and self-efficient, and therefore, are more likely to successfully achieve all of their academic goals.

**Empirical implications.** This study indicated that middle school teachers who teach in the Anglophone West School District of New Brunswick, Canada, held positive attitudes toward epilepsy and students who have epilepsy. These same teachers also believed that students who have epilepsy should attain their education in regular education classrooms alongside their peers who do not have epilepsy. When asked if they believed that students who have epilepsy should be immersed into regular education classrooms Alberta stated, “I believe that individuals who have epilepsy can be immersed in regular education classrooms” (personal communication, March 11, 2015), and Reba stated that, “We accommodate and modify where necessary, but if they are able to achieve the regular curriculum then they are in the classroom the same as every other student, and doing the same work” (personal communication, March 12, 2015). This confirms that teachers in this study believed that students who have epilepsy can successfully meet all of the academic requirements put into place for all students by school district officials. However, these results conflict with a study conducted by Eyong et al. (2012) that revealed that over half of the middle school teachers who participated in their study believed that students who have epilepsy have below normal intelligence and should be placed in special education schools.

**Practical implications.** The study suggests that when teachers possess a positive attitude toward students who have epilepsy, these same students will benefit academically, and therefore, will maintain a positive attitude toward themselves. Similarly, a study conducted by Shehata and Mahran (2010) revealed that teachers who held a positive attitude toward epilepsy were more likely to have a positive impact on the academic performance of students who had epilepsy. These results can be used to show teachers that the attitude one has toward epilepsy can either have a negative or positive impact on the academic success of students who have epilepsy. Teachers, who hold positive attitudes toward epilepsy are in the best position to be advocates for

students who have epilepsy. These teachers can lead through example by treating students who have epilepsy the same as students who do not have epilepsy.

**RQ2. How Does Teacher Knowledge About Epilepsy Impact Their Perception of the Academic Ability of Students Who Have Been Diagnosed With Epilepsy?**

**Theoretical implications.** In prior studies, researchers found that teacher knowledge about epilepsy can impact their perception of the intelligence levels of students who have epilepsy (Alkhamra et al., 2012; Shehata & Mahran, 2010). Furthermore, research conducted in the area of teacher knowledge about epilepsy found that the majority of teachers in those studies had not received any formal training about epilepsy during their academic careers or during their professional careers (Babikar & Abbas, 2011; Mott et al., 2013). In agreement with these findings, this study also revealed that the majority of study participants did not have sufficient knowledge about epilepsy and did not have any formal training in the area of epilepsy. In order to improve the level of teacher knowledge about epilepsy, university curriculum at the undergraduate level should include accurate and up to date information about epilepsy. Teacher training in epilepsy at the university level will have a positive impact on the self-efficacy of students who have epilepsy, which in turn would have a positive impact on their academic achievement levels. As stated by Bandura (1989), “Those who have a high sense of efficacy visualize success scenarios that provide positive guides for performance. Those who judge themselves as inefficacious are more inclined to visualize failure scenarios . . .” (p. 1176).

**Empirical implications.** The study results revealed that although middle school teachers have a positive attitude toward students who have epilepsy, they do not have sufficient training in how to properly teach or care for students who have epilepsy. Similarly, a study conducted by Toli et al. (2013) revealed that the majority of participants in their study had not received any

formal training in the area of epilepsy. The majority of teachers in the current study stated that all teachers should receive formal training in epilepsy in case they did encounter a student who has epilepsy having a seizure. As Lynne mentioned, “I think that is really important to have a basic understanding of what exactly is happening to the brain when a seizure does happen. There are things that teachers can do to support students who have epilepsy” (personal communication, March 23, 2015). However, most teachers stated that they would not actually have the time to participate in a formal training session because of their hectic schedules during school hours. Marie stated,

I think that it is important, that being said unless you are with a student who is enrolled in your classroom who has epilepsy, a teacher will say that I have got too much on my plate and that is one more thing I need to learn (personal communication, February 24, 2015).

**Practical implications.** The study revealed that the majority of participants did not have any formal training in teaching students who have epilepsy or any formal training in how to properly care for students during a seizure. Similarly, a study conducted by Mott et al. (2012) also revealed a “. . . lack of teacher training” (p. 738) in the area of epilepsy. These results suggest that it would be beneficial to create an epilepsy training program for middle school teachers. Most teachers do not have the time to attend training sessions on their own, but a solution to this problem would be to include epilepsy training sessions on scheduled teacher professional development days. Educating teachers about epilepsy will eliminate the stigma associated with epilepsy and improve the quality of life, both of students who have epilepsy, and of their families. It would be beneficial to the next generation of school teachers if universities included the topic of epilepsy in their curriculum.

### **RQ3. How Does Teacher Practice With Epilepsy Impact Their Perception of the Academic Ability of Students Who Have Been Diagnosed With Epilepsy?**

**Theoretical implications.** Earlier research found that teacher practice with epilepsy can impact teacher perception of students who have epilepsy (Njamnshi et al., 2009). Njamnshi et al. (2009) believed that teachers who were familiar with epilepsy were less likely to discriminate against students who had epilepsy. The current study produced similar results. This study found that participants who had experience teaching students who had epilepsy did not believe that these students were less capable academically, when compared to their peers who did not have epilepsy, and therefore, expected students who had epilepsy to be treated equally and with respect. Marie declared, “I would say that they are completely capable of doing exactly what I expect of any other student” (personal communication, February 24, 2015). The current study also found that the majority of participants felt comfortable teaching students who have epilepsy and helping them during a seizure. Alberta revealed, “I'd feel quite comfortable, I think, having a student with epilepsy in the classroom as long as I have been given a good amount of notice beforehand, so that I could help them” (personal communication, March 11, 2015). Similarly Lynne stated,

I would not be stressed to have a student who has epilepsy in my classroom by any means but I would want my class to be aware of what could happen, and how to respond so that the person, who may have a seizure in the classroom, does not feel too awkward after a seizure (personal communication, March 23, 2015).

**Empirical implications.** This study found that although participants did not have high levels of experience teaching students who have epilepsy and helping them during seizures, these same participants still believed that students who had epilepsy were as academically able as their

peers who did not have epilepsy. Similarly, research conducted by Lee et al. (2011) showed that the majority of teachers in their study did not have experience with epilepsy, but these same participants believed that students who have epilepsy should be enrolled in regular education classrooms. Dean stated, “I believe that students who have epilepsy are as academically able as students who do not have epilepsy” (personal communication, March 09, 2015). This suggests that although teachers do not have much experience with epilepsy, lack of experience does not seem to impact their perception of epilepsy or students who have epilepsy. However, these same participants revealed that they would be concerned if one of their family members were diagnosed with epilepsy. Reba revealed, “I would certainly be worried in terms of how it would affect their life differently, you know certain things like driving, handling different things, it depends on what they'd be doing, when they came on” (personal communication, March 12, 2015). Alberta mentioned that following,

I think that I would need to know more about it but I would definitely be concerned for their own self-esteem, specifically, how it would affect their self-esteem, especially if it presented itself in a situation where it might have embarrassed them (personal communication, March 11, 2015).

**Practical implications.** The current study revealed that the majority of participants did not have experience teaching students who have epilepsy and did not have any experience helping students during a seizure. These results suggest that it would be beneficial for teachers to be introduced to students who have epilepsy and their parents so that they could talk with them and ask them questions about epilepsy. It might also be beneficial for school administrators to ask teachers to watch simulated videos of individuals properly helping individuals during their seizures. A study conducted by Roberts and Farhana (2010) found that first-aid videos are very

effective educational tools for teaching others about how to properly help individuals who have epilepsy during their seizures. Information packages that include a school-board-approved video about epilepsy would be very helpful to bring to light what may occur in the classroom while a student is having a seizure. As stated by Lynne,

I think that it would be awesome if someone would make it easier for us. You know a quick tool, quick strategies for teachers to use to see if learning is happening. An information package that gets down to the nitty-gritty, the down and dirty, because if it is a book teachers are not going to read it. It has to be something precise and very simple (personal communication, March 23, 2015).

### **Limitations**

The present study had the following limitations: (a) teachers may fear that they will be negatively judged by society if they reveal their true feelings about epilepsy, which may cause them to provide answers they believe are commonly held beliefs within society, instead of divulging their true beliefs, and (b) teachers who do not want to participate in the study may feel obligated to participate anyway because they fear that if they decline, they may be negatively judged by their fellow teachers and their school administrators. Another limitation was study location. The study only recruited participants from one of the four Anglophone School Districts located in New Brunswick, Canada, and the study did not include any participants from the Francophone School Districts. Recruiting participants from more than one district may have revealed more themes. Another limitation was the total number of participants in the study. Increasing the number of participants included in the study may have revealed different themes and, therefore, the study results may have been different. It may be difficult to generalize the study results over the entire population of middle school teachers because the sample size was



small and only consisted of one male middle school teacher. Another limitation was that only middle school teachers were asked to participate in the study.

### **Recommendations for Future Research**

The current study did not seek to discover whether training programs about epilepsy for middle school teachers would be effective tools in improving teacher attitudes toward epilepsy, teacher knowledge about epilepsy, and teacher practice with epilepsy. Future researchers could measure the levels of teacher attitudes toward epilepsy, teacher knowledge about epilepsy, and teacher practice with epilepsy before and after the teachers attended an educational training program about epilepsy, in order to determine whether epilepsy education programs for teachers are effective. This would be helpful information for school administrators who are wondering whether including teacher training sessions about epilepsy during Professional Development Days would be beneficial to their teachers and their students.

This study did not include middle school teachers from all school districts located in New Brunswick, Canada. Future research could include middle school teachers from both the Anglophone and the Francophone school districts, as well as including teachers from all grade levels. This would help to determine whether teacher training programs are needed within all grade levels and across all districts in New Brunswick, Canada. The current study also did not include private schools. Future researchers could compare public schools with private schools in order to determine whether there is a difference in the levels of teacher attitude about epilepsy, teacher knowledge about epilepsy, and teacher practice with epilepsy.

This study did not seek to discover whether teacher attitudes toward epilepsy, knowledge about epilepsy, or practice with epilepsy impacts the academic success of students who have epilepsy living in New Brunswick, Canada. Future researchers could conduct a longitudinal

study that would include students who have epilepsy as well as teachers who live in New Brunswick, Canada. Teacher attitudes toward epilepsy, knowledge about epilepsy and practice with epilepsy could be measured before and after attending an information session about epilepsy, and then student academic achievement levels could be measured before and after their teachers attended the information session about epilepsy to determine whether teacher training programs are beneficial.

### **Summary**

The purpose of this phenomenological study was to discover how teacher attitudes, knowledge, and practice with epilepsy impact the academic achievement of middle school students who have epilepsy in New Brunswick, Canada. Two important findings obtained from this study were that (a) participants did not have any formal training in teaching students who have epilepsy, and (b) participants did not have any formal training in properly helping students who have epilepsy during seizures. The majority of teachers who participated in the study revealed that they believed that teachers should be trained in epilepsy and how to properly care for students who have epilepsy, especially if they have students who have epilepsy enrolled in their classroom. These findings suggest that formal training should be offered to all teachers in order to ensure the safety of students who have epilepsy and to ensure that these students receive the best possible education to help them to reach their full academic potential. It is believed that educating teachers will eliminate the stigma associated with epilepsy, and by eliminating this stigma, students who have epilepsy will be more apt to become self-sufficient. Students who perceive themselves to be self-sufficient are more likely to feel confident that they are capable of achieving all of their academic goals, which in turn will increase their levels of self-esteem and

self-efficacy. Students who have epilepsy and who are self-confident and self-sufficient and who possess high self-esteem will become responsible and productive citizens within society.

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## Appendix A

### Teacher Participant Consent Form

The following template is intended to facilitate your development of an adequate informed consent form.

#### CONSENT FORM

How Educator Attitudes, Knowledge, and Practice Impact the Academic Achievement of Students Who Have Epilepsy: A Phenomenological Investigation of Canadian Secondary School

Teachers

Tawnya Fanjoy

Liberty University

School of Education

You are invited to be in a research study that investigates secondary school teachers' attitudes, knowledge, and practice with epilepsy. You were selected as a possible participant because you are a secondary school teacher who is familiar with epilepsy. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

Tawnya Fanjoy, a doctoral candidate in the Education Department at Liberty University is conducting this study.

#### **Background Information:**

The purpose of this study is to discover how teacher attitudes, knowledge, and practice with epilepsy impact the academic achievement of middle school students who have epilepsy in New Brunswick, Canada.

#### **Procedures:**

If you agree to be in this study, I would ask you to do the following things: a) complete a consent form, b) participate in a confidential face-to-face interview with the researcher, c) complete a

confidential survey, and d) participate in a focus group that will consist of six middle teachers from your district and the researcher. The face-to-face interview and focus group will be audio recorded. The face-to-face interview will take place once at a specified location within the school during office hours and will be approximately 40 minutes in length. Two surveys will be given to you to complete once during school hours at a specified location within the school and the allotted timeframe will be 40 minutes. It is preferred that the two surveys be completed immediately following the face-to-face interview. If you cannot complete the surveys at that time, I will schedule another time and date to complete the surveys. The focus group will take place once during school hours at a specified location within the school and the allotted timeframe will be 60 minutes.

### **Risks and Benefits of being in the Study:**

The risks are no more than would be encountered in everyday life

The benefits to participation are that teachers who participate in the study will become more aware of the challenges and stigma experienced by students who have epilepsy. Students who have epilepsy will also benefit because teachers who are properly educated about epilepsy will be in the best position to educate their students about epilepsy and help to decrease the stigma associated with epilepsy.

Liberty University will not provide medical treatment or financial compensation if you are injured or become ill as a result of participating in this research project. This does not waive any of your legal rights nor release any claim you might have based on negligence.

### **Compensation:**

You will NOT receive payments, reimbursements, or incentives by participating in this study.

### **Confidentiality:**

The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only the researcher will have access to the records. I will protect the identities of each participant using methods that will conceal the identities of each participant, such as by using pseudonyms to protect the identities of the participants and location of study. All information, including audio recordings, obtained throughout the study will be placed in a safe and secure location where only individuals involved in the research study will be able to access the data. All consent forms, data, and audio recordings will be destroyed or erased after three years. One limit of the study is confidentiality of information obtained during the focus group meeting. I cannot ensure that other group members will not reveal the identities of other participants who were involved in the focus group or topics discussed during the session.

**Voluntary Nature of the Study:**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

**Contacts and Questions:**

The researcher conducting this study is Tawnya Fanjoy. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [tfanjoy@liberty.edu](mailto:tfanjoy@liberty.edu). You may also contact her advisor, Dr. Kenneth Tierce, via telephone at (817) 975-5045 or email him at [ktierce@liberty.edu](mailto:ktierce@liberty.edu).

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Suite 1837, Lynchburg, VA 24515 or email at [irb@liberty.edu](mailto:irb@liberty.edu).

*Please notify the researcher if you would like a copy of this information to keep for your records.*

**Statement of Consent:**

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION  
WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

☐ The researcher has my permission to audio-record me as part of my participation in this study.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Investigator: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix B

### Face-to-Face Interview Questions/Focus Group Questions

1. Tell me what you believe about the academic abilities of students who have been diagnosed with epilepsy.
2. What are your feelings about students who have epilepsy being immersed into regular education classrooms?
3. Tell me what procedures you would implement to help a student with epilepsy during a seizure.
4. Tell me what you believe about the level of knowledge that teachers should have about epilepsy.
5. Tell me where you obtain information about epilepsy?
6. Describe the training that you have received to teach students who have epilepsy.
7. Describe the training that you have received to properly help students who have epilepsy during a seizure.
8. Describe your feelings about having students who have epilepsy in your classroom.
9. Tell me how the stigma associated with epilepsy can impact the academic achievement of students who have been diagnosed with epilepsy.
10. Tell me how you would feel if you found out someone in your family was diagnosed with epilepsy?
11. Is there anything else about epilepsy that relates to teaching that you would like to mention at this time?

## Appendix C

## IRB Form

IRB Application # \_\_\_\_\_

**I. APPLICATION INSTRUCTIONS**

- To submit a protocol, complete each section of this form and email it and any accompanying materials (i.e. consent forms and instruments) to [irb@liberty.edu](mailto:irb@liberty.edu). For more information on what to submit and how, please see our website at: [www.liberty.edu/irb](http://www.liberty.edu/irb). **Please note that we can only accept our forms in Microsoft Word format.**
- In addition, please submit one signed copy of the fourth page of the protocol form, which is the Investigator's Agreement. Also submit the second page if a departmental signature is required for your study. Signed materials can be submitted by mail, fax (434-522-0506), or email (scanned document to [irb@liberty.edu](mailto:irb@liberty.edu)). Signed materials can also be submitted via regular mail or in person to our office: Green Hall, Suite 1837.
- Please be sure to use the grey form fields to complete this document; do not change the format of the application. You are able to move quickly through the document by using the "Tab" key.
- **Note: Applications with the following problems will be returned immediately for revisions: 1) Grammar/spelling/punctuation errors, 2) A lack of professionalism (lack of consistency/clarity) on the application itself or any supporting documents, 3) Incomplete applications. Failure to minimize these errors will cause delays in your processing time.**

**II. BASIC PROTOCOL INFORMATION**

Protocol Title:

Principal Investigator (PI): Tawnya Fanjoy

Professional Title: **Doctoral Candidate**School/Department: **Liberty University/Education Department**Mailing Address: **9 Fairholme Street, Quispamsis, NB, Canada**Telephone: **(506) 333-2339**LU Email: **tfanjoy@liberty.edu**

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Check all that apply: ☐ Faculty ☒ Graduate Student ☐ Undergraduate Student ☐ Staff

This research is for: ☐ Class Project ☐ Master's Thesis ☒ Doctoral Dissertation

☐ Faculty Research ☐ Other (describe):

Have you defended and passed your dissertation proposal? ☐ Yes ☒ No ☐ N/A

If no, what is your defense date? **unsure at this time**

**Co-Researcher(s): N/A**

**Faculty Advisor: Dr. Kenneth Tierce**

School/Department: **Liberty University, Department of Education**

Telephone: **(817) 975-5045**

LU Email: **krtierce@liberty.edu**

**Non-key Personnel:**

School/Department:

Telephone:

LU Email:

**Consultants: Dr. Russell Yocum**

School/Department: **Liberty University, Department of Education**

Telephone: **(434) 592-5462**

LU Email: **ryocum@liberty.edu**

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**Liberty University Participants:**

Do you intend to use LU students, staff, or faculty as participants or LU student, staff, or faculty data in your study? If yes, please list the department and/or classes you hope to enlist, and the number of participants/data sets you would like to enroll/use. If you do not intend to use LU participants in your study, please indicate "no" and proceed to the section titled "Funding Source."

☐ No

☐ Yes

Number of participants/data sets

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Department

Class(es)



In order to process your request to use LU participants, we must ensure that you have contacted the appropriate department and gained permission to collect data from them. Please obtain the original signature of the department chair in order to verify this.

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Signature of **Department Chair**

Date

**Funding Source:** If research is funded please provide the following:

Grant Name (or name of the funding source):

Funding Period (month/year):

Grant Number:

**Anticipated start and completion dates for collecting and analyzing data:**

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**Completion of required CITI research ethics training courses:**

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Course Name

Date

### III. OTHER STUDY MATERIALS AND CONSIDERATIONS

**Does this project call for (more detail will be required later):**

Use of voice, video, digital, or image recordings?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Participant compensation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Advertising for participants?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
More than minimal psychological stress?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Confidential material (questionnaires, surveys, interviews, photos, etc.)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Extra costs to the participants (tests, hospitalization, etc.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
The inclusion of pregnant women?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
More than minimal risk? *	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Alcohol consumption?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Waiver of Informed Consent?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
The use of protected health information (obtained from healthcare practitioners or institutions)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
VO2 Max Exercise?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
The use of blood?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Total amount of blood	
Over time period (days)	

The use of rDNA or Biohazardous materials?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
The use of human tissue or cell lines?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
The use of other fluids that could mask the presence of blood (including urine and feces)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
The use of an <b>Investigational New Drug (IND) or an Approved Drug for an Unapproved Use?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Drug name, IND number, and company:
The use of an <b>Investigational Medical Device or an Approved Medical Device for an Unapproved Use?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Device name, IDE number, and company:
The use of <b>Radiation or Radioisotopes?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

*\*Minimal risk is defined as “the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.” [45 CFR 46.102(i)]*

#### **IV. INVESTIGATOR AGREEMENT & SIGNATURE PAGE\***

BY SIGNING THIS DOCUMENT, THE INVESTIGATOR AGREES:

1. That no participants will be recruited or entered under the protocol until the Investigator has received the final approval or exemption email from the chair of the Institutional Review Board.
2. That no participants will be recruited or entered under the protocol until all key personnel for the project have been properly educated on the protocol for the study.

3. That any modifications of the protocol or consent form will not be initiated without prior written approval, by email, from the IRB and the faculty advisor, except when necessary to eliminate immediate hazards to the participants.
4. The PI agrees to carry out the protocol as stated in the approved application: all participants will be recruited and consented as stated in the protocol approved or exempted by the IRB. If written consent is required, all participants will be consented by signing a copy of the approved consent form.
5. That any unanticipated problems involving risks to participants or others participating in the approved protocol, which must be in accordance with the [Liberty Way](#) (and/or the [Honor Code](#)) and the [Confidentiality Statement](#), will be promptly reported in writing to the IRB.
6. That the IRB office will be notified within 30 days of a change in the PI for the study.
7. That the IRB office will be notified within 30 days of the completion of this study.
8. That the PI will inform the IRB and complete all necessary reports should he/she terminate University Association.
9. To maintain records and keep informed consent documents for **three years** after completion of the project, even if the PI terminates association with the University.
10. That he/she has access to copies of [45 CFR 46](#) and the [Belmont Report](#).

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Principal Investigator (Printed)

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Principal Investigator (Signature)

Date

### FOR STUDENT PROPOSALS ONLY

BY SIGNING THIS DOCUMENT, THE FACULTY ADVISOR AGREES:

1. To assume responsibility for the oversight of the student's current investigation, as outlined in the approved IRB application.
2. To work with the investigator, and the Institutional Review Board, as needed, in maintaining compliance with this agreement.
3. To monitor email contact between the Institutional Review Board and principle investigator. Faculty advisors are cced on all IRB emails to PIs.
4. That the principal investigator is qualified to perform this study.
5. **That by signing this document you verify you have carefully read this application and approve of the procedures described herein, and also verify that the application complies with all instructions listed above.** If you have any questions, please contact our office ([irb@liberty.edu](mailto:irb@liberty.edu)).

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Faculty Advisor (Printed)

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Faculty Advisor (Original Signature)

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Date

**\*The Institutional Review Board reserves the right to terminate this study at any time if, in its opinion,**

**(1) the risks of further experimentation are prohibitive, or (2) the above agreement is breached.**

## **V. PURPOSE**

- 1. Purpose of the Research:** Write an original, brief, non-technical description of the purpose of your project. Include in your description: Your research hypothesis or question, a narrative that explains the major constructs of your study, and how the data will advance your research hypothesis or question. This section should be easy to read for someone not familiar with your academic discipline.

**The purpose of this phenomenological study is to discover how middle school teachers' attitude, knowledge, and practice with epilepsy impacts student academic achievement and whether teacher perception is related to the stigma associated with epilepsy. There are three research questions that will be used to guide this study and they are as follows: 1) How do teacher attitudes towards epilepsy impact their perceptions of intellectual ability for students who have been diagnosed with epilepsy?, 2) How does teacher knowledge about epilepsy impact their perception of the intellectual ability of students who have been diagnosed with epilepsy?, and 3) How does teacher practice with epilepsy impact their perception of the intellectual ability of students who have been diagnosed with epilepsy?. The data obtained from the research questions will be used to create effective teacher-training programs that will educate teachers about epilepsy and teach them how to properly care for students who have epilepsy during seizures, which in turn will help to eliminate or decrease the stigma associated with epilepsy.**

## **VI. PARTICIPANT INCLUSION/EXCLUSION CRITERIA**

1. **Population:** From where/whom will the data be collected? Address each area in non-scientific language. Enter N/A where appropriate.

- a. **Provide the inclusion criteria for the participant population—gender, age ranges, ethnic background, health status, and any other applicable information—and provide a rationale for targeting this population.** If you are related to any or all of your participants, please state that fact here. **The participants will be middle school teachers who are familiar with epilepsy. It is important to target this population because the study focuses on teacher perception of epilepsy and to include middle school teachers who are not familiar with epilepsy would not be beneficial.**
- b. **The exclusion criteria for participants:** **N/A**
- c. **Explain the rationale for the involvement of any special population** (Examples: children, specific focus on ethnic populations, mentally retarded, lower socio-economic status, prisoners). **N/A**
- d. **Provide the maximum number of participants you seek approval to enroll from all participant populations you intend to use and justify the sample size.** You will not be approved to enroll a number greater than this. If, at a later time, it becomes apparent you need to increase your sample size, you will need to submit a change in protocol form. **The maximum number of participants that will be included in the study will be six middle school teachers. Two teachers will be selected from each middle school grade. Two teachers from grade six, two teachers from grade seven, and two teachers from grade eight.**
- e. **For NIH, federal, or state-funded protocols only:** Researchers sometimes believe their particular project is not appropriate for certain types of participants. These may include, for example: women, minorities, and children. If you believe your project should not include one or more of these groups, please provide your justification for their exclusion. Your justification will be reviewed according to the applicable NIH, federal, or state guidelines. **N/A**

2. **Types of Participants:** Check all that apply:

- ☒ Normal Volunteers (Age 18-65)
- ☐ Minors (under age 18)
- ☐ Over age 65
- ☐ University Students
- ☐ Active-Duty Military Personnel
- ☐ Discharged/Retired Military Personnel
- ☐ Inpatients
- ☐ Outpatients
- ☐ Patient Controls
- ☐ Fetuses
- ☐ Cognitively Disabled
- ☐ Physically Disabled
- ☐ Pregnant Women
- ☐ Participants Incapable of Giving Consent
- ☐ Prisoners or Institutional Individuals
- ☐ Other Potentially Elevated Risk Populations
- ☐ Participants related to the researcher(s)

## VII. RECRUITMENT OF PARTICIPANTS

1. **Contacting Participants:** Describe in detail *how* you will contact participants regarding this study. Please provide all materials used to contact participants in this study. These materials could include letters, emails, flyers, advertisements, etc. If you will contact participants verbally, please provide a script that outlines what you will say to participants.

**A letter will be emailed to all middle school teachers but only teachers who are familiar with epilepsy will be considered. Randomly selected teacher participants who agree to participate in the study and who are familiar with epilepsy will be contacted via email throughout the entire research study.**

2. **Location of Recruitment:** Describe the location, setting, and timing of recruitment.

**Recruitment will take place during the Fall 2014 semester at a middle school in Quispamsis, NB, Canada.**

3. **Screening Procedures:** Describe any screening procedures you will use when recruiting your participant population.

**N/A**

4. **Relationships:** State the relationship between the PI, faculty advisor (if applicable), and participants. Do any of the researchers have positions of authority over the participants such as grading or professional authority (e.g., the researcher is the participants' teacher or principal)? If a position of authority exists, what safeguards are in place to reduce the likelihood of compromising the integrity of the research (e.g., addressing the conflicts in the consent process and/or emphasizing the pre-existing relationship will not be impacted by participation in the research, etc.)?

**N/A**

5. **Safeguarding for Conflicts of Interest:** Are there any relevant financial relationships? What safeguards are in place to reduce the likelihood of compromising the integrity of the research (e.g., addressing the conflicts in the consent process and/or emphasizing the pre-existing relationship will not be impacted by participation in the research, etc.)?

No

## VIII. RESEARCH PROCEDURES

1. **Description of the Research\*:** Write an original, non-technical, step-by-step description of what your participants will be required to do during your study and data collection process, including information about how long each procedure should take. Do not copy the abstract/entire contents of your proposal. *(Describe all steps the participants will follow. What do the data consist of? Include a description of any media use here, justifying why it is necessary to use it to collect data).*

**Participants will be asked to complete a consent form before being allowed to participate in the study. Participants will be asked to participate in a face-to-face interview. Participants will be asked to complete a survey. Participants will also be asked to participate in a focus group. The interviews and focus group will be audiorecorded. Audiorecording is necessary in order to obtain a transcription of the interviews and the focus group discussion.**

**The face-to-face interview will take place once at a specified location within the school during office hours and will be approximately 40 minutes in length. One survey will be given to participants to complete during school hours at a specified location within the school and the allotted timeframe will be 30 minutes. The focus group will take place once during school hours at a specified location within the school and the allotted timeframe will be 60 minutes.**

**\*Also, please submit one copy of all instruments, surveys, interview questions or outlines, observation checklists, etc. to [irb@liberty.edu](mailto:irb@liberty.edu) with this application.**

2. **Location of the Study:** Please describe the location in which the study will be conducted (Be specific; include city and state). **Quispamsis, New Brunswick, Canada**

## IX. DATA ANALYSIS

1. **Estimated number of participants to be enrolled in this protocol or sample size for archival data: Six**



2. **Describe what will be done with the data and the resulting analysis:** The following data collection methods will be used in this study: a) interviews, b) surveys, and c) focus group. The following data analysis methods will be used in this study: a) bracketing, b) phenomenological analysis based on the Stevick-Colaizzi-Keen method, and c) memo writing.

## X. PROCESS OF OBTAINING INFORMED CONSENT

1. **Consent Procedures:** Describe in detail how you will obtain consent from participants and/or parents/guardians. Attach a copy of all informed consent/assent agreements. The IRB needs to ensure participants are properly informed and are participating in a voluntary manner. *Consider these areas: amount of time spent with participants, privacy, appropriateness of individual obtaining consent, participant comprehension of the informed consent procedure, and adequate setting.* For a consent template and information on informed consent, please see our [website](#). If you believe your project qualifies for a waiver of the signature requirement on the informed consent document, note that here and describe how you will provide participants with the informed consent document. Then go to section XV, and answer its questions. **Each teacher participant will be asked to complete an informed consent agreement before being allowed to participate in the research study. As mentioned above there are three data collection methods that will be implemented. In this study each participant will be interviewed first and it will be at this time that each participant will be asked to complete the consent form.**
2. **Deception:** Are there any aspects of the study kept secret from the participants (e.g. the full purpose of the study)?
  - a. ☒ No
  - b. ☐ Yes
    - i. If yes, describe the deception involved and the debrief procedures. Attach a post-experiment debriefing statement and consent form offering participants the option of having the data destroyed:
3. **Is any deception used in the study?** (Are participants given false information about any aspect of the study?)
  - a. ☒ No
  - b. ☐ Yes
    - i. If yes, describe the deception involved and the debrief procedures. Attach a post-experiment debriefing statement and consent form offering participants the option of having the data destroyed:
4. **Will participants be debriefed?**
  - a. ☒ No
  - b. ☐ Yes
    - i. Attach a copy of your debriefing statement. If the answer to protocol question IX (3) is yes, then the investigator must debrief the participant. If your study includes participants from a participant pool, please include a debrief statement.

## **XI. WAIVER OR MODIFICATION FOR REQUIRED ELEMENTS IN INFORMED CONSENT PROCESS**

1. A waiver or modification of some or all of the required elements of informed consent is sometimes used in research involving deception. Some research studies also qualify for a waiver of the requirement to obtain informed consent. If requesting a waiver of consent, please address the following:
  - a. Does the research pose no more than minimal risk to participants (i.e., no more risk than everyday activities)? **No** and
  - b. Will the waiver have no adverse effects on participants' rights and welfare? **No** and
  - c. Would the research be impracticable without the waiver? If "yes," please explain.  
and
  - d. Will participant debriefing occur (i.e., will pertinent information about the study be reported to participants at a later date)? Please explain your response.

## **XII. PARENTAL/GUARDIAN PERMISSION\***

1. **Does your study require parental/guardian permission?** (If your intended participants are under 18, parental/guardian consent is required in most cases.)
  - a. ☐ Yes
  - b. ☒ No
2. **Does your study entail greater than minimal risk, without potential for benefit?**
  - a. ☐ Yes (If so, consent of both parents is required.)
  - b. ☒ No

\*Please refer to the Office for Human Research Protections (OHRP) regulations ([45 CFR 46.408](#)) to determine whether your project requires parental consent and/or child assent.

This is particularly applicable if you are conducting education research.

## **XIII. ASSENT FROM CHILDREN AND WITNESS SIGNATURE**

1. **Is assent required for your study?** Assent is required unless the child is not capable (age, psychological state, sedation), or the research holds out the prospect of direct benefit that is only available within the context of the research. If the consent process (full or part) is waived, assent may be also. See our [website](#) for this information.
  - a. ☐ Yes
  - b. ☒ No
2. **Please attach assent document(s) to this application.**

## **XIV. CHECKLIST OF INFORMED CONSENT/ASSENT**

1. **Attach a copy of all informed consent/assent documents.** Please see our [Informed Consent materials](#) and utilize our informed consent template to develop your document.

## **XV. WAIVER OF SIGNED INFORMED CONSENT DOCUMENT**

1. A waiver of signed consent is sometimes used in anonymous surveys or research involving secondary data. This does not eliminate the need for a consent document, but it does eliminate the need for a signature(s). If you are requesting a waiver of signed consent, please address the following (yes or no):
  - a. Would the signed consent form be the only record linking the participant and the research? *and*
  - b. Does a breach of confidentiality constitute the principal risk to participants? *or*
  - c. Does the research pose no more than minimal risk to participants (i.e., no more risk than everyday activities)? *and*
  - d. Does the research exclude any activities that would require signed consent in a non-research context?
  - e. Will you provide the participants with a written statement about the research (i.e., an information sheet that contains all the elements of the consent form but without the signature lines)?

## **XVI. PARTICIPANT PRIVACY AND CONFIDENTIALITY**

1. **Privacy:** Describe what steps you will take to protect the privacy of your participants. Privacy refers to persons and their interest in controlling access to their information. **The identities of each participant will be concealed by using pseudonyms to protect their identities and study location. All information obtained throughout the study will be placed in a safe and secure location where only individuals involved in the research study will be able to access the data.**
2. **Confidentiality:** Please describe how you will protect the confidentiality of your participants. Confidentiality refers to agreements with the participant about how data are to be handled. Indicate whether the data are archival, anonymous, confidential, or confidentiality not assured and then provide the additional information requested in each section. The IRB asks that if it is possible for you to collect your data anonymously (i.e. without collecting the participants' identifiable information), please construct your study in this manner. Data collection in which the participant is not identifiable (i.e. anonymous) can be exempted in most cases.
  - a. **Are the data archival (e.g. data already collected for another purpose)?\***
    - i. ☐ Yes (please answer b-e below)
    - ii. ☒ No (please skip to 3)

**\*Please note: if your study only includes archival data, answer no to 2-b, 2-c, 2-d, and leave 2-e**

**blank.**

- b. **Are the data publicly accessible?**
- i. ☐ Yes (Please answer below)
    - 1. Please provide the location of the publicly accessible data (website, etc.).
  - ii. ☐ No (Please answer below)
    - 1. Please describe how you will obtain access to this data and provide the committee with proof of permission to access the data.
- c. **Will you receive the data stripped of identifying information, including names, postal addresses, telephone numbers, email addresses, social security numbers, medical record numbers, birth dates, etc.?**
- i. ☐ Yes (see below)
    - 1. Please describe who will link and strip the data. Please note that this person should have regular access to the data and he or she should be a neutral third party not involved in the study.
  - ii. ☐ No (see below)
    - 1. If no, please describe what data will remain identifiable and why this information will not be removed.
- d. **Can the names of the participants be deduced from the data set?**
- i. ☐ Yes (see below)
    - 1. Please describe.
  - ii. ☐ No
    - 1. Initial the following: I will not attempt to deduce the identity of the participants in this study:
- e. **Please provide the list of data fields you intend to use for your analysis and/or provide the original instruments used in the study.**
3. **Are the data you will collect anonymous?** (Data do not contain identifying information including names, postal addresses, telephone numbers, email addresses, social security numbers, medical record numbers, birth dates, etc., and cannot be linked to identifying information by use of codes or other means. If you are recording the participant on audio or videotape, etc., this is not considered anonymous data).
- a. ☐ Yes (see below)
    - i. Describe the process you will use to collect the data to ensure that it is anonymous.
  - b. ☒ No
4. **Can the names of the participants be deduced from the data?\***
- a. ☐ Yes (see below)
    - i. Please describe:
  - b. ☒ No

**\*If you agree to the following, please type your initials: I will not attempt to deduce the identity of the participants in the study: TF**

- 5. Will your data contain identifying information and/or be linked to identifying information by use of codes or other means?** Please note that if you will use participant data (such as photos, videos, etc.) for presentations beyond data analysis for the research study (classroom presentations, library archive, conference presentations, etc.) you will need to provide a materials release form to the participant.
- ☐ Yes (see below)
    - Please describe the process you will use to collect the data and to ensure the confidentiality of the participants. Verify that the list linking codes to personal identifiers will be kept secure and separate from the data by stating where it will be kept and who will have access to the data and linking codes.
  - ☒ No
- 6. Will you handle and store the data in such a way as to prevent a breach in confidentiality?** Please note that if you will use participant data (such as photos, videos, etc.) for presentations beyond analysis for the research study (classroom presentations, library archive, conference presentations, etc.) you need to provide a materials release form to the participant.
- ☒ Yes (see below)
  - ☐ No (see below)
    - Please describe why confidentiality will not be assured.
- 7. Please describe how you will maintain confidentiality of the data collected in your study.** This includes how you will keep your data secure (i.e. password protection, locked files), who will have access to the data, and methods for destroying the data once the three year time period for maintaining your data is up. **The identities of each participant will be concealed by using pseudonyms to protect their identities and study location. All information obtained throughout the study will be placed in a safe and secure location where only individuals involved in the research study will be able to access the data. Consent forms, data, and audio recordings will be destroyed after three years. Consent forms will be destroyed using a paper shredder and discarded via a paper shredding service. Data and audio recordings will be deleted from electronic devices.**
- 8. Media Use:** If you answer yes to any question below, in question VI (1), [Description of Research](#), please provide a description of how the media will be used and justify why it is necessary to use the media to collect data. Include a description in the Informed Consent document under "What you will do in the study."
- Will the participant be audio recorded? ☒ Yes ☐ No
  - Will the participant be video recorded? ☐ Yes ☒ No
  - Will the participant be photographed? ☐ Yes ☒ No

- d. Will the participant be audio recorded, video recorded, or photographed without their knowledge? ☐ Yes  
☒ No
- e. If yes, please describe the deception and the debriefing procedures: Attach a post-experiment debriefing statement and a post-deception consent form offering participants the option of having their tape/photograph destroyed.
- f. If a participant withdraws from a study, how will you withdraw them from the audiotape, videotape, or photograph? **If a participant withdraws from the study, I would not use the data obtained from their audiotaped face-to-face interview. I would also not include data obtained from them during the focus group and their portion would not be included in the transcription.**
  - i. Please add the heading *How to Withdraw from the Study* on the informed consent document and include a description of the removal procedures.

**\*Please note that all research-related data must be stored for a minimum of three years after the end date of the study, as required by federal regulations.**

## **XVII. PARTICIPANT COMPENSATION**

1. **Describe any compensation that participants will receive.** Please note that Liberty University Business Office policies might affect how you compensate participants. Please contact your department's business office to ensure your compensation procedures are allowable by these policies. **Participants will not receive compensation for participating in the study.**

## **XVIII. PARTICIPANT RISKS AND BENEFITS**

1. **Risks:** There are always risks associated with research. If the research is minimal risk, which is no greater than everyday activities, then please describe this fact. **The research is minimal risk to the participants involved in the study.**
  - a. Describe the risks to participants and steps that will be taken to minimize those risks. Risks can be physical, psychological, economic, social, legal, etc. **N/A**
  - b. Where appropriate, describe any alternative procedures or treatments that might be advantageous to the participants. **N/A**
  - c. Describe provisions for ensuring necessary medical or professional intervention in the event of adverse effects to participants or additional resources for participants. **N/A**
2. **Benefits:** Describe the possible direct benefits to the participants. If there are no direct benefits, please state this fact. **There are no direct benefits to the participants.**
  - a. Describe the possible benefits to society. In other words, how will doing this project be a positive contribution and for whom (keep in mind benefits may be to society, the knowledge base of this area, etc.)? **Although the teacher participants will not receive direct benefits from the study, society as a whole may benefit. The benefits for society would be to decrease or eliminate the stigma associated with epilepsy by educating teachers about epilepsy and how to**

properly care for students who have epilepsy as well as decreasing or eliminating the stigma associated with epilepsy.

3. **Investigator's evaluation of the risk-benefit ratio:** Please explain why you believe this study is still worth doing even with any identified risks. **This study will be beneficial to teachers, students, and society because the study's findings may be used by school administrators to create and implement teacher-educational programs about epilepsy. These administrator-led programs can mitigate the stigma associated with epilepsy and improve the learning environments for these students.**

Appendix D  
School District Consent Form

Date: *[Insert Date]*

*[Recipient]*

*[Title]*

*[Company]*

*[Address 1]*

*[Address 2]*

*[Address 3]*

How Educator Attitudes, Knowledge, and Practice Impact the Academic Achievement of  
Students Who Have Epilepsy: A Phenomenological Investigation of Canadian Secondary School  
Teachers

Dear *[Recipient]*:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctorate degree. The title of my research project is How Educator Attitudes, Knowledge, and Practice Impact the Academic Achievement of Students Who Have Epilepsy: A Phenomenological Investigation of Canadian Secondary School Teachers and the purpose of my research is to discover how teacher attitudes, knowledge, and practice with epilepsy impact the academic achievement of middle school students who have epilepsy and who live in New Brunswick, Canada. I am writing to request your permission to conduct my research in the Anglophone West School District. Participants will be asked to meet with me at a specified location at the school to participate in a face-to-face interview and to complete two surveys. Participants will also be asked to participate in a focus group to be scheduled for a later date. The data will be used to obtain information about teacher attitude,



knowledge and practice with epilepsy directly from teachers who teach in a middle school located in New Brunswick, Canada. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time.

Thank you for considering my request. If you choose to grant permission, please respond by email to [tfanjoy@liberty.edu](mailto:tfanjoy@liberty.edu). For educational research, school district permission will need to be on approved letterhead with the appropriate signature(s).

Sincerely,

Ms. Tawnya Fanjoy, MA  
Doctoral Candidate

## Appendix E

### Transcriptions

#### Transcription One - Elizabeth

1. Tell me what you believe about the academic abilities of students who have been diagnosed with epilepsy.

We are inclusive educators, and I don't feel that epilepsy plays any role in how a student performs academically.

2. What are your feelings about students who have epilepsy being immersed into regular education classrooms?

That is exactly where they should be. All of our students are immersed into regular classrooms. We do very little pullouts. Our EAs work in the classroom with students. It is completely inclusive.

3. Tell me what procedures you would implement to help a student with epilepsy during a seizure.

I am not sure I can answer that because I have not personally had any training in that area.

4. Tell me what you believe about the level of knowledge that teachers should have about epilepsy.

Obviously, if we had a student in our building that was epileptic the whole ESS team as well as teachers who teach that child would definitely meet with parents in advance and be educated on how to do that. But like I said because we do not have any students currently we do not have any training I have attended any training sessions for that. So our teachers would not really be educated in that area unless they have their own personal education.

5. Tell me where you obtain or would information about epilepsy?

If we needed to it would obviously come first hand either from parents or when we do transition in late Spring like may May/June area with feeder schools they often will let us know about any medical issues with students who are coming to us so they would alert us and then we would normally meet with the parents in September or late August before school started. But those would definitely be the two biggest sources, the feeder school or the parents.

6. Describe the training that you have received to teach students who have epilepsy.

I don't really know how to answer that I am not sure, my guess would be that the parents would probably offer some training because they would be specialists about their child. But as far as professional training that would probably be mentioned through First Aid Training, and not

many people unfortunately, are up-to-date with First Aid, it is not a PD session that is offered very often...Unfortunately.

7. Describe the training that you have received to properly help students who have epilepsy during a seizure.

I haven't received any personal training because I have never had to deal with it.

8. Describe your feelings about having students who have epilepsy in your classroom.

I don't have any feelings I guess because to me it is not really it just not an issue they would be in a regular classroom 24/7 just like anybody else they would not stand out or segregated in any way so it is just a non-issue.

9. Tell me how the stigma associated with epilepsy can impact the academic achievement of students who have been diagnosed with epilepsy.

Well, this is just my own personal opinion, but I am assuming like anything of that nature if a student feels that they are being bullied or teased or made fun of it is going to affect them socially and mentally I guess is in how they respond in the classroom to teachers or to students so in affect it could alter their education, not necessary abilities, but if they are withdrawn, upset, feeling bullied, or peer pressured they may not do the best academic job that they necessarily could.

10. Tell me how you would feel if you found out someone in your family was diagnosed with epilepsy?

I am actually epileptic, I was diagnosed when I was sixteen, I do not know of any other family members who have epilepsy. I should probably note because you are probably saying if you are epileptic how can you not have any training. I was only epileptic, having seizures for two years, and by the time I was 19 I was seizure free and I have been seizure free ever since and I am 38 so it is not a part of my life any longer but I was diagnosed some time ago.

11. Is there anything else about epilepsy that relates to teaching that you would like to mention at this time?

I guess the only important information that a teacher would be required to know, who the epileptic student is, some background knowledge, pertinent information about medications, or how to treat the student if they had a seizure, and how to help that student until help arrives. But as far as academics it does not play a role at all in how the student learns or how we teach that student. It is strictly medical only and as a teacher that is all that I feel I would need to know.

Transcription Two - Dean

1. Tell me what you believe about the academic abilities of students who have been diagnosed with epilepsy.

I believe that students who have epilepsy are as academically able as students who do not have epilepsy.

2. What are your feelings about students who have epilepsy being immersed into regular education classrooms?

I think that is an integration that should be able to happen with relative ease. I guess I should tell you what I know about epilepsy, and I know that they experience seizures and they can be interruptive to learning of course because it takes awhile for them to recover afterward. But depending on the severity of the seizures I guess it would be depend but I expect that they should be able to be integrated into a regular classroom with relative ease.

3. Tell me what procedures you would implement to help a student with epilepsy during a seizure.

Well, I come from a lack of experience here but I recall knowing that you have to be cautious about making certain that when they are in their seizures they don't hurt themselves that I think that they could bite their tongue. And certainly preventing them from banging their head in the event of a seizure or damaging their bodies in some way. So you would have to cover all that...those precautions.

4. Tell me what you believe about the level of knowledge that teachers should have about epilepsy.

Well, I think it is incumbent that teachers learn that the Quality Management (QM) file review would be a part of learning that and that's their professional responsibility.

5. Tell me where you obtain or would information about epilepsy?

Well, I cannot cite my sources, I only know that in the event that there is a student in your student body who does experience epileptic seizures then there are short listed on those will medical concerns. That is how I learn about that, I have not done any specific as a what you might learn autistic learning or about those types of handicaps. I would use educational journals.

6. Describe the training that you have received to teach students who have epilepsy.

I haven't received any specialized training. I have specialized training in terms of someone who is experiencing a heart attack, or somebody who is oppositional defiant, or somebody who is dyslexic. Those are the only specialized training I have received, I have not received anything related to epilepsy.

7. Describe the training that you have received to properly help students who have epilepsy during a seizure.

No, I have not received that training.

8. Describe your feelings about having students who have epilepsy in your classroom.

Well, it is a special needs concern so you would have to certainly I would want to have the background information, I would want to have a relationship with the parents and what their expectations are, consultation with the educational psychologist, or if there has been an intervention and I properly informed about what to do.

9. Tell me how the stigma associated with epilepsy can impact the academic achievement of students who have been diagnosed with epilepsy.

I do not think that it is any more stigmatized than other learning disabilities. I was saying earlier you have to do your homework. Understanding it is the first step and then prescribing differentiated education in terms of safety.

10. Tell me how you would feel if you found out someone in your family was diagnosed with epilepsy?

Well, it would not be good news of course. If I learned that someone in my family having that diagnoses, I would want to arm myself by doing as much up-to-date research in how you can go about your day to day living and look after the special needs of that individual.

11. Is there anything else about epilepsy that relates to teaching that you would like to mention at this time?

Your request for teachers to participate in your research, I was intrigued by epilepsy, I was thinking I really do not know a lot about that. I do not know how often it occurs, I know that is grand mal and petit mal and those types of thing and I am not really sure how it does impact a student's learning.

Transcription Three - Lynne

1. Tell me what you believe about the academic abilities of students who have been diagnosed with epilepsy.

As far as ability goes they have every opportunity for academic successes as every other student does. However, I do know that there are difficulties associated with students who have epilepsy. For instance, memory with one student in particular that I am thinking of, she had to be very organized, number one, and she had to have everything written down for her on an almost daily basis...but this student had brain surgery where part of hippocampus had been removed. She had a difficult time with memories turning into long term memories so she had to have an agenda and had to re-teach herself every single day. She had to be very aware of herself as a learner and her needs as a learner. She was a different case from most people. But as far as ability goes she was very successful academically but she did so intentionally. She was very intentional in her learning and what her needs were as a learner.

2. What are your feelings about students who have epilepsy being immersed into regular education classrooms?

Well, I do not think that there is any problem at all having a student who has epilepsy in our classrooms. The only thing that we have to be aware is to make other students and other teachers in the classroom aware of what is happening. I know that sometimes that students do not want other students to know but if a seizure were to happen in the classroom, then I think that it is important for other members of the class do know that they can respond appropriately.

3. Tell me what procedures you would implement to help a student with epilepsy during a seizure.

I would not say that is easy but that has happened to me. It is something that I have done my own research on and studied quite a bit. I know that it is very important to teach people not to panic first of all, that are things that we can do to help, such as allowing for lots of space around the person who is having the seizure. Attempting to protect from some kind of injury, such as if there is a jacket nearby because there will not be a blanket or a pillow in a classroom, but find a jacket or something, that they can take off easily or a sweater to try to put it on the floor close to the person to protect them from being injured during a seizure. If the person is wearing something tight around the neck, for instance we have some hockey players in our school who have to wear a shirt and tie on their hockey days, so if there is something tight around their neck try to loosening that item that is around the neck. Putting something under their head...I think I mentioned that. Turning the person onto his or her side so that they do not choke. I think that is all that I would know about it... unless... well there are things that we should definitely NOT do as well like to try to hold the person down to stop them from seizing obviously we would not want to do that or put something in their mouth.

4. Tell me what you believe about the level of knowledge that teachers should have about epilepsy.

Well, I have a personal feeling about this and then a realistic feeling about this. I do not think that it is possible for every teacher to know about every condition out there but I do think that it is a responsibility that we have if we have a student in our school who has any condition whether it is epilepsy or something else we do have a responsibility to educate ourselves so that we can help to protect that person in our classroom should something happen and also to make that person feel more at ease. Everyone wants to see themselves represented I guess so we want to know if something is wrong or the perception that something is wrong with us and we want others to know what the real deal is...Right...so. If I had epilepsy I would want others to know how to respond to me and would want others to know that I am not some kind of freak in the classroom. I would want them to know what is going on in my brain so that they can respond appropriately and not think that I am just weird or that they are going to get from me or that is contagious. I just want people to understand who I am so I think that educators have a responsibility to our kids no matter what the condition is.

5. Tell me where you obtain or would information about epilepsy?

My history with epilepsy comes from a family perspective so as a family we had to learn early on how to respond to seizures because I have a cousin who has epilepsy. So most of our research was through personal interest and finding out the process, my cousin and I were very close growing up, so we through a process of finding out what set her seizures off and what she was sensitive to. We did have a lot of medical research through her doctors and a family doctor who is close to our family. But I have done some of my own research as well, some of it was trial and error with her, for instance she has sensitivity to herbs and spices, and finding out which one it was and then going online to find if there was any researched connection to the herb that she was responding to and we found out that there was. In our school right now I helped to organized Purple Day, went on the Purple Day website quite a bit, and we are actually doing a fund raiser this Thursday is Purple Day, for the Epilepsy Foundation of Nova Scotia. We are going to try to raise a little bit of money for them this year.

6. Describe the training that you have received to teach students who have epilepsy.

No, formal training.

7. Describe the training that you have received to properly help students who have epilepsy during a seizure.

No, formal training again. On our staff, at our school, I would be the only person on staff that has a personal connection to a family member who has epilepsy. So I am the one who does the pushing for Purple Day and raising awareness in our school, I am not so sure that if I was not there that there would be any teaching happening. I think that because of my personal connection, it is something that I am quite passionate about, I do think that teachers in our school are more aware and I provide them with some resources and posters and website links that they can use, some of the information that I shared with them, during their health classes for example. But no formal training, it is not anywhere in our curriculum to teach..it is just something, as with many things that happens in school, it is something that one person takes on and spreads.

8. Describe your feelings about having students who have epilepsy in your classroom.

I think that it is quite clear that feel absolutely fine about it. Again, my concern is making sure that everyone in my classroom is aware of what could happen. I would not want, and again I know that there are mixed feelings about this because the student with epilepsy does not want people to know, but should a seizure happen in my classroom I would want my students to know how to respond. I would not be stressed to have a student who has epilepsy in my classroom by any means but I would want my class to be aware of what could happen and how to respond so that the person who may have a seizure in the classroom does not feel too awkward after a seizure if that were to happen in the classroom.

9. Tell me how the stigma associated with epilepsy can impact the academic achievement of students who have been diagnosed with epilepsy.

I do know that there is a significant amount of stigma associated with it. I think the stigma mostly comes from being, not misunderstood, but not understood at all. It seems to be a condition, that again is not taught in a curriculum and unless you do not have a family member with epilepsy it is not something that is common. I am not sure if I have this statistic correct but about 1 out of every 100 people that have epilepsy, it is not common in our area that is for sure. The stigma comes I think comes for the person who has epilepsy from a lack of seeing yourself reflected in other people, a feeling of people do not understand what it is really all about, people see me having a seizure they might think that there is something electrically wrong in my brain but that does not mean that I cannot learn like you do and it does not mean that I am going to pass my sickness onto you. It is just a misunderstanding that we really have to work at correcting. Again, that is not going to happen unless you have a passion about building awareness.

10. Tell me how you would feel if you found out someone in your family was diagnosed with epilepsy?

It was not something that we understood at all. I was not a young child when she was diagnosed I was a teenager but I knew nothing about epilepsy at that time until this happened to our family. Again I was really close with this cousin, so she was able to talk to me a lot and help me understand what was going on and because she and I had a really good relationship she felt comfortable talking to me about it. I think that as far as family members go there was a lot of fear on her behalf because she finished school in our local area and went off to university where she was becoming an independent adult and having grand mal seizures that could occur at any time. You know crossing a city street she could have a seizure so there are concerns trying to help her understand that as independent as she was even moving in to high school she was the type of person that did not really want any help from other people. She wanted to demonstrate her independence, her mom was a little over protective and she wanted to get away from that. And even yet from a cousin perspective, I understood how important it was for her to have someone with her. How do you tell a university student that it is if you are walking across the street it would be really great to have someone with you. How to explain these things to a girl who is trying to find her independence? Maybe some of her mom's over protective feelings passed on to me but I understood that as a teenager how it was important for her to take precautions to protect herself.

11. Is there anything else about epilepsy that relates to teaching that you would like to mention at this time?

I teach middle school so it certainly not something that you would find in the curriculum. I think that is really important to have a basic understanding of what exactly is happening to the brain when a seizure does happen. There are things that teachers can do to support students with have epilepsy. Focusing on differentiation strategies, and we work at that all the time to meet the needs of all of the learners in our classroom but just being aware. I guess I do not really understand all of the impacts on learning with epilepsy. I can only speak from personal



experience. I had one student who had epilepsy and I have a cousin who has epilepsy. I do not know how learning is impacted. I think that is really important for teachers to understand that so that they can best meet the needs of the student. Again, we do that all the time we are always seeking strategies to meet the needs of all the learners in our classroom. But I think that it would be awesome if someone would make it easier for us. You know a quick tool, quick strategies for teachers to use to see if learning is happening. An information package that gets down to the nitty-gritty, the down and dirty, because if it is a book teachers are not going to read it. It has to be something precise and very simple.

#### Transcription Four - Marie

1. Tell me what you believe about the academic abilities of students who have been diagnosed with epilepsy.

I guess speaking from experience with students who have epilepsy in the school. I would say that they are completely capable of doing exactly what I expect of any other student.

2. What are your feelings about students who have epilepsy being immersed into regular education classrooms?

I think that it is extremely important. Especially that we have an inclusive nature with any physical cognitive delays anything. We have come into a society that we have already passed laws saying that they should not be stigmatized or look differently, or seen as segregated. I think that is extremely important for their own social wellbeing, mental wellbeing to be submersed as part as the classroom and seen as that they are no different.

3. Tell me what procedures you would implement to help a student with epilepsy during a seizure.

Again, I am going to speak from experience. We had a student who has had epilepsy in fact in the past couple of years. They were not sure whether if it was the growing spurts it was on or his medicine was not balanced. He had seizure at least once a week for a good 6 or 7 months, it was getting very severe and so our procedure at the school is get him to the ground and on his side as soon as that happens we press the call button. The call button goes to administration and says that we need someone now. That administration does a policy 704, I not sure if you are aware if what that is or not, but it is policy for students who have any medically fragile situation that needs outside help. They follow that 704 policy to a T which gets in touch with calling 911, calling parents, administering any medicines. But our mandate is to get them on the floor, get them on their side, have the room be evacuated from any student so that it preserves some sort of dignity, and to have the police called as soon as possible.

4. Tell me what you believe about the level of knowledge that teachers should have about epilepsy.

I think it is important them to know. That being said most teachers will not take it seriously until they have been introduced to a student who has epilepsy. I know that is becoming a reoccurring

diagnoses that is happening in our schools, but that being said unless you have direct knowledge of a student who has epilepsy the teacher will not take that seriously and not do anything about the knowledge. Thankfully, because our school is very small, a 6 to 12 school, so everyone needed to be aware of the situation because at some point every teacher will be in contact with this student. And since then we have had 4 or 5 students who have epilepsy that have come through. I think that it is important, that being said unless your with a student who is enrolled in your classroom who has epilepsy, a teacher will say that I have got too much on my plate and that is one more thing I need to learn.

5. Tell me where you obtain or would information about epilepsy?

A few places, so I am going to be really honest I did not know much about epileopsy prior to students coming into my building and so with that I have done a few things. Number one, we are given regular staff meetings about how to handle and what epilepsy is, plus a nurse comes in whenever there is something that is affecting our school, and I believe that a lot of schools do this as well, they bring a nurse in to explain what it is and what are the procedures are and how to deal with it. Plus we have professional development on it, we have had nurses come in, administration come in, we have had parents come in and explain this is what is going on with my son or daughter and this is what you need to know so I feel safe leaving my child here. And also because it is very alarming to have something like this happen in your classroom, I did, and I am not saying every teacher will, but I did do some research at home, just from the internet, what I could find out so that I was more equipped with how to handle situations.

6. Describe the training that you have received to teach students who have epilepsy.

Both, so like I said we had a nurse come in and literally go over this is the proper procedure of how to handle if there is a seizure and what to do...especially, like I said where we had such a severe case, we really needed to know what we do and I mean in just in class but he went to dances, he was on the basketball team and the soccer team. We really needed to know how to handle situations, so we've had a nurse, we had the parents come in, we done online research, and had administration come give us some training as well. So there is certain signs to watch for, biting on inside of cheek and a dazed confused look. There certain triggered signs. You literally go to student and say "so and so" are you okay. If there is a silly response, it usually indicates there is something wrong. If student, responses that I am fine and then they are fine. There signs we have to look for and were told about to help us do it.

7. Describe the training that you have received to properly help students who have epilepsy during a seizure.

This was answered in Question 6.

8. Describe your feelings about having students who have epilepsy in your classroom.

Prior to having somebody with epilepsy in my classroom, I really did not understand the severity of it and so I did not see an issue, I did not see a concern and I said that student is treated like any other student. Afterwards, two things, 1) I still feel like that student should be in my room like

any else should be I believe that every has a right to learn something and be in my room and be a part of a group, that being said as soon as you are dealing with a seizure you can't help but feel, you take control of the situation because you are the adult in the room, but at the same time you can't help feel a little bit anxious, like oh my word, have I followed the steps, am I okay, is the student okay, is everything okay, are the people that weren't, because we were having after affects of other people that were not even, maybe in another classroom or even if they were in the classroom, they were crying because this is such a severe topic. So, I yeah I think it is okay, I have no problem with them being in the room, it is just that you do go through can I handle this if this were to happen? Am I okay?

9. Tell me how the stigma associated with epilepsy can impact the academic achievement of students who have been diagnosed with epilepsy.

Well, they certainly, I can see that they will have a stigma. I think that goes with educating our students, really because for instance, and we have 5 or 6, in one case the student was so brilliantly smart, the student was so smart and so students academically wise, at least in my school, the one student I am referring to was still doing his work and be on top of things and the student could miss a week of school and still totally understand what was going on.

Academically wise, I feel this student was okay. Socially wise, I worried that the student felt, it is embarrassing and I really did feel that sometimes. You know he would be at a dance and we would have to evacuate the gymnasium and so when you need to evacuate 300 students because of one student, he did feel socially awkward and uncomfortable and you can't not. Academically wise, you do as a teacher know how to equip yourself, and your colleagues, and your students with how to handle this there should be no reason in my opinion, academically, there should not be a stigma.

10. Tell me how you would feel if you found out someone in your family was diagnosed with epilepsy?

Having been through this, yeah I would be concerned of course, if any one in my had anything of course you would be concerned but I would feel at least now having gone through this, if I had not gone through any of this my answer could have very well be different, but having gone through this I can feel like I can help should a family member have ever have ever in the future or that I don't I am not aware of go through something like this. Like I say, my answer would totally change if I hadn't already gone through this. I would be in the know, I am the kind of person that would research what kind of foods can you have, what kind of medicine should you be on, I would really do a lot of research. That being said, I feel a lot more at ease now having going through some of this than if I hadn't.

11. Is there anything else about epilepsy that relates to teaching that you would like to mention at this time?

Well, I think that I have mentioned really what I think should be included but just a few things to sum it up. Number one, I really do believe that somebody, like a nurse or somebody in the medical field definitely needs to come out and even parents of epileptic children need to come out and talk about what the signs are, what happens afterwards, what medicines they are on, and

how to handle different situations so that teachers feel more in the know. The people that you are going to reach are the people that have already had experience with this in some manner, I hate to say that way, I really do, but we are so inundated as teachers with so much, that adding one more thing if you are not going to be privy to a student who has had this concern, it is just adding one more thing.

#### Transcription Five - Alberta

1. Tell me what you believe about the academic abilities of students who have been diagnosed with epilepsy.

Although I have not had a lot of experience with students who have epilepsy. My little bit of experience has taught me that it does not really affect their academic abilities in any way shape of form, unless their epilepsy and their seizures were so intense that they were missing quite a bit of school time.

2. What are your feelings about students who have epilepsy being immersed into regular education classrooms?

From my one experience with my one student that I worked it was several years ago. This student whenever she seemed to go through a seizure it was very, very embarrassing for her and although the academics weren't her problem, she was very concerned that something would take place and students would be, not judgmental, but maybe they would pity her or draw some unnecessary attention to her so she even asked for seating placement to sit near the back of the classroom and we had some signals that we used to see if she is okay, to see if her day is going well, to see if it was an irritable day for her, or if she was having any challenges that might maybe affect or cause a seizure. I believe that individuals who have epilepsy can be immersed in regular education classrooms.

3. Tell me what procedures you would implement to help a student with epilepsy during a seizure.

I was very lucky that only happened once and I was at the time with another teacher in the room who took charge so I am not well versed in what to do. I assume that you would probably want them to lie down on the floor, to not have objects that could harm themselves or others around them in case they knocked something over or where going to fall. I assume that you would probably roll them on their sides so that if they went unconscious or that they would not swallow a lot of saliva or may be their tongues. I am not quite sure. I am pretty sure that you are not suppose to pin someone down or hold them tightly, you are suppose to give them feel range to move freely to work through the seizure.

4. Tell me what you believe about the level of knowledge that teachers should have about epilepsy.

I would say based on what I know about how many students have been diagnosed at our school with this probably quite little. I think that they should have a strong knowledge of it but I don't

think that teachers experience it very often and so I do not think many would know what to do in a situation like that.

5. Tell me where you obtain or would information about epilepsy?

I haven't but if I needed to I am sure if I went to my resource department at our school. Our methods and resource teachers have a whole bunch of information that they can give us whenever we have a high needs student in our classroom that might need some extra attention. So they generally are very, very good at accessing some resources for us, I would go to them first before I would go anywhere else probably.

6. Describe the training that you have received to teach students who have epilepsy.

None, as of now.

7. Describe the training that you have received to properly help students who have epilepsy during a seizure.

They only background that I have is just what I know from taking some basic CPR courses, actually.

8. Describe your feelings about having students who have epilepsy in your classroom.

I don't really think, I guess I have never really thought of it before it is not a concern or a problem for me. I guess I would be concerned and would definitely request a meeting with the parents and with Resource and Methods just to make sure to be familiar to be with what is common with that student, how many seizures they have, what has been done in the past, what seems to trigger those seizures, is it different or similar to what you can expect from other students who have epilepsy. I would definitely would like to sit down with the student beforehand so I'd feel quite comfortable I think having a student with epilepsy in the classroom as long as I have been given a good amount of notice beforehand so that I could help them.

9. Tell me how the stigma associated with epilepsy can impact the academic achievement of students who have been diagnosed with epilepsy.

I guess I would need to know more about the triggers associated with epilepsy but I do not that the student I worked with at one time, public speaking, stress, she struggled and came from a challenging family background, and so if she was having a good day or bad day you could definitely see that take place in how she acted in the classroom, and I know that was a concern and I felt that if she comes from a high stress situation it could definitely could impact her academic learning in the classroom. I also wonder if it could impact her learning if she was may be teased by students who were less welcoming or bullied her in the past, so I think that it could potentially impact them, I guess it just depends on the classroom dynamic and how the teacher responds to the situation if it was to happen.

10. Tell me how you would feel if you found out someone in your family was diagnosed with epilepsy?

I think that I would need to know more about it but I would definitely be concerned for their own self-esteem how it would affect their self-esteem especially where it presented itself in a situation where it might have embarrassed them. I am thinking of a time where a person went into a seizure and I remember thinking that the person's family responded very, very well to the situation. They were not necessarily comfortable, but they were ready to act at that point, they had a lot of experience with it so I think that it is something that over time you would become more and more comfortable with, although it would be upsetting to know if someone who is recently diagnosed with epilepsy and how it would them and their everyday lives.

11. Is there anything else about epilepsy that relates to teaching that you would like to mention at this time?

I wonder what steps or precautions to use in the classroom. I am just kind of curious how prevalent it is with students. Like may be asking a question about how many students teachers may have taught who have epilepsy in the past and if they have noticed any differences or similarities from one student to the next, would be interesting I guess.

#### Transcription Six - Reba

1. Tell me what you believe about the academic abilities of students who have been diagnosed with epilepsy.

Well, I have never really thought there has been any difference between a student who has epilepsy verses another who doesn't.

2. What are your feelings about students who have epilepsy being immersed into regular education classrooms?

Everyone should have and can have equal access to all education. As my role as a resource teacher is that we accommodate and modify where necessary but if they are able to achieve the regular curriculum then their the classroom the same as every other student, and doing the same work.

3. Tell me what procedures you would implement to help a student with epilepsy during a seizure.

As a classroom teacher, the procedures as a classroom teacher I would implement, I would have a safe place where they could go especially if they knew they were having a seizure coming on. Recognizing what the symptoms are and if they have them. It might even come to running through what might be a safe way to have that if it was going to happen in the classroom, like have other students help, recognize what is necessary, put everything into place that is necessary, it might be special seating, anything that was required because I had students who have had absentee seizures and teachers did not notice it. Like they noticed that their kind of blanked out

but they don't recognize it as a seizure. And so explaining the kind of different things that could occur because of seizure and what the proper things are like proper positing, if somebody is going to have a grand-mal seizure or anything like that, putting them in the proper position, and making sure that nobody is freaking out cause they know what is happening. Usually, we put into place emergency measures for any student who may have that kind of thing, contact their parents immediately, put them in a proper position, make sure they are safe from harm, from other things around them, but also have to take into account other students around them too so I think educating them is one of the first steps.

4. Tell me what you believe about the level of knowledge that teachers should have about epilepsy.

You know what, I think more and more teachers are becoming aware of the types of seizures and the types of symptoms that show up before or the fact there may not be any symptoms. They are becoming more aware of that now...well I think that they should be aware of not only what happens when they are having a seizure, how long the effects may last, because some them honestly have seen these absentee seizures and then they think okay once they are out of it, they can come right back and do the work and that is not necessarily always the case, each student...their all different and they could have this complete exhaustion for awhile so the more education that we can give on that, you know the different types of epilepsy, and the results of having a seizure...what happens to them, and knowing their student is really important. I think that there can still be more education. I still do not think that teachers are getting enough of it. I think that they know what seizures are, and they know what epilepsy is, they are trained in terms of what safe positioning is, what to do for emergency procedures, but in terms of all the side effects and the physical effects of having seizures are, I do not that they are completely up-to-date on that...I think there could be more.

5. Tell me where you obtain or would information about epilepsy?

There is a lot of information online such as if you go to the Epilepsy Foundation kind of thing. I have been trained in it because of my special needs background. I have had experience with not only students I went to school with, a friend of mine who was an epileptic. And even 20 years later when I ran into at my reunion she was still having seizures but they were that kind of momentary standing, not grand-mal, more controllable ones, but she was still having them. You know thirty years ago they used to freak out a lot of people. Now I think that is a lot more knowledge out there, I think a lot more people are aware of what happens or occurs and they don't freak out anymore especially because of all the different types of students and everybody being brought back to the classroom and you know integration and everything..it is all there. I do not think that it is as scary as it used to be...so the level of knowledge is out there, where to find information. There is so much out there on the internet, and I would say that is probably the first place that people would go if they wanted to learn about it. But directing them to the proper website is important.

6. Describe the training that you have received to teach students who have epilepsy.

Well, I mean my training is, I am a resource teacher, so I have that background but in the classroom. I have been trained in it and I know what to do as a classroom teacher I would think that if I had any student with epilepsy I am going to be looking at their file, I am going to be finding out what kind of seizures they do have, I am going to get all that information, I am going to talk to the parents, I am going to ask how to deal with it, what are the medical repercussions, how long do they last, get all that information and you deal with it in the classroom. It is no different. You just do what you have to do.

7. Describe the training that you have received to properly help students who have epilepsy during a seizure.

Probably not what they do today. My education on it was over twenty years ago. So it was like basically going through journals, reading articles, cause you know you have basically the paperwork, not hands on. I did not really get hands on later until when I had students who had epilepsy. No, hands-on training in my education...basically all book learning.

8. Describe your feelings about having students who have epilepsy in your classroom.

I was not afraid. I had a dog that had epilepsy too. The only difference is that they are a human being and you have to train them, not so much as train them, but train everybody around them that this is normal...this is normal they are just different, you know everybody is different and this is something that is not to be afraid of, you don't have to be afraid of it, first of all there are very few deaths related to it.

9. Tell me how the stigma associated with epilepsy can impact the academic achievement of students who have been diagnosed with epilepsy.

As far as I am concerned it doesn't. It is a medical condition, like any other medical condition. Like I mean we just go on, we move on. It does not impact them academically. It is not, you know I mean it is a nervous brain disorder but it does not impact their ability to do the same work as everybody else.

10. Tell me how you would feel if you found out someone in your family was diagnosed with epilepsy?

Oh, I mean I would certainly be worried in terms of you know how it would affect their life differently, you know certain things like driving, you know handling different things, it depends on what they'd be doing, when they came on. Usually, people are diagnosed with this when they were young, Right? So, if you are growing up with it is different because you already know... if I found out right now that somebody in my family would be diagnosed with epilepsy, first of all do not have any kids, so that is kind of different that would be looking at my Dad and now he has epilepsy. Yeah, it would worry me because of things that would change in their life and that is really more of how would we adapt, not so much being afraid for their health in a way that is life threatening. It is more okay how do we adapt things that could potentially impact your health. So



what you do, I would not want my Dad out there with a chainsaw anymore. And driving may be impacted and you know those are huge factors to people. But I mean some of them can be controlled by medication so you know it is like any other illness or medical condition, you know out there and you see what we can do and what we cannot do.

11. Is there anything else about epilepsy that relates to teaching that you would like to mention at this time?

I think a lot of people out there have this picture in their head of what epilepsy is, that it is always grand-mal seizures, you are going to fall to the ground, the whole thing with biting their tongue or swallowing their tongue, you know, honestly there are people who think that. So I think a little more education in terms of there are all sorts of different kinds of seizures. Cause people just don't know that. It is like going back to a teacher I worked with that they reported that this student zoned out, where they on drugs and all this other stuff and I am like well did you know that they were having a seizure? And then I went on to describe what these absentee seizures, we call them absentee seizures, cause there are not physical outward signs of them having a seizure, what we think of as a grand-mal seizure, the shaking, so they do not recognize them sometimes for what they are, that they complain about what happens to the student and they say well you know they are there gone minute and they come back and they just cannot do any work. I think education in that format pertains to being a bit more level headed when it comes to putting expectations on students, you know understanding that at that moment they aren't in the classroom but hey be patient they'll come back, and you have to be aware and have a little empathy for the fact that they may be physically weak or things like that. I think education is the key to everything as far as I am concerned. The more they know , the more they understand, and the more open they are to having it around it and being able to accept what is there in front of them rather than being afraid of it.

## Appendix F

## Open Codes, Enumeration, and Themes

Open codes	Enumeration of open code appearance across data sets	Themes
Regular education classrooms/Inclusive teachers.	28	Students who have epilepsy should be included in regular education classrooms.
Academically able/capable.	11	Student who have epilepsy are no different than any other student.
No differences between students who have epilepsy and those who do not have epilepsy.	17	Teachers should be educated in epilepsy and work Resource Team.
Should be trained in the proper safety procedures to care for students who have epilepsy.	6	Teachers believed that there is stigma associated with epilepsy.
Need to accommodate and modify when necessary.	1	Teacher training needed to explain epilepsy in detail, its impact on learning.
Special needs issue.	1	Teachers believe that proper safety procedures need to be implemented.
Speak with the parents of students who have epilepsy to obtain background information and work with school Resource Team.	20	Teachers are not formally trained to teach students with epilepsy.
The class should be aware of epilepsy.	2	Teachers are not formally trained to effectively help during seizures.
Personal experience with epilepsy.	1	Epilepsy does not impact academic ability.
Doing own research i.e., via the Internet.	13	Teachers would be concerned if a family member diagnosed with epilepsy.
Do not have any students with epilepsy.	1	Teachers obtained information from internet and personal experience.

Need to know more about epilepsy.	1	
Do not have any formal training in how to teach students who have epilepsy.	11	
Would be concerned if family member was diagnosed with epilepsy.	9	
Do not have any formal training in how to care for a student during a seizure.	11	
Teachers need to use the Quality Management file.	1	
It is not possible for every teacher to learn about all conditions.	1	
Educators have a responsibility to educate themselves about epilepsy if they have student who has epilepsy in their classroom.	1	
Not many teachers will encounter a student who has epilepsy in their classroom.	1	
There are different types of epilepsy.	2	
Obtain information from feeder schools.	1	
Obtain information from journal articles.	1	
Obtained information from staff meetings during Development Days/Nurse speaker.	2	
Some students who have epilepsy may feel bullied.	2	
Teacher understanding of epilepsy is key to helping students who have epilepsy.	1	
Epilepsy is misunderstood.	1	
Stigma is associated with epilepsy.	8	
Epilepsy is a medical condition.	1	
Not sure if or how epilepsy impacts learning.	6	
Some teachers may possess an incorrect idea of epilepsy.	1	