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Pre-service Teacher Attitudes Relevant to  
Trauma-Informed Practice

by

Nina Howorun

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## Abstract

Childhood trauma is widely acknowledged to be a leading cause of a diverse range of physical, biological, psychological, and social-emotional impairments, and these factors undoubtedly have an impact on students' abilities to thrive academically and socially. However, while pre-service teachers are an important stakeholder group as future teachers, there is limited research on their perceptions of students demonstrating symptoms of traumatic stress and related trauma-informed practices/care (TIP/TIC). This study focused on pre-service teacher familiarity and attitudes regarding childhood trauma and TIP, through two main research questions: 1) What are pre-service teachers' attitudes towards TIP? and 2) Amongst the variables of age, gender, racial/ethnic identity, knowledge/familiarity with childhood trauma, knowledge/familiarity with TIP, and support for TIP, are there statistical group differences in ARTIC-35 mean scores? This study utilized the Attitudes Related to Trauma-Informed Care (ARTIC) scale, an instrument developed to evaluate TIC-relevant attitudes of staff working in settings serving individuals with histories of trauma. Online survey data was gathered from ( $N = 70$ ) participants recruited from the Bachelor of Education programs of four Alberta universities. Overall ARTIC-35 mean scores were calculated, and a series of one-way Analysis of Variances (ANOVAs), a Mann-Whitney U test, and independent samples t-tests were run using SPSS Version 26. Results showed that pre-service teachers demonstrated favourable attitudes towards TIC, 100% wanted to learn more about TIP, and there were statistically significant group differences between the variables of "familiarity with childhood trauma" and "familiarity with TIP" with overall ARTIC-35 mean scores. Additionally, four interconnected themes were developed using open-ended question data, including: 1) teachers should understand the underlying/root cause of students' behaviours to improve their teaching practices; 2) knowledge of trauma and TIP could enhance empathic responses to problematic behaviour; 3) knowledge of trauma and TIP could contribute to teachers feeling better prepared to support students who exhibit symptoms of trauma; and 4) trauma in the classroom is inevitable, and teachers must have the knowledge and skills to address symptoms of trauma and create a safe learning environment. The

study concludes with a discussion of ethical considerations, implications related to the findings, and directions for further research.

*Keywords:* Trauma-Informed Practice (TIP), Trauma-Informed Care (TIC), childhood trauma, pre-service teacher education, educational psychology, ARTIC Scale, Adverse Childhood Experiences (ACE), trauma-informed educational practices.

## Preface

This thesis is original, unpublished, independent work by the author, N. Howorun.

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## Dedication

This thesis is dedicated to my mother, whose lifelong passion and gift for helping others motivates me to do the same. Mom, I know you had a hard life, and yet you consistently (to this day!) put everyone else's needs before your own. I hope you know how proud I am of you and your many accomplishments, despite all the tribulations. And who knew you were engaging in trauma-informed practice 50 years ago?

I would also like to dedicate this thesis to all the children who have had traumatic experiences, and all the adults who are suffering now because of it. Please believe it is never too late to get help and turn your life around, no matter how hopeless it may seem.

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### List of Abbreviations

<i>Symbol</i>	<i>Abbreviation</i>
ACE	Adverse Childhood Experiences study
ADHD	Attention-Deficit/Hyperactivity Disorder
ARC	Attachment, Regulation, and Competency framework
ARTIC-35	Attitudes Related to Trauma-Informed Care scale – 35 questions
APA	American Psychological Association
CPTSD	Complex Post-Traumatic Stress Disorder
DTD	Developmental Trauma Disorder
DSM	Diagnostic and Statistical Manual of Mental Disorders
ICD	<i>International Classification of Diseases for Mortality and Morbidity Statistics</i>
NCSTI	National Child Traumatic Stress Initiative (part of SAMHSA)
NCTIC	National Center for Trauma-Informed Care (U.S.)
NCTSN	National Child Traumatic Stress Network (U.S.)
NSCH	National Survey of Children’s Health (U.S.)
PTSD	Post-Traumatic Stress Disorder
SAMHSA	Substance Abuse and Mental Health Services Administration (U.S.)
SPSS	Statistical Package for the Social Sciences
TIC	Trauma-informed care
TIP	Trauma-informed practice(s)
TLPI	Trauma Learning Policy Initiative
WHO	World Health Organization

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## Chapter One: Introduction

This study focused on pre-service teacher familiarity and attitudes regarding childhood trauma and trauma-informed practice using an existing survey. What follows is a brief overview of the existing literature and the need for the current study, reviewed in more detail in Chapter Two, including discussion of the complexity of childhood trauma and its interventions. The occurrence of one or more traumatic experiences in childhood can lead to complex repercussions that affect nearly every student and family and is now widely acknowledged to be a leading cause of a vast range of lifelong challenges, including physical, cognitive, mental, and social-emotional impairments and illnesses (Afifi et al., 2014; for a review, see Saunders & Adams, 2014). A review of the research on childhood trauma in educational settings suggests that teachers and pre-service teachers feel inadequately prepared to identify and support students who are experiencing traumatic stress (Alisic, 2012; Alisic et al., 2012; Ko et al., 2008; Perry & Daniels, 2016; Reker, 2016; Vanderburg, 2017).

Additionally, the study of the short and long-term consequences of childhood trauma is still in its infancy, even though epidemiological research has established that the majority of adults will experience at least one, if not numerous, traumatic events during childhood (Afifi et al., 2014; Felitti et al., 1998; Kerker et al., 2015; van der Kolk, 2014). Such traumatic experiences can have a significant impact on students' cognitive, academic, social, and emotional capabilities (Blaustein, 2013; Steele & Malchiodi, 2012; van der Kolk, 2014) resulting in a number of school-wide initiatives proposed to address several empirically based factors correlated with developmental impairments, such as experiencing a single traumatic event (e.g., car accident, natural disasters, divorce, death); prolonged family violence, abuse, neglect, addiction, mental illness; community violence; and intergenerational trauma (e.g., war, famine,

residential schools) (Klinic Community Health Centre, 2013; Ristuccia, 2013; The Substance Abuse and Mental Health Services Administration [SAMHSA], 2014; Steele & Malchiodi, 2012; Cole et al., 2005).

There are many terms used in the literature relating to system-wide trauma-based interventions and frameworks, such as trauma-informed practice (TIP), trauma-informed approaches, trauma-specific services, trauma-informed education, trauma-sensitive schools, and trauma-informed care (TIC). Of these, TIC is the most overarching term in the literature on trauma. TIC, as an alternative description for trauma-informed practices, is a “term describing an international trend in mental health care whereby treatment approaches and cultures recognize the pervasive impact of trauma and aim to ameliorate, rather than exacerbate, the effects of trauma” (Brown et al., 2012, p. 3). The concept of trauma-informed care was developed by Harris and Falot (2001) in the 1990s to improve clinical practice, and “describes service delivery that integrates an understanding of the pervasive biological, psychological, and social sequelae of ACEs and trauma” (Baker et al., 2016, p. 2), with the goal of designing systems and services that accommodate trauma survivors’ needs while promoting healing and recovery (Carello & Butler, 2015).

Both TIC and TIP are used synonymously in this study to describe a trauma-informed approach to understanding student learning and behaviour, as the current literature does not provide a clear distinction between the two terms when discussing trauma-informed approaches regarding childhood traumatic stress. The various terms used by authors/researchers in this field also demonstrates the complexity and variability of childhood trauma and its interventions, which will be reviewed below.

### **The Complexity of Childhood Trauma and its Interventions**

Due to the overlap of symptoms and co-morbidity of behavioral and learning problems, many children who exhibit symptoms of trauma are often mislabeled by educators or misdiagnosed by mental health professionals with various disorders that do not fully represent the “complex self-regulatory and relational impairments” caused by traumatic stress (Cook et al., 2005, p. 392). These symptoms often meet criteria for attention-deficit/ hyperactivity disorder (ADHD), bipolar disorder (BD), depression,

communication disorders, separation anxiety disorder (SAD), intermittent explosive disorder (IED), reactive attachment disorder (RAD), conduct disorder (CD), anxiety disorders, eating disorders, sleep disorders, and/or oppositional defiant disorder (ODD) (Cook et al., 2005; Levine & Kline, 2007; van der Kolk, 2005, 2014). The difficulty of identifying traumatic stress in students combined with overcrowded classrooms, few mental health resources in the school system, limited support staff, lack of professional development, and underfunding, has led to TIP being met with reluctance in schools (Blaustein, 2013; Perry & Daniels, 2016).

Childhood trauma is now widely acknowledged to be a leading cause of a vast range of childhood and lifelong challenges including physical, biological, psychological, and social-emotional impairments and illnesses (Blaustein, 2013; Cook et al., 2005; De Bellis & Zisk, 2014; Felitti et al., 1998; Levine et al., 2015; Perry & Daniels, 2016; van der Kolk, 2014). Bessel van der Kolk (2014), a leader in the field of childhood trauma, describes the four main principles underlying the symptoms of chronically traumatized children and adults: “pervasive biological and emotional dysregulation, failed or disrupted attachment, problems staying focused and on track, and a hugely deficient sense of coherent personal identity and competence” (p. 166). All of these factors undoubtedly have a significant impact on a student’s ability to thrive academically and socially in school. However, there are very few studies on teachers’ perceptions of students demonstrating symptoms of traumatic stress (Alisic, 2012; Alisic et al., 2012; Reker, 2016).

Reviewing the research on teachers’ and pre-service teachers’ knowledge and attitudes regarding childhood trauma and trauma-informed educational practices, presented in Chapter Two, below, reveals several areas for further study. These include: having no dominant or official framework for advocating for, or implementing, TIP in schools; deciding what teachers and pre-service teachers should know about childhood trauma; how to adequately train students and educational professionals while overcoming the barriers to potential trauma-informed programs; how to successfully measure if teachers are effectively engaging in trauma-informed practice/care, and; what are pre-service teachers’ attitudes

and familiarity regarding the topics of childhood trauma and trauma-informed educational practices (Alisic, 2012; Alisic et al., 2012; Brown et al., 2012; Baker et al., 2016; Blaustein, 2013; Chafouleas et al., 2016; Kinniburgh et al., 2005; Perry & Daniels, 2016; Reker, 2016; Ristuccia, 2013; Rossen & Hull, 2013; Steele & Malchiodi, 2012; Thomas et al., 2019). While all areas are worthy of further exploration, this study will focus on the latter of these: pre-service teachers' familiarity of and attitudes towards childhood trauma and trauma-informed educational practices, and if they believe these topics are important to learn more about. At present, no research has been conducted that specifically assesses this population in relation to their understanding of trauma-informed care in a school setting.

## **The Present Study**

### ***Purpose of the Study***

With an educational background in early childhood education and educational psychology, the researcher found that there was minimal to no mention in the university curriculum and related coursework regarding how traumatic experiences in childhood can affect students' learning and behaviour at school. A review of the literature and results of this study support the notion that pre-service teachers, in-service teachers, and school communities need to be more aware and informed of the symptoms and educational impacts of childhood trauma, and how to respond effectively in a way that supports all students, families, and stakeholders. An overwhelming amount of research suggests that traumatic stress can have a long-term, negative impact on a child's cognitive development, regulatory capacity, interpersonal skills, and intrapersonal development, resulting in a lower ability to thrive in school and in future endeavors (for a review, see Blaustein, 2013).

Accordingly, the goal of the current study was to gather data on pre-service teachers' attitudes and familiarity with the topics of childhood trauma and trauma-informed practice/care. The results of this study address the need for further research around childhood traumatic stress and corresponding educational practices. Specifically, this research on the familiarity and attitudes that pre-service teachers have could contribute to an increased understanding of what can be done at the educational level to

ensure teachers are best equipped to identify and address the short and long-term effects of childhood traumatic stress on their students' learning, behaviour, and development.

### ***Research Questions***

This study will focus on two main research questions: 1) What are pre-service teachers' attitudes towards trauma-informed practice? Specifically, are their attitudes predominantly supportive or non-supportive of trauma-informed practice/care? and 2) Amongst the variables of age, gender, racial/ethnic identity, knowledge/familiarity with childhood trauma, knowledge/familiarity with TIP, and support for TIP, are there group differences in ARTIC-35 mean scores? If so, are any of these group differences statistically significant?

The Attitudes Related to Trauma-Informed Care (ARTIC) Education 35-question scale was used to measure pre-service teachers' attitudes related to trauma-informed practice/care, and was developed to provide the first objective, reliable, and valid way to determine the extent to which an individual or system is trauma-informed, or able to successfully become trauma-informed (Baker et al., 2016). The ARTIC scale was initially used to measure service providers' attitudes about trauma-informed care, a central component of the practice that will be measured in this study (Brown et al., 2012). Additionally, demographic information was gathered to determine if the factors of age, gender, race/ethnicity, familiarity with childhood trauma, familiarity with trauma-informed practice, and support for TIP, had any impact on overall ARTIC-35 mean scores.

### ***Organization of Thesis***

This chapter has provided a brief outline of the context for the study described here as well as the research questions pursued. The following chapter is a review of the literature, including the conceptual frameworks that inspired and guided this research, and a summary of the current literature on childhood trauma and trauma-informed practices in schools. This will be followed by chapters outlining the methodology employed, the results of the study, a discussion of the findings, and a concluding chapter

that outlines the limitations of this study, ethical considerations, implications, and possible directions for further research.

## Chapter Two: Literature Review

This chapter will present the various definitions of trauma, along with the conceptual frameworks that inspired this study. Further, a summary of the current literature on childhood trauma and trauma-informed practices in schools will be reviewed. These summaries include: the epidemiology of childhood trauma and a review of the ACE study; symptoms of child traumatic stress, misdiagnoses, and challenges with symptom identification; current literature on trauma-informed practice in schools, including frameworks currently being implemented, the challenges of adopting a trauma-informed approach, and barriers with measuring TIP; progress in professional development and teacher education, and; the importance of assessing teacher attitudes in relation to TIP in schools. As the research on pre-service teachers was found to be scarce, the relevant literature on teachers was reviewed instead to inform the inquiry into what is needed to enhance pre-service teacher education.

### **Defining Trauma**

There are many variations and controversies in the academic literature regarding the symptoms and operational definition of the term “trauma” and “traumatic stress,” especially when discerning between adverse events, potentially traumatic events (“trauma-exposed”), and traumatic events (“traumatized”) (Perfect et al., 2016, p. 37). Therefore, it has proven difficult to objectively define a term that demands both subjective appraisals and clear distinctions between ordinary and traumatic stressors that are “independent of personal meaning making” (Weathers & Keane, 2007, p. 108). This tension is not new to the study of trauma, as the continually evolving interpretations of traumatized behaviour began centuries ago and remain subject to a range of barriers due to its innate complexity, varying sociopolitical influences, and enduring stigma.

One of the first studies on psychological trauma began in the 19<sup>th</sup> century in Paris, France with Jean Martin Charcot (1887), who related patient histories of trauma with symptoms of hysteria (for a

review, see van der Kolk, 2000). Charcot's student, Pierre Janet (1889), further detailed his psychiatric patients' psychopathologies as a result of traumatic experiences. As van der Kolk (2000) stated in his historical review of trauma research, Janet (1919/1925) was the first to propose the complexity of how people integrate traumatic experiences and embody traumatic experiences with dissociation from consciousness and voluntary control. In particular, Janet (1919/1925) found that traumatic memories were "re-enacted in the form of intense emotional reactions, aggressive behavior, physical pain, and bodily states that could all be understood as the return of elements of the traumatic experience," although they no longer had any adaptive value past the original threatening experience (van der Kolk, 2000, p. 11). Moreover, Janet (1919/1925) stated that his patients' efforts to keep their traumatic memories out of their consciousness consumed their psychological energy, interfered with personality development and assimilating new experiences, and hindered their ability to sustain focused attention and learn from new experiences (van der Kolk, 2000).

Meanwhile, Sigmund Freud (1920) was also conducting research from the 1880s to the 1920s on the phenomena of trauma, hysteria, and neuroses (van der Kolk, 2000). Freud's extensive and controversial psychoanalytical work supported Charcot's (1887) and Janet's (1919/1925) observations regarding how traumatic memories were embodied and represented unconsciously, including abnormal sensory and motor symptoms, repression, dissociation, and compulsive repetitions of traumatic experiences (Freud, 1920; van der Kolk, 2000). At the end of World War II, as a response to treating World War I veterans, Abram Kardiner (1941) further confirmed the persistent and chronic psychobiological nature of traumatic stress, or "traumatic neuroses" (van der Kolk, 2000, p.12). While minimal trauma research was conducted during the next 40 years, repercussions from the American war in Vietnam and subsequent women's rights movements led to the rediscovery of the importance of understanding the widespread effects of trauma, and "many of the early formulations that had long since been forgotten proved to be remarkably accurate" (van der Kolk, 2000, p. 12).

This history of trauma research led to its place in The *Diagnostic and Statistical Manual of Mental Disorders* (DSM), which has continually changed the definition and diagnostic criteria of trauma and post-traumatic stress since it was first introduced as “Post-Traumatic Stress Disorder (PTSD)” in 1980 in the DSM-III (APA, 1980; Pai et al., 2017; van der Kolk, 2000; Weathers & Keane, 2007). One significant change from the DSM-IV (2000) to the current DSM-5 (2013) is the removal of Post-Traumatic Stress Disorder (PTSD) from the “Anxiety Disorders” category to its own “Trauma and Stressor-related Disorders” category (APA, 2000; APA, 2013; Pai et al., 2017). This change represents a more complex representation of trauma and its related diagnoses, as symptoms of anger, guilt, and shame have extended the notion that traumatic stress rests in the spectrum of anxiety and/or fear (Pai, Suris, & North, 2017). Nonetheless, the DSM-5’s Criterion A: Exposure to Trauma continues to evoke controversy with regard to what is deemed to be “trauma” or a “traumatic event,” as it can be difficult to differentiate between an event that produces common stress (e.g., bereavement, illness) versus one that creates diagnosable traumatic stress (Pai et al., 2017; Weathers & Keane, 2007).

The DSM-5 defines a traumatic event as “exposure to actual or threatened death, serious injury, or sexual violation” (APA, 2013, p. 271). The exposure results from one of the following: (1) direct experience of the traumatic event, (2) witnessing the traumatic event, (3) learning that the traumatic event happened to a close friend or family member, or (4) experiencing repeated, extreme exposure to aversive details of the traumatic event (APA, 2013; Schafer, 2019). However, the DSM-5 has in fact limited its qualifications of what is considered to be “trauma” or “traumatic” from previous editions, and this factor is a predominant deviation from other evidence-based definitions of trauma cited in this research and literature review (APA, 2013). For example, the DSM-5 does not consider psychosocial stressors (e.g., separation/divorce, loss of employment), medical events (e.g., terminal cancer, heart attack), or media exposure (e.g., events witnessed on TV, movies, internet, or in pictures, if not work-related), as potentially traumatic stressors, while other prominent researchers, networks, and

organizations have included these broader events in their definition of trauma (Blaustein, 2013; Chafouleas et al., 2016; Felitti et al., 1998; Pai et al., 2017; SAMHSA, 2014; van der Kolk, 2005).

SAMHSA, one of the more widely known American organizations studying and responding to trauma, defines trauma as a result of

an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening, and that has lasting adverse effects on the individuals' functional and mental, physical, social, emotional, or spiritual well-being. (2012, p. 2)

Potentially traumatic events included the following: neglect; emotional abuse, or psychological maltreatment; a serious accident, illness, or medical procedure; victim or witness to community violence; historical trauma (intergenerational trauma); school violence; bullying; natural or manmade disasters; forced displacement; war, terrorism, or political violence; grief or separation; and system-induced trauma and re-traumatization (SAMHSA, 2014). Trauma researchers such as Chafouleas et al. (2016) have used SAMHSA's (2014) definition in their research.

Blaustein, another predominant and well-cited researcher in the field of childhood trauma and educational interventions, depicted traumatic experiences as "overwhelming; lead to strong negative emotions such as shame, helplessness, and fear; and involve some degree of experienced or witnessed threat to self, whether that threat is physical, mental, or emotional," supporting a more inclusive, individual, and subjective definition of trauma than is portrayed in the DSM-5 (Blaustein, 2013, p. 5). Finally, the Adverse Childhood Experiences (ACE) study, to be discussed further below, also conflicts with the DSM-5's definition of trauma as it includes family substance abuse, family mental illness, parental separation or divorce, and having an incarcerated family member, as adverse childhood experiences that are considered potentially traumatic and correlated with health-risk behaviours and

diseases in adulthood (Felitti et al., 1998; van der Kolk, 2005). This complex and often contradictory assortment and use of definitions opens up confusion in this field and is a hindering factor in the study of trauma and related issues.

While the DSM-5 is a valuable and internationally renowned resource for educational psychologists and researchers, this study and literature review will draw upon research that uses a broader definition of trauma and symptoms of traumatic stress, demonstrating the complexity and intricacies of trauma research. This summarized interpretation includes, but is not limited to, SAMHSA's (2014) definition of trauma, the categories of adverse childhood experiences from Felitti et al.'s (1998) study, Cook et al.'s (2005) domains of impairment, Kinniburgh et al.'s (2005) trauma framework, and Baker et al.'s (2016) conceptual model and definitions of trauma and trauma-informed care (Harris & Falot, 2001).

### **Conceptual Frameworks**

There are two conceptual frameworks guiding this study: Bronfenbrenner's (1979) Ecological Systems Theory and the Attachment, Regulation, and Competency (ARC) framework (Blaustein & Kinniburgh, 2010; Kinniburgh, et al., 2005). Although these two frameworks address different factors of human behaviour, both ultimately emphasize the complex, multi-layered considerations necessary in understanding childhood trauma and trauma-informed care. The ecological systems model and the ARC framework share similarities in that both are a division of each intervention into an individual, familial, and systemic component, acknowledging that TIP involves a reciprocal relationship between the child, his/her family, and his/her community (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2007; Steele & Malchiodi, 2012). The literature on TIC and childhood trauma suggests that various multi-level factors need to be considered when working with all children, but are particularly important to attend to

with children exhibiting various symptoms of traumatic stress (DeCandia et al., 2014; Steele & Malchiodi, 2012).

### ***Bronfenbrenner's Ecological Systems Theory***

Bronfenbrenner's (1979) Ecological Systems theory acknowledges that children develop through interactions with various levels of their environment and provided a conceptual foundation for this complex and wide-ranging area of study (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2007; Pfenninger Saint Gilles, 2016; Tishelman et al., 2010). Bronfenbrenner (1979) defined the ecology of human development as:

The scientific study of the progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by relations between these settings, and by the larger contexts in which the settings are embedded. (p. 21)

This theory outlines five levels in one's ecological system beginning with the *microsystem*, such as family, school, and peers, that immediately surrounds the child. This is then surrounded by the *mesosystem*, which are the interactions between microsystems; the *exosystem*, which allows the individual to link one's cultural context with his/her immediate environment; the *macrosystem*, which is one's cultural context; and the *chronosystem*, referring to the concept of time across one's lifespan and over the generations (Bronfenbrenner & Morris, 2007; Pfenninger Saint Gilles, 2016). Evidence-based research regarding TIC emphasizes strategies, policies, and procedures that involve addressing the "survival brains" of those experiencing traumatic stress "through sensory and somatic experiences, enhancing self-regulation, trauma integration, and healthy relationships and environments" (Steele & Malchiodi, 2012, p. xix). This research on TIC demonstrates the inevitable interplay between a child's traumatic experiences and systemic interventions. While there are few ecologically valid studies regarding traumatic stress in the school context, school-based research has shown that 15-20 out of 30

students will be exposed to at least one traumatic event, emphasizing the importance of teachers attending to the academic and social-emotional-behavioural functioning and changes in both individual students and classrooms as a whole (Perfect et al., 2016).

### ***Attachment, Regulation, and Competency (ARC) Framework***

Bronfenbrenner's (1979) Ecological Systems theory complements and supports the practicality of the ARC framework, which is also a system-level intervention targeting the child and his/her surrounding caregiving system (Pfenninger Saint Gilles, 2016; Tishelman et al., 2010). The ARC model is a component-based framework for intervention that is "grounded in theory and empirical knowledge about the effects of trauma, recognizing the core effects of trauma exposure on attachment, self-regulation, and developmental competencies" (Kinniburgh et al., 2005, p. 425). The ARC model focuses on the contextual behaviour and symptoms of the child, employing phase-oriented treatment approaches and encouraging intervention at a systemic, familial, and individual level (Kinniburgh et al., 2005). Within the 3 domains, there are 10 building blocks/components of interventions: (1) caregiver affect management, (2) attunement, (3) consistent response, (4) routines and rituals, (5) affect identification, (6) modulation, (7) affect expression, (8) executive functions, (9) self-development and identity, and (10) trauma experience integration (Blaustein & Kinniburgh, 2010). By addressing the various developmental vulnerabilities that a traumatized child may experience, the ARC model emphasizes skill development, stabilizing internal distress, and strengthening the security of caregivers in order to promote resilience and a healthier development trajectory (Kinniburgh et al., 2005).

### ***Integrating the Theoretical Frameworks with Trauma-Informed Practice***

While all systems levels are impacted by trauma, of particular relevance to this study are the different factors in a child's and teacher's microsystem, such as perceived well-being, attitudes towards TIP, support networks, and externalizing and internalizing behaviours. However, successful implementation of TIC requires every component of a child's environment to be trauma-informed,

“attending to the developmental and psychosocial needs and cultural values and beliefs of traumatized individuals” (Steele & Malchiodi, 2012, p. 99). A trauma-informed approach in schools involves multiple layered complexities, such as a child’s various systems of care, the school’s resource capacity, and family requirements.

Bronfenbrenner’s (1979) framing of human development and the ARC model’s (Kinniburgh et al., 2005) emphasis on addressing individual symptoms, familial behaviours, and systemic change, complement the focus of TIP on these nuances and interrelationships (Chafouleas et al., 2016). Trauma-informed care, whether it be in the field of healthcare, social services, psychology, or education, advocates a trauma-informed system as an “ecosystem that supports and promotes health and well-being for all people who interact within that system” (Kimberg & Wheeler, 2019, p. 31). Furthermore, Kimberg and Wheeler (2019) assured that, while it may be difficult for staff to maintain an environment that is supportive, re-assuring, stabilizing, and resilience-promoting for those experiencing traumatic stress, an ongoing commitment for self-reflection and transformation at an individual level and at a systems-level will help ensure successful short and long-term trauma-informed change.

The section that follows is a review of the relevant literature on the epidemiology, identification, diagnosis, and research involving childhood trauma, including its relation to the field of education. Within both the Ecological Systems Theory (Bronfenbrenner, 1979) and the ARC Framework (Kinniburgh et al., 2005), it is important for those engaging in TIP to be able to understand the epidemiology of trauma, identify it in those with whom one is engaged, ensure appropriate diagnosis, and, in the case of childhood trauma, understand its effects, particularly in the field of education. What follows is a review of existing scholarship that attends to these four key activities, all of which allow for a better understanding of the ways that childhood trauma and TIP may impact the various systems put forward in the theoretical frameworks guiding this study.

## **Epidemiology**

Epidemiologic information is an extremely valuable tool that enables a more accurate understanding of the various factors involved in trauma research, such as the different types and severities of trauma, prevalence and incidence rates, variations in populations affected, correlations between events and outcomes, and the population's overall health status (Saunders & Adams, 2014; Spronk et al., 2019). However, there are many components in the field of childhood trauma that complicate the ability to have a realistic and confirmed representation of its occurrence and consequences in society. These factors can include: the secretive and stigmatizing nature of trauma; fear of legal and/or social consequences of reporting; ignorance or lack of awareness of severity of behaviours; inadequate community surveillance efforts; and differences in operational definitions regarding what constitutes a potentially traumatic event versus a stressful event (Blaustein, 2013; Saunders & Adams, 2014; Spronk et al., 2019). Fundamentally, it is argued that conceptual and methodological differences in child trauma studies are responsible for the majority of variations in epidemiological data, stressing the importance of acknowledging the operational definitions applied in each study (Saunders & Adams, 2014; Spronk et al., 2019). In that light, Saunders and Adams' (2014) review of the epidemiology of childhood trauma concluded that the most beneficial epidemiological research in this field was conducted using interviews of nationally representative samples of older youth.

### ***Prevalence of Childhood Trauma***

There are numerous benefits to understanding the incidence and prevalence rates of traumatic experiences in childhood, as it can have a direct effect on the scope and financial support of services, resources, interventions, and programs in a community (Saunders & Adams, 2014; Spronk et al., 2019). Nonetheless, as mentioned above, the field of trauma is plagued by the arduousness of obtaining epidemiologic data, further stressing the importance of distinguishing between prevalence and incidence rates in epidemiologic reports when analyzing and contrasting results across studies (Saunders &

Adams, 2014). Incidence rates can be defined as “the frequency of new occurrences of a medical disorder in the studied population at risk of the medical disorder arising in a given period of time” (Spronk et al., 2019, p. 1), irrespective of the number of people affected, and this rate of occurrence is typically represented in a longitudinal research design (Saunders & Adams, 2014).

Prevalence rates are most commonly used in trauma research and statistical reporting and are defined as “the part (percentage or proportion) of a defined population affected by a particular medical disorder at a given point in time, or over a specified period of time” (Spronk et al., 2019, p. 1), such as from birth to age 18 or within the last year and is reflected in a cross-sectional research sample (Saunders & Adams, 2014). Saunders and Adams’ (2014) review on the epidemiology of traumatic experiences in childhood highlighted several barriers to procuring accurate estimates of the incidence and prevalence of traumatic stress, including: the inherent nature of certain types of traumatic events, the assets available to researchers for detecting and counting traumatic events, conflicting methodological issues between studies, the nature of the sample (e.g., clinical samples, known/reported cases, or community convenience samples), the source of information (e.g., archives, administration, clinical records), and the types of screening methods (e.g., self-reports, interviews). Altogether, these challenges contribute to the complexities and controversies of childhood trauma research, further impacting widespread and effective prevention and intervention endeavours.

One example of a barrier to obtaining more accurate estimates of the incidence and prevalence of traumatic stress comes from survey research that suggests that many forms of childhood trauma occur in the home environment with few witnesses and are never reported, therefore affecting consensus between available research data (Afifi et al., 2014; Blaustein, 2013; Finkelhor et al., 2009; Saunders & Adams, 2014). Other challenges relate to the fact that many children “fly under the radar” for most or all of their years in formal education (Blaustein, 2013). Since trauma varies in its presentation, even among siblings in the same household or peers experiencing the same adversity, traumatized children may be very

comfortable with peers or avoid them, be labelled as bullies or leaders, and may excel or struggle academically (Blaustein, 2013).

Despite the difficulties obtaining accurate rates of childhood trauma, many studies and organizations have provided prevalence rates of childhood trauma in North America (e.g., Afifi et al., 2014; APA, 2008; Benjet et al., 2016; SAMHSA, 2014; Saunders & Adams, 2014). One review of the literature regarding the prevalence of child maltreatment in America suggested that 8%–12% of youth have experienced at least one sexual assault; 9%–19% have experienced physical abuse by a caregiver or physical assault; 38%–70% have witnessed serious community violence; and one in 10 has witnessed serious violence between caregivers (for a review, see Saunders & Adams, 2014). The Presidential Task Force on Posttraumatic Stress Disorder and Trauma in Children and Adolescents estimated rates of 39% to 85% of youth witnessing community violence, 66% being victims of community violence, and 25% to 43% of youth being exposed to sexual abuse (APA, 2008). The Canadian Community Health Survey conducted in 2012 demonstrated that 32% of a nationally representative adult sample indicated that they had experienced physical abuse, sexual abuse, and/or exposure to intimate partner violence during childhood (Afifi et al., 2014). Finally, SAMHSA's (2014) National Child Traumatic Stress Initiative (NCSTI) reported that, in 2014, two thirds of children in the United States experienced at least one traumatic event before the age of 16, and that 9.2/1000 children ( $n = 683,00$ ) were victims of child abuse and/or neglect.

Ultimately, there is enough epidemiological data in the field of trauma to support continued research and changes in practice and policy, with agreement among trauma researchers that traumatic events and stress in childhood can have detrimental short-term and long-term effects on every aspect of a person's well-being.

### *Adverse Childhood Experiences (ACE) Study*

One of the most significant, ground-breaking investigations regarding the prevalence of childhood trauma was the CDC-Kaiser Permanente Adverse Childhood Experiences study. ACEs are defined as stressful or traumatic events, and the project revealed the then-unknown widespread prevalence of abuse, neglect, and other potentially traumatic experiences in childhood (Felitti et al., 1998). The study occurred between 1995 and 1997, and was conducted at Kaiser Permanente's San Diego Health Appraisal Clinic. There were two cycles of data collection, with a total of 17,337 questionnaire responses used for analysis. Demographically, 74.8% of participants were white, 54% were women, 39.3% had graduated from college, and the mean age was 56.1 years (range: 19-92 years) (CDC, 2016; Felitti et al., 1998). The researchers used three categories of childhood abuse including psychological abuse (2 questions), physical abuse (2 questions), or contact sexual abuse (4 questions). Additionally, there were four categories of exposure to household dysfunction during childhood including exposure to substance abuse (defined by 2 questions), mental illness (2 questions), violent treatment of mother or stepmother (4 questions), and criminal behavior (1 question) in the household. The authors then used these 7 categories of childhood exposures to abuse and household dysfunction for their analyses (See Figure 1; Felitti et al., 1998).

**Figure 1***Wave 1 Questionnaire results*

## Prevalence of childhood exposure to abuse and household dysfunction

ACE Category of Childhood Exposure	Prevalence (%)
Abuse by category	
1. Psychological	11.1
2. Physical	10.8
3. Sexual	22.0
Household dysfunction by category	
4. Substance abuse	25.6
5. Mental illness	18.8
6. Mother treated violently	12.5
7. Criminal behaviour in household	3.4
Any category reported	<b>52.1</b>

*Note.* Adapted from Felitti et al., 1998.

More than half of all participants (63.9%) in the investigation reported at least one ACE in their childhood, with the average number of ACEs being 3.6 (Felitti et al., 1998; Kerker et al., 2015). The ACE study concluded a graded dose-response relationship between ACEs and long-term consequences on well-being and overall health, meaning a positive correlation between amount of exposure to the stressor and intensity of outcome (Felitti et al., 1998). As the number of ACEs increased, there was a 32% higher chance of having a problem score on the Child Behaviour Checklist (CBCL), and a 21% increased risk of having a chronic medical condition (Kerker et al., 2015). Major findings from the

investigation demonstrated that the higher the ACE, the higher the chance of alcoholism and abuse, depression, illicit drug use, ischemic heart disease, liver disease, poor work performance, financial stress, domestic abuse, smoking, multiple sexual partners, sexual violence, and poor academic achievement (Felitti et al, 1998).

Notably, the number of ACEs reported in the U.S. has decreased over the past 20 years, as reported in the 2018 U.S. National Survey of Children's Health (NSCH) (Child and Adolescent Health Measurement Initiative [CAHMI], 2018). This annual study employed a single self-administered questionnaire using an address-based sampling methodology and revealed that 22% of children experienced one adverse childhood experience, 17.8% experienced two or more ACEs, and 60.1% reported no ACEs (CAHMI, 2018). There were nine ACEs items on this questionnaire: hard to cover basics on family's income (ACE1); parent or guardian divorced or separated (ACE3); parent or guardian died (ACE4); parent or guardian served time in jail (ACE5); saw or heard parents or adults slap, hit, kick, or punch one another in the home (ACE6); was a victim of violence or witnessed violence in neighborhood (ACE7); lived with anyone who was mentally ill, suicidal, or severely depressed (ACE8); lived with anyone who had a problem with alcohol or drugs (ACE9); and treated or judged unfairly due to race/ethnicity (ACE 10) (CAHMI, 2018).

With regard to childhood trauma research, the ACE study remains one of the most influential and cited studies across a diverse range of academic literature, as it has provided foundational knowledge and data for future studies and national surveys that continue to develop a stronger causal link for the impacts of traumatic stress on a child's education and health (Baker et al., 2016; CAHMI, 2018; Felitti et al., 1998; Hertel & Johnson, 2013; Rossen & Hull, 2013; Steele & Malchiodi, 2012). Next, the most common symptoms of child traumatic stress will be explored, along with the challenges and discrepancies of appropriate identification and interventions that persist in the field of childhood trauma.

## Identifying and Diagnosing Childhood Trauma

### *Symptoms of Traumatic Stress in Children*

While there is a large body of research on the neurobiological and psychopathological consequences of stress, especially in adults, the effects of trauma in childhood is less understood (Hertel & Johnson, 2013; Teicher et al., 2003). The various potential sources of trauma affect the manifestation of symptoms, and “children exposed to complex trauma often experience lifelong problems that place them at risk for additional trauma exposure and cumulative impairment (e.g., psychiatric and addictive disorders; chronic medical illness; legal, vocational, and family problems)” (Cook et al., 2005, p. 390). With regard to interpersonal trauma, namely maltreatment, neglect, and/or abuse, factors such as the age and gender of the child and perpetrator, relationship to perpetrator, and the frequency and duration of traumatic experiences will also influence symptomology and outcomes (Putnam, 2003). Additionally, research has shown that many children with confirmed trauma histories (e.g., abuse) can be asymptomatic, proving very difficult to provide appropriate interventions and treatments (Finkelhor & Berliner, 1995; Hsu 2003; Putnam, 2003). The majority of research in asymptomatic children has involved sexual abuse cases, and several longitudinal studies have shown that 10-20% of asymptomatic children will “deteriorate over the next 12 to 18 months” (Putnam, 2003, p. 274). This phenomenon has been labeled as a “sleeper effect,” where symptoms and negative outcomes may take months or years to manifest, possibly being triggered by developmental challenges or adversity that were not present during the traumatic experience(s) (Briere, 1992; Finkelhor & Berliner, 1995; Mannarino et al., 1991; Putnam, 2003; Wamser, 2013). Nevertheless, current research suggests that the majority of children who have experienced trauma will eventually most likely display an array of symptoms as the brain responds physiologically and imprints events in order to better adapt to the environment (van der Kolk, 2014).

In a preliminary review of the literature on the neurobiological areas affected by early stress and

maltreatment, Teicher et al. (2003) listed five regions of the brain that are vulnerable to traumatic stress. These areas of the brain include: reduced volume in the hippocampus, responsible for short and long-term memory consolidation; an overactive amygdala, which activates the body's stress response (e.g., fight or flight) when danger or a threat to survival is perceived; reduction in the size of the corpus callosum, which supports the integration and communication between hemispheres; impaired activity in the cerebellar vermis, an area involved in movement/locomotion, attention, language, regulating emotions, and cognitive functioning; and stunted maturation of the prefrontal cortex, which is involved in planning, empathy, filtering irrelevant information, inhibition, organization, and reasoning (Hertel & Johnson, 2013; Teicher et al., 2003; van der Kolk, 2014). Therefore, exposure to traumatic situations and the overproduction of stress hormones, such as cortisol and adrenaline, can negatively alter the size and functioning of the brain areas that are critical for learning, physical health, emotional regulation, and appropriate behaviour (Hertel & Johnson, 2013; van der Kolk, 2014). It is important to note that sex differences, and particularly sex-related differences in hormones throughout development, and types of maltreatment (e.g., sexual abuse versus neglect) have been shown to have an impact on symptom manifestation and neurobiological effects of child maltreatment (Perfect et al., 2016; Teicher et al., 2003). For the purposes of this study, gender differences will not be discussed in detail, along with the specific types of trauma and/or maltreatment that certain studies have shown to be correlated with particular symptoms (e.g., Teicher et al., 2003).

With regard to the impact of traumatic stress on a child's learning and behaviour at school, current research suggests there are various symptoms of academic impairment and social-emotional-behavioural challenges positively correlated with trauma and maltreatment (Cook et al., 2005; Hobbs et al., 2019; Perfect et al., 2016). Cook et al. (2005) outlined the domains of impairments in children exposed to complex trauma, which mainly resulted in a "loss of core capacities for self-regulation and interpersonal relatedness" (p. 390; see Figure 2). These disrupted domains included attachment with

caregivers, biological development, affect expression and regulation, dissociation, behavioural control, cognitive functioning and development, and self-concept (Cook et al., 2005). In terms of cognitive functioning, children who have had traumatic experiences are more likely to score lower on tests that measure IQ; spatial, verbal, visual, and working memory; verbal ability and language skills; and attention (for a review, see Perfect et al., 2016). Overall academic achievement and performance, as measured by parent/teacher reports and standardized tests, have also been shown to be negatively affected by traumatic stress. Specifically, children with histories of trauma and/or maltreatment had impaired executive functioning and lower scores in language, reading performance, math, science, spelling, and vocabulary (Hertel & Johnson, 2013; for a review, see Perfect et al., 2016). Poor attendance, increased incidence of suspensions and discipline referrals, and lower perceived school membership and engagement were also common symptoms of traumatic stress and further exacerbated academic difficulties (Perfect et al., 2016).

**Figure 2**

*Domains of Impairment in Children Exposed to Complex Trauma*

**1. Attachment**

- Problems with boundaries
- Distrust and suspiciousness
- Social isolation
- Interpersonal difficulties
- Difficulty attuning to other people's emotional states
- Difficulty with perspective taking

**2. Biology**

- Sensorimotor developmental problems
- Analgesia
- Problems with coordination, balance, body tone
- Somatization
- Increased medical problems across a wide span (e.g., asthma, autoimmune disorders,

**3. Affect regulation**

- Difficulty with emotional self-regulation
- Difficulty labeling and expressing feelings
- Problems knowing and describing internal states
- Difficulty communicating wishes and needs

skin problems)

#### 4. Dissociation

- Distinct alterations in states of consciousness
- Amnesia
- Depersonalization and derealization
- Two or more distinct states of consciousness
- Impaired memory for state-based events

#### 7. Self-Concept

- Lack of a continuous, predictable sense of self
- Poor sense of separateness
- Disturbances of body image
- Low self-esteem

#### 5. Behavioural control

- Poor modulation of impulses
- Self-destructive behaviour
- Aggression toward others
- Pathological self-soothing behaviours
- Sleep disturbances
- Eating disorders
- Substance abuse
- Excessive compliance
- Oppositional behaviour
- Difficulty understanding and complying with rules
- Re-enactment of trauma in behaviour or play (e.g., sexual, aggressive)

#### 6. Cognition

- Difficulties in attention regulation and executive functioning
- Lack of sustained curiosity
- Problems with processing novel information
- Problems focusing on and completing tasks
- Problems with object constancy
- Difficulty planning and anticipating
- Problems understanding responsibility
- Learning difficulties
- Problems with language development
- Problems with orientation in time and space

*Note.* Adapted from Cook et al., 2005.

Finally, symptoms of traumatic stress have been widely demonstrated in social-emotional-behavioural functioning, referring to “the ability to manage and regulate emotions, social competence, quality of peer relationships and interactions, and self-esteem” (Hertel & Johnson, 2013, p. 30). These symptoms can be categorized in terms of internalizing behaviours and externalizing behaviours, and

may vary depending on the child's age and stage of development (Perfect et al., 2016; Wiebler, 2013). Common internalizing symptoms of traumatic stress include anxiety (e.g., general, separation, social), sadness/depression, fear, withdrawal, poor self-esteem, somatic complaints (stomach-ache, headache), avoidance, irritability, moodiness, and sleep disturbances (Perfect et al., 2016; Wiebler, 2013). In contrast, externalizing symptoms are characterized as being disruptive, hyperactivity, defiance, aggressive behaviours, impulsivity, inattention, explosive anger (temper tantrums), disregard for rules and consequences, noncompliance with authority figures, recklessness, self-harm, oppositional-defiant behaviours, overreactions, and bullying (Hertel & Johnson, 2013; Perfect et al., 2016; Wiebler, 2013).

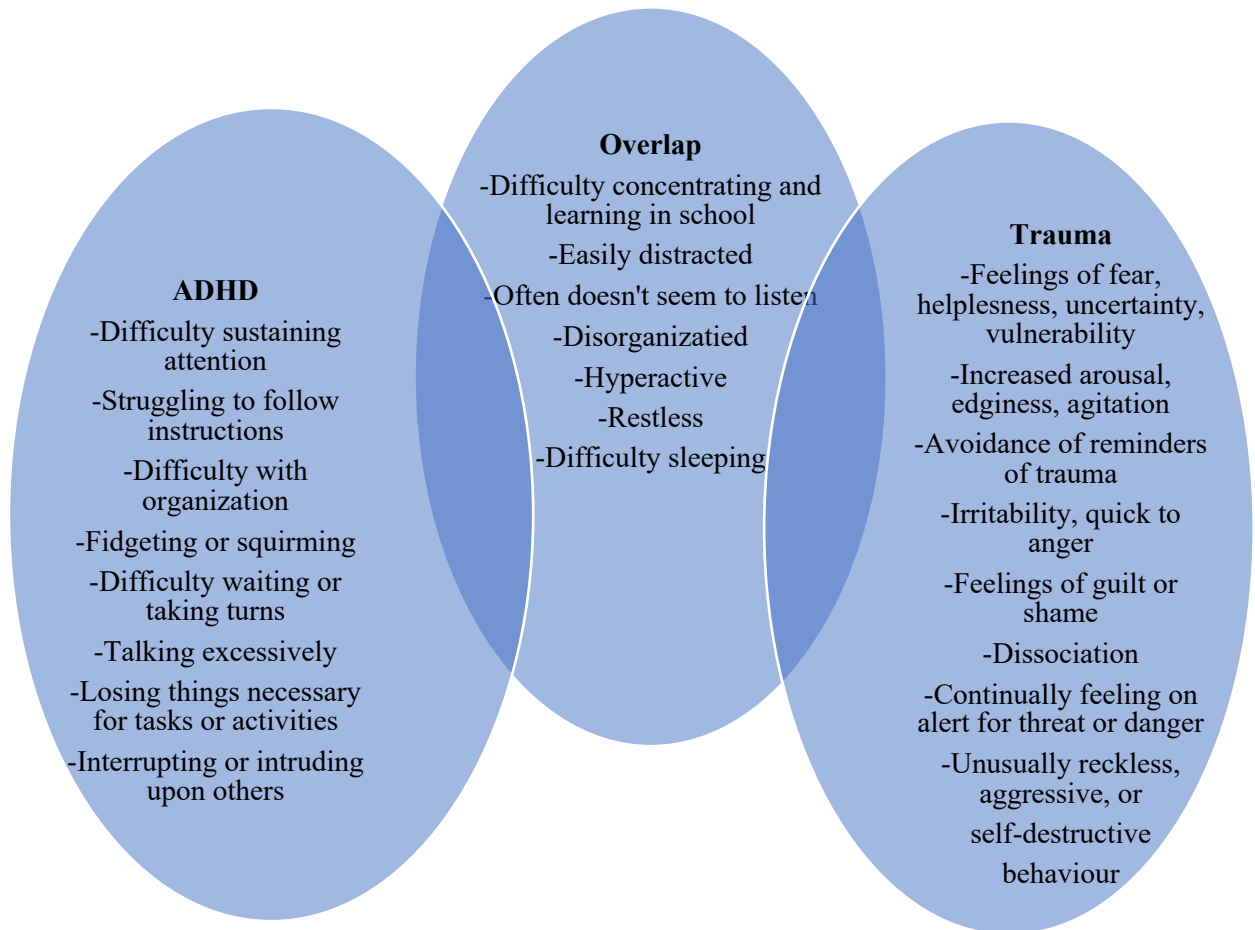
As there are a diverse number and range of symptoms that a child may display over the years in response to varying degrees of traumatic exposure, it has been difficult for educators and psychologists alike to properly identify and differentiate between behaviours and academic challenges that are a result of traumatic stress. The next section will review prevailing diagnoses and misdiagnoses related to childhood trauma, further supporting the importance of trauma-informed practice in identification and intervention.

### ***Misdiagnoses***

As previously noted, the definition, diagnoses, and prognoses of trauma are still being debated among international experts in the field. Accordingly, symptoms of traumatic stress, such as intrusion, avoidance, arousal, poor attention and concentration, learning issues, and poor task completion are often perceived as a student being “difficult” or are attributed to other diagnoses (Blaustein, 2013; Cook et al., 2005; Levine & Kline, 2007; Saunders & Adams, 2014). Common diagnoses correlated with trauma include depression, anxiety disorders, reactive attachment disorder, communication disorders, sleep disorders, eating disorders, and behavior disorders such as attention-deficit/hyperactivity disorder, conduct disorder, and oppositional defiant disorder (Blaustein, 2013; Cook et al., 2005; Levine & Kline,

2007; Saunders & Adams, 2014; van der Kolk, 2005). While these labels and diagnoses may help with the identification and communication of behavioural symptoms, they are insufficient in attending to developmental trauma (Foltz et al., 2013).

Attention deficit hyperactivity disorder (ADHD), in particular, shares similar symptomology with early trauma (see Figure 3). ADHD is a dimensional neurobiological disorder characterized by 18 core symptoms that involve a persistent pattern of inattention and/or hyperactivity-impulsivity that appear prior to age 12 and interfere with functioning in multiple settings (APA, 2013; Epstein & Loren, 2013; Lubke et al., 2009; Siegfried et al., 2016). Childhood victimization or relational trauma that results in chronic dissociation shares symptoms with inattention in ADHD (D'Andrea et al., 2012). Risk-taking, unmodulated aggression, hyperarousal, poor impulse control, irritability, and dysregulated affect after trauma share similarity with hyperactivity and impulsivity in ADHD (D'Andrea et al., 2012; Szymanski et al., 2011; for a review, see van der Kolk, 2005). For example, a child diagnosed with ADHD may engage in risky behavior through dysregulated impulses, whereas a child experiencing traumatic stress may engage in these impulsive or risky behaviors as a result of affective instability and attempts to self-soothe (D'Andrea et al., 2012).

**Figure 3***Similarities and Differences in Symptoms of Traumatic Stress and ADHD*

*Note.* Adapted from Siegfried et al., 2016.

Further, both traumatic stress and ADHD are commonly comorbid with symptoms/diagnoses of depression, anxiety, and learning disabilities, and have a similar negative prognosis of academic, occupational, and relational challenges, substance abuse, poor physical health, and psychological adversity (Siegfried et al., 2016). Fortunately, whether a child shows symptoms of ADHD, traumatic stress, or both, treatments such as cognitive-behavioural therapy, psychosocial therapy, mental health counseling, parent/caregiver training, educational modifications/supports, and prescription medication have been shown to alleviate symptoms (for a review, see Siegfried et al., 2016). It is important to note that there is limited research regarding medication as a successful treatment for traumatic stress, and it

may inadvertently delay or prevent successful outcomes by replacing the acquisition of skills required to rebuild healthy connections between experiences, emotions, and physical sensations/reactions (Siegfried et al., 2016; van der Kolk, 2005). A conscientious screening of trauma histories for children diagnosed with ADHD is a potential, albeit complicated, recommendation to aid in determining an effective type and course of treatment (Szymanski et al., 2011).

Another concern in the literature regarding childhood trauma occurs when children are diagnosed, or arguably misdiagnosed, with post-traumatic stress disorder (PTSD) (Cook et al., 2005; van der Kolk et al., 2005). The diagnostic criteria for PTSD continue to change with every updated DSM, and the most recent DSM-5 now has separate diagnostic criteria for children under six years old (APA, 2013). PTSD is diagnosed based on symptoms present in four clusters: intrusion, avoidance, negative alterations in cognition and mood, and hyperarousal (APA, 2013; McLaughlin et al., 2018). The World Health Organization's (WHO, 2018) *International Classification of Diseases for Mortality and Morbidity Statistics (ICD-11)* diagnoses PTSD as displaying all of the following symptoms, which must persist for several weeks and cause significant impairment to functioning. The first of these is the re-experiencing of the traumatic event or events in the present in the form of vivid intrusive memories, flashbacks, or nightmares. These are typically accompanied by strong or overwhelming emotions, particularly fear or horror, and strong physical sensations. Secondly, individuals must engage in the avoidance of thoughts and memories of the event or events, or avoidance of activities, situations, or people reminiscent of the event or events; and, finally, persistent perceptions of heightened current threat, for example, as indicated by hypervigilance or an enhanced startle reaction to stimuli such as unexpected noises (WHO, 2018, 6B40).

One significant difference between the DSM-5 and the ICD-11's diagnosis of PTSD is that the ICD-11 mentions Complex PTSD (CPTSD) as an exclusion, further signifying the complexity and dissonance of trauma nosology and treatment (WHO, 2018). Thirty years ago, Herman (1992) proposed the diagnosis of complex PTSD (CPTSD), a disorder that "transcends simple PTSD" and is marked by

prolonged, repeated trauma (p. 379). In comparison to PTSD, CPTSD was characterized as having more complex symptoms than PTSD, prolonged abuse that resulted in relational and identity-based personality changes, and the vulnerability to repeated self-inflicted and/or interpersonal harm (Herman, 1992). At present, the ICD-11's diagnosis of CPTSD remains largely similar to Herman's proposed disorder, acknowledging that repeated exposure to traumatic events can elicit more severe and long-term symptomology across various domains of functioning and well-being. Symptoms must meet all the diagnostic requirements of PTSD and must further include:

severe and persistent 1) problems in affect regulation, 2) beliefs about oneself as diminished, defeated or worthless, accompanied by feelings of shame, guilt or failure related to the traumatic event; and 3) difficulties in sustaining relationships and in feeling close to others. (WHO, 2018, 6B41)

Current research suggests that while PTSD may sufficiently encapsulate isolated traumatic events that “produce discrete conditioned behavioral and biological responses to reminders of the trauma,” chronic or repeated traumatization (e.g., exposure to unmanageable stress, medical procedures) has a more pervasive impact on development (van der Kolk, 2005, p. 3). Further, research has shown that traditional, adult-oriented behavioral treatments for PTSD are ineffective since they do not acknowledge the cause of the symptoms or encapsulate the developmental consequences of complex trauma exposure (Cook et al., 2005; van der Kolk et al., 2005). As a result, the Complex Trauma taskforce of the National Child Traumatic Stress Network (NCTSN) has proposed “developmental trauma disorder (DTD)” as an integrative diagnosis and framework for intervention that is distinct but related to various commonly diagnosed disorders of childhood (van der Kolk, 2005).

DTD is based on the concept that chronic or repeated interpersonal trauma will consistently and predictably disrupt many areas of development and functioning (van der Kolk, 2005). Van der Kolk (2005) described the various developmental impacts consistent with childhood trauma:

The complex disruptions of affect regulation, the disturbed attachment patterns, the rapid behavioral regressions and shifts in emotional states, the loss of autonomous strivings, the aggressive behavior against self and others, the failure to achieve developmental competencies; the loss of bodily regulation in the areas of sleep, food and self-care; the altered schemas of the world; the anticipatory behavior and traumatic expectations; the multiple somatic problems, from gastrointestinal distress to headaches; the apparent lack of awareness of danger and resulting self-endangering behaviors; the self-hatred and self-blame and the chronic feelings of ineffectiveness.

(p. 9)

Similar to PTSD and CPTSD, DTD involves symptoms of emotional and physiological responses to triggers/reminders of traumatic experiences; however, it also manifests with stimulus generalization, panic, disruptive behaviour, separation anxiety, and anticipatory behaviours (e.g., hyperactivity, aggression, avoidance, freezing) that are meant to prevent the recurrence of traumatic stresses (van der Kolk, 2005). Results of an international survey of clinicians regarding the clinical significance of a DTD diagnosis suggest that DTD may have “clinical utility” and be “discriminable from existing psychiatric diagnoses and their criteria” (Ford et al., 2013, p. 847). Unfortunately, these clinicians also reported that DTD symptoms were only partially ameliorated by evidence-based interventions for PTSD and related disorders (Ford et al., 2013). On a more positive note, results showed that a diagnosis of DTD could replace the various treatments that correspond with comorbid diagnoses, with targeted interventions specifically designed to focus on “posttraumatic psychobiological dysregulation” (Ford et al., 2013, p. 847).

As shown above, there are many challenges with the identification and treatment of traumatic stress in children. However, many teachers and school systems worldwide already acknowledge that

traumatic stress can pose a significant impairment to academic, social, and emotional achievement and development. More importantly, current longitudinal research continues to provide evidence that childhood trauma significantly contributes to addictions and mental health challenges in adulthood, further emphasizing the importance of the early identification and interventions that a trauma-sensitive school can provide (Copeland, et al., 2018). The following section includes an overview of trauma-informed approaches in schools, highlighting the gaps in the literature on teacher and pre-service teachers' attitudes regarding the symptoms, prevalence, and intervention methods relating to childhood traumatic stress.

### **A Trauma-Informed Approach in Schools**

Although there are mixed reviews on proper implementation and effectiveness of trauma-informed educational practices in schools, the prevalence of exposure to trauma during childhood and the severity of outcomes suggest consequences that significantly affect a country as a whole (Maynard et al., 2019; Peterson et al., 2018). As the review of the literature has shown thus far, scientific research has provided strong evidence that traumatic experiences can have a direct, significant impact on a child's cognitive, academic, and social/emotional functioning (Hertel & Johnson, 2013). Specifically, studies reveal that traumatized children can display decreased cognitive abilities in executive functioning, information processing, language development, abstract reasoning, attention, comprehension, memory, concentration, and verbal processing (for a review, see Diamanduros et al., 2018; Tishelman et al., 2010). Now, with this empirically based knowledge, education systems worldwide are tasked with deciding *what* to implement in schools to create a more effective environment for learning and development, and *how* to reasonably accomplish this goal.

SAMHSA (2014) coined the "4 Rs" as four key assumptions in a trauma-informed approach. The first assumption, *realize*, suggests that all levels of an organization must have a basic realization about trauma and its effects on individuals, families, groups, communities, and organizations. Second, *recognize*, requires organizations to recognize the complex signs of trauma, including using screening

and assessment tools, professional development, and/or supervision practices. *Responds* states that the organization must respond to trauma by applying a trauma-informed approach to all levels and domains of functioning which is followed by *resist*, where the chances of re-traumatization of individuals is lessened by decreasing or eliminating organizational practices that cause undue stress and/or trigger traumatic memories (Chafouleas et al., 2016; Duckworth & Follette, 2011).

Similar to the concept put forward by SAMHSA (2014), the Trauma Learning Policy Initiative (TLPI), a partnership of Massachusetts Advocates for Children (MAC) and Harvard Law School, defined a trauma-sensitive school as a school characterized by a student population who feel safe, welcomed, and supported, and an educational mission that addresses the school-wide impact of trauma on learning (Cole et al., 2005). Margaret Blaustein, Director of Training and Education at The Trauma Center at the Justice Resource Institute, has provided a more recent definition of a trauma-sensitive environment that complements the TLPI's concept for TIC in schools (Cole et al., 2005). Blaustein (2013) described a trauma-sensitive environment as:

one that is, to the degree possible, safe and attuned to the needs of students, families, staff, and community. Such an environment supports the academic competence of all students, whether trauma impacted or not; provides tools to support students and staff managing emotional and behavioural challenges; supports teacher and staff in negotiating difficult situations, often reducing stress and burnout among teaching staff; and, ultimately, has the potential to increase positive outcomes among youth across domains. (p. 13)

For a trauma-informed approach to be practically introduced into a school, stakeholders must be educated in order to achieve understanding on trauma-informed beliefs and values, raising awareness of the barriers to learning and increasing a sense of safety and connectedness among students and faculty members (Ristuccia, 2013; Steele & Malchiodi, 2012). There must also be strategies and adaptations in place to create and sustain a safe environment that integrates academic competency, physical safety, social and emotional functioning, and general well-being (Ristuccia, 2013; Steele & Malchiodi, 2012).

Further, a trauma-sensitive school requires a system in place to hold the relevant parties accountable for the implementation and support towards a school-wide, trauma-informed initiative (Cole et al., 2013; Ristuccia, 2013; Steele & Malchiodi, 2012).

One example of such an initiative is “The Flexible Framework,” an organizational tool developed by the TLPI that provides both a “systemic overview of school operations” and a guide for “reviewing a school’s impact on student success” (Ristuccia, 2013, p. 255). This framework bears similarities to the frameworks that guide this study, the ARC framework and Bronfenbrenner’s Ecological Systems model, as it views childhood trauma and intervention with systems-level relevance, further emphasizing a holistic view of the student that requires collaboration and consistency among all stakeholders (Cole et al., 2005). The Flexible Framework has six core operational functions used to create trauma-sensitive schools through collaboration with families, local community organizations, and outside providers (Cole et al., 2005). The six core concepts that either inhibit or support the process of becoming a trauma-sensitive school are Leadership, Professional Development, Access to Resources and Services, Academic and Non-Academic Strategies, Policies and Protocols, and Collaboration with Families (Cole et al., 2005).

These core concepts above are reiterated in other programs and institutes tasked with advancing trauma-informed systems for children, such as the Child Health and Development Institute (CHDI) of Connecticut, a leading state for trauma-informed care in child-serving systems (Lang et al., 2015). According to the CHDI, an essential but insufficient requirement for a system to become trauma-informed is basic staff training and awareness about trauma (Lang et al., 2015). Further, a trauma-informed system must be consistent with best practices for child-serving systems, such as “prevention, early intervention and care that is culturally competent, family-centered, and strength-based in the least restrictive environment possible” (Lang et al., 2015, p. 7). In collaboration with SAMHSA, the CHDI has defined four key components of a trauma-informed system including workforce development, trauma screening, practice changes and use of evidence-based practices, and inter-system collaboration

and communication (Lang et al., 2015). The commonalities of trauma awareness and identification, professional development, family education and participation, the use of evidence-based practices, and collaboration among different organizations and services signify some consistency among leaders in the field as well as confirming the level of difficulty and complexity in implementing TIP successfully (Cole et al., 2005; Lang et al., 2015; Maynard et al., 2019; Ristuccia, 2013; SAMHSA, 2014; Steele & Malchiodi, 2012). This brief summary of a number of trauma-informed approaches, programs, and frameworks provides a clear indication of a paradigm shift currently taking place to explore more links between students' mental and social-emotional health and educational success, and the growing interest in highlighting and responding to these needs.

### **Trauma-Informed Key Concepts and Training**

Despite the prevalence of traumatic experiences in childhood, as noted above, an absence of trauma-informed education and training at the post-secondary level and as professional development opportunities is shared among those in the fields of education and psychology. While this study focuses on pre-service teachers, it is important to acknowledge that pre-service psychologists are also lacking in “broad-based foundational knowledge about trauma, its consequences, and treatment, nor are they learning evidence-informed practices regarding trauma” (Cook et al., 2019, pp. 410-411). Therefore, the expectation for educators to tackle the difficult task of identifying and managing symptoms of student trauma in the classroom could seem unrealistic and even overwhelming, especially during a global pandemic. Nevertheless, it is now more crucial than ever for pre-service teachers, teachers, and other school personnel to have trauma-informed knowledge and training to prioritize and support well-being, prevent re-traumatization, and address the various social-emotional needs of all students (for a review, see Krasnoff, 2015; Minkos & Gelbar, 2021).

### ***Key Concepts***

While increased attention has been given to the importance of a trauma-informed approach in schools, there are several areas in which limited information is known. For instance, Hobbs et al. (2019)

found that, while some teacher education programs discussed child maltreatment, it was mainly in relation to identifying and reporting the abuse, rather than understanding how “sustained and severe maltreatment can lead to complex trauma, which affects learning, and social development in students” (p. 1). Therefore, one such area is with respect to what teachers should know about how traumatic experiences affect children. Chafouleas et al. (2016) declared the following in their research on trauma-informed service delivery in schools:

Establishing content knowledge about core features of trauma and trauma-informed care serves as an important initial step and is often focused on information such as the prevalence and impact of trauma on student development and school functioning as well as developing an appreciation of the complexity of trauma exposure. (p. 146)

Chafouleas et al.’s (2016) notion of the importance of basic content knowledge acquired by either pre-service education or in-service professional development training is reiterated in many studies that emphasize a neurobiological understanding of learning and behaviour in order to successfully engage in TIP.

For example, Brunzell et al.’s (2015) research discussed two important therapeutic neuropsychological goals required for effective trauma-informed teaching practices: repairing the trauma-affected students’ dysregulated stress response and strengthening attachment and relational capacities. In order to engage in effective teaching practices, the authors encouraged attending to the students’ underdeveloped neural pathways before expecting them to engage their higher regions in the brain required for memory and cognitive integration (p. 4). Trauma has been shown to affect three critical developmental pathways: “the maturation of specific brain structures at particular ages; physiologic and neuroendocrinologic responses; and the ability to coordinate cognition, affect regulation, and behavior” (p. 4), thereby diminishing various cognitive abilities and hindering healthy interpersonal relationships (van der Kolk, 2003).

Many childhood trauma studies focused on the benefits of creating learning environments that

promote and support self-regulation, secure and trustworthy relationships, and a sense of emotional and physical safety (Brunzell et al., 2015; Carello & Butler, 2015; Perry, 2009; Schore & Schore, 2008). Trauma researcher Perry (2009) enlisted self-regulation as a core developmental skill for children and asserted that a successful trauma-informed approach focuses on healing a physical and emotional dysregulated stress response in traumatized students and strengthening self-regulatory neural pathways in non-trauma-affected students. Many principles of attachment describe it in psychobiological models as a regulation process that “initiates an attunement and regulatory process for the body’s stress response and relational hardiness” (Brunzell et al., 2015, p. 5). Establishing strong classroom-based relationships is an important step in healing disordered attachment styles, teaching emotional intelligence competencies and de-escalation strategies, and ultimately developing a sense of safety and belonging that allows for higher-order learning (Brunzell et al., 2015; Schore & Schore, 2008). Finally, Carello & Butler’s (2015) research on trauma-informed educational practices found that ensuring students’ emotional and physical safety was the most fundamental principle for a trauma-informed approach. To maximize student resilience and minimize feelings of risk, teachers must create an environment that limits potential barriers to learning, such as assignment/test accommodations, course content warnings, encouraging student feedback, providing participation options, and promoting and modeling self-care plans (Carello & Butler, 2015). The concepts above represent a non-exhaustive but important listing of information that pre-service teachers and in-service teachers should understand as they attend to TIP in their professional practice.

### ***Training***

Another area in which more research is needed concerns how to effectively train pre-service and in-service teachers on using their knowledge of childhood trauma to employ trauma-informed educational practices, despite the barriers to potential trauma-informed programs (Hodas, 2006; Maynard et al., 2019; Perry & Daniels, 2016). Related to this need, Alliger et al. (1997) stated that on-the-job performance is a result of both knowledge acquisition and favourable work conditions that allow

for these newly acquired skills to be applied. Therefore, there are multiple courses of action required for the successful translation of educators obtaining trauma-informed knowledge and training to implementing effective TIP. For one, it is imperative that pre-service and in-service teachers learn about identifying and addressing symptoms of traumatic stress, either through professional development training and/or education, as discussed above. Additionally, these training opportunities could be more efficacious if they are supplemented with teacher coaching that specifically focuses on translating trauma-informed knowledge and strategies into the classroom (Chafouleas et al., 2016). Further, schools and school districts as a whole must support and adopt a trauma-sensitive environment that provides regular professional training opportunities to improve knowledge and best practices regarding childhood trauma and TIP (Minkos & Gelbar, 2021; Reker, 2016; Schafer, 2019). Although there is limited research on pre-service teachers' knowledge and competence regarding trauma-informed educational practices, pre-service teacher education is an important context for developing practical skills and supplementing future training opportunities that help create effective learning opportunities for students in the classroom (Minkos & Gelbar, 2021; Seidel & Sturmer, 2014).

Pre-service and in-service teachers spend significant amounts of time with children throughout the year and thus are able to identify behaviour changes and potential obstacles of intervention and recovery (Alisic, 2012). However, Smyth's (2017) qualitative research on four teachers supporting students affected by trauma suggested that limited "practical support for teachers in developing specific accommodations for traumatized children" resulted in teachers attempting to support their students without sufficient training (p. 37). This study examined how teachers responded to students who have suspected or confirmed experiences of adversity and who were demonstrating symptoms of traumatic stress. Interview analyses from this study revealed that all of the teachers declared students' mental health as a primary priority in order to achieve full academic potential, as hardship or problems in the child's microsystem had a significant impact on their education (Smyth, 2017). Smyth also found that children experiencing traumatic stress were described as displaying "extreme neediness," were

“deliberately seeking attention,” “avoiding the teacher’s attention,” and often brought items from home in an effort achieve a sense of comfort and belonging (pp. 36-37). With limited knowledge of their students’ histories, a lack of trauma-based training, and conflicting professional expectations, the teachers in Smyth’s study acknowledged the challenges of consistently and adequately accommodating the needs of all their students while attempting to support students facing adversity.

These findings were echoed by Schafer (2019) who conducted a qualitative study of the impact of a three-day trauma-informed professional development seminar on teachers, principals, and behavioural health professionals, six to nine months after the professional development training. Results showed that half of participants ( $N = 192$ ) had no prior knowledge of TIC, 80% of participants began the PD seminar with a positive attitude towards TIC, and 100% reported an increase in knowledge of TIC and incorporating at least one TIC technique in their classroom (Schafer, 2019). Barriers to implementing TIC were consistent with the literature in that 60% of participants reported lack of parental/caregiver support, 50% believed the class size impeded effective TIC, 40% believed school culture was unsupportive of TIC, and 30% of participants believed funding was an issue (Schafer, 2019). Finally, the interview data highlighted several common needs of teachers for implementing TIC after their PD training. These included: the need for schools to provide more mental health support for their students; specific comprehensive mandated reporter training; more unstructured time with students that wasn’t overshadowed by curriculum expectations and assessments; smaller class sizes to create a more authentic connection with students; and TIC instruction in their undergraduate teacher education (Schafer, 2019).

Incorporating a trauma-informed approach into a teacher education program was also emphasized in a related study on 327 public school teachers’ perspectives on supporting students experiencing traumatic stress (Reker, 2016). Reker’s survey research found that 47% received no training in their teacher education programs on childhood trauma or on how to support students experiencing traumatic stress, similar to Schafer’s (2019) study three years later. Reker’s (2016) study

also revealed that 43% of teachers received some trauma-specific training while employed as a teacher, and those with training reported higher self-efficacy in their ability to provide behavioural, emotional, and academic support to children displaying symptoms of traumatic stress. Trauma research shows that employing an empathetic response to undesirable or disruptive behaviours (e.g., “what is happening with you?”) rather than viewing the student as inherently bad or oppositional (e.g., “what is wrong with you?”) (Thomas et al., 2019, p. 428) is a dominant goal and reiterated theme of trauma-informed school practices (Krasnoff, 2015; Wolpow et al., 2009).

The challenges of not having access to a student’s educational history documents, or not having a comprehensive understanding of a student’s personal experiences, can lead teachers to rely on prior knowledge or fragments of interactions to guide their actions in the classroom (Cummings & Swindell, 2019). However, regardless of trauma-specific knowledge or training, developing awareness of potentially traumatic situations and corresponding symptoms of traumatic stress in their students’ lives could “help them to know their limits regarding their capacity to provide mental health supports and also know when to seek outside supports” (p. 140). The need for a systemically implemented pre-service and in-service teacher training to accommodate children experiencing traumatic stress continues to be affirmed in the literature, further supporting the notion that teachers want more support for their students, despite the potential shortcomings in their education and experiences.

### ***Challenges with a Trauma-Informed Approach***

While professional development training seems to be the most common method for educating teachers and school systems on childhood trauma, its effectiveness is impacted by teachers’ myriad logistical and personal challenges. Hodas (2006) formed a list of potential barriers to engaging effectively in trauma-informed practice, such as: the lack of adequate response to the trauma histories and experiences of the children; lack of attention to organizational culture and the need for organizational change; mistakenly attributing intentionality to the child’s behavior; and lack of adequate skill sets for staff, based on insufficient training and oversight. Perry and Daniels’ (2016) pilot study

implementing trauma-informed practices in a school setting indicated similar challenges that teachers face with TIP including the pressure that comes with changing the organizational culture, feeling burdened by having to accurately identify symptoms of trauma while meeting academic standards, the transitory nature of students, and limited information of and access to students' educational and family background. Further, their survey research on PD training revealed that only five out of 32 ( $n = 16\%$ ) teachers were able to recognize trauma better following the professional development opportunity, even though 29 out of 32 ( $n = 91\%$ ) thought their knowledge increased.

Likewise, Alisic (2012) conducted a qualitative study using semi-structured interviews with 21 teachers from 13 schools in the Netherlands and illustrated four common themes regarding the challenge of working with children experiencing symptoms of traumatic stress. First, there was uncertainty regarding the division between the role of the teacher versus social worker or psychologist, and how much emphasis should be put on social and emotional development versus academic skills. Alisic et al.'s (2012) subsequent quantitative study also found that teachers struggled with the boundary between teacher and mental health provider. A second struggle identified by Alisic (2012) was finding a balance with negotiating conflicting demands/needs, such as an individual's needs versus the group's needs, or giving extra attention to a child which then risks creating an outcast position. Third, teachers expressed feeling a lack of competence and a need for more professional knowledge in the area of trauma, as they were uncertain of the schools' protocols or guidelines regarding a student's exposure to trauma. Ko et al.'s (2008) review of trauma-informed systems also noted the lack of formal training or professional development that teachers and school staff have on the impact of trauma on children, and how they can support and help students experiencing traumatic stress achieve educational success. Fourth, teachers revealed the emotional burden of working with children experiencing traumatic stress, as it was affecting their personal/home lives or reminding them of earlier personal experiences (Alisic, 2012).

Zarzaca's (2018) mixed-methods qualitative study on teachers' experiences working with traumatized children supported these common themes and challenges in the TIP literature: the emotional

burden and secondary traumatic stress experienced by educators working with traumatized students, also referred to as compassion fatigue and burnout; a lack of training; and a lack of, or inconsistent support from administrators and teachers (Browne-Kealey, 2019; Figley, 1995; Grybush, 2020; Kimberg & Wheeler, 2019; Koenig et al., 2018; Langley et al., 2010; Martin et al., 2017; Thomas et al., 2019; Zarzaca, 2018). Additionally, several studies found that a lack of parent consent and engagement, teachers' competing responsibilities in the classroom, logistical barriers such as time, scheduling, and funding/resources; and cultural differences and linguistic barriers were common challenges to the implementation of TIPs and school-based interventions (Langley et al., 2010; NCTSN, 2016; Thomas et al., 2019). Altogether, the literature demonstrates how deciding what teachers should learn about trauma is strongly correlated with the multiple challenges of building capacity in a healthy and successful manner.

Overall, the insufficient research on pre-service teachers, and the limited research on teachers' attitudes regarding the symptoms, prevalence, prognosis, and intervention methods relating to childhood traumatic stress suggest that more education and professional development are needed in the area of childhood trauma. The review of the literature on teachers, above, provides a foundation for this study to explore pre-service teachers' attitudes on trauma and trauma-informed practice, along with bringing attention to the need for trauma-based courses in teacher education. The next section will review the research analyzing the impact that teacher and pre-service teachers' attitudes have on their students, further emphasizing the importance of measuring and understanding attitudes in order to build capacity and ultimately improve student outcomes. Additionally, the challenges with trauma-informed implementation and assessment in schools will be discussed, as one solution to these concerns has led to the creation of the ARTIC scale, an evidence-based survey that was used in this study.

### **In-Service and Pre-Service Teacher Attitudes**

Research shows that teachers' attitudes influence their judgment and strategies with regard to students' behaviour and needs, and subsequently influence students' access to support within and

outside of the classroom (Alisic, 2012; Glock, 2016; Glock et al., 2016; Kochenderfer-Ladd & Pelletier, 2008; Williams et al., 2007). A study by Williams et al. (2007) on teachers' perspectives of children's mental health service needs in urban elementary schools reiterated how schools are the frontline providers of student mental health support, and that teachers' perspectives of their students' mental health needs determined whether or not the child received such services.

Similarly, both stereotypical expectations and the implicit and explicit attitudes of teachers and pre-service teachers have been found to influence the disciplinary interventions and judgements of students (Glock, 2016; Glock et al., 2016). These attitudes particularly occur in highly demanding situations where perceptions and stereotypes can significantly influence one's behaviour and judgement of students (Glock, 2016; Glock et al., 2016). Glock's (2016) research on the effects of pre-service teachers' gender and ethnicity stereotypes on intervention strategies found that pre-service teachers consistently applied more misbehavior interventions to male students of ethnic minority identities. This confirms previous studies that suggest that, "teachers expect racial minority students to show more stereotypically negative behaviors and more classroom problems, especially when racial minority students behave according to teachers' stereotypes, they are judged less favorably and are seen as more aggressive" (for a review, see Glock, 2016, p. 109; Neal et al., 2003; Pigott & Cowen, 2000). Correspondingly, implicit attitudes are said to guide automatic and spontaneous behaviour, while explicit attitudes affect more controlled behaviour, and can be measured with questionnaires that invite introspection (Glock et al., 2016; Hofmann et al., 2005). However, these attitudes typically co-occur since they are rarely purely explicit or implicit (Olson & Fabio, 2009; for a review, see Glock et al., 2016). Glock et al. (2016) also argued that, since pre-service teachers lack the experience that seasoned teachers have in dealing with stressful tasks under time pressure, training pre-service teachers to recognize their implicit and explicit attitudes and motivations to respond without prejudice was crucial with regard to meeting their students' unique needs.

Several other studies also found a strong link between teacher attitudes and behaviour, although

the strength and direction of the correlation is debatable. For example, Schafer's (2019) study of educators' knowledge, attitudes, and behaviours regarding TIC revealed several conflicting theories of teacher behaviour and student outcomes. To illustrate, some research stated that teaching practices/behaviours changed only once knowledge was gained and attitudes were changed (Desimone, 2009), while others believed that changes in beliefs and attitudes came once behaviours were changed (Guskey, 2002; for a review, see Schafer, 2019). Nevertheless, a study on the effects of teachers' attitudes on student behaviour and outcomes, specifically regarding peer victimization and bullying, showed similar results of how teachers' beliefs impact classroom management strategies and peer interactions (Kochenderfer-Ladd & Pelletier, 2008). An earlier review of teacher attitudes towards children with ADHD also found that knowledge about ADHD was positively correlated with both length of career and years of experience teaching children with ADHD (for a review, see Kos et al., 2006), highlighting the role of knowledge and attitudes on teacher practice when engaging with students who have experienced issues in school.

A literature review undertaken by Kos et al. (2006) showed that attitudes can be mediated by one's perception of competence, and also cited a much earlier study (Rizzo & Vispoel, 1991) that revealed a positive correlation between perceived competence and favourable attitudes toward children with disabilities. Further, there was a significant positive correlation between perceived competence and years of teaching experience, although training and attitudes were not correlated (Kos et al., 2006; Rizzo & Vispoel, 1991). Rizzo and Vispoel (1991) analyzed which Physical Education (PE) teacher attributes were correlated with favourable attitudes towards students with "handicaps." Their study found that years of experience and perceived competence were significantly correlated with attitudes towards teaching "handicapped" students, with perceived competence being the strongest predictor of favourable attitudes. Moreover, the years of teaching "handicapped" students was positively correlated with favourable attitudes, while years of teaching in general had a negative correlation. This suggested that it was the nature, not length, of teaching that corresponded with favourable attitudes. Further, perceived

competence was strongly associated with academic preparation and years of teaching students with “handicaps.”

Unsurprisingly, two decades later, the bases of these findings are still relevant. While the variable of “students with mental, behavioural, and/or learning handicaps” is not being equated with “childhood trauma,” neuropsychological and educational research have demonstrated the correlation between childhood trauma and mental, behavioural, and/or learning challenges (Blaustein, 2013; Perfect et al., 2016; Perry, 2009; Rizzo & Vispoel, 1991; van der Kolk, 2003). Teacher preparation/education and trauma-informed teaching experience/familiarity are two factors that are known to be supportive of a trauma-informed approach and could be integrated in pre-service teacher education programs (Baker et al., 2016; Beamer et al., 2020; Reker, 2016; Rizzo & Vispoel, 1991; Schafer, 2019). Implementing TIP in undergraduate education programs could enhance perceived competence/self-efficacy related to trauma-informed care, and finally increase favourable attitudes towards diverse classrooms and students experiencing traumatic stress.

### **Assessing a Trauma-Informed Approach in Schools**

As previously noted, one of the issues that has plagued the implementation of trauma-informed approaches is how to implement TIP in schools, and how to effectively evaluate if an organization or institution is properly engaging in a trauma-informed approach (Record-Lemon & Buchanan, 2017). The lack of consensus on which terms to use to describe a trauma-informed approach, as well as the incorrect interchangeability of trauma-specific interventions versus TIP, have further complicated the study of the effectiveness of trauma-informed systems (Maynard et al., 2019). Record-Lemon and Buchanan (2017) conducted a narrative literature review on 27 peer-reviewed studies of TIP in schools and found that most studies revealed the potential for significant benefits when implementing TIP for students, educators, and families. Moreover, there was a significant increase in literature over the past ten years regarding TIP in various fields, such as medicine, psychology, child development, counselling, and traumatic stress studies, suggesting the multi-disciplinary support of TIP in schools (Record-Lemon &

Buchanan, 2017). However, while childhood trauma is prevalent in every school, there is a lack of empirical Canadian research and inadequate representation of the needs of culturally and ethnically diverse students, schools, and families, further reflecting opportunities for growth in TIP research (Record-Lemon & Buchanan, 2017).

In another attempt to shed light on the operationalization and evaluation of TIPs in schools, Maynard et al. (2019) conducted a systematic review of thousands of published and unpublished studies regarding the effects of trauma-informed approaches in U.S. schools, with a goal to inform policy and practice along with identifying gaps in the literature. Unfortunately, none of the 7123 abstracts that were screened managed to meet the criteria for inclusion in the review, and this endeavour did not reveal any rigorous evaluations of trauma-informed approaches in schools (Maynard et al., 2019). Therefore, this lack of evidence of clear trauma-informed approaches in schools warranted caution when implementing TIP as an overarching framework in schools (Maynard et al., 2019). The authors demonstrated hesitation when recommending adoption of a general trauma-informed approach in schools, as they were not able to find sufficient evidence to support if this approach truly worked, and if the benefits might outweigh the potential consequences for traumatized students and communities, including the costs of enacting and maintaining this shift in framework (Maynard et al., 2019). However, while this review was unable to determine an explicit characterization of how schools were accomplishing TIP as a whole, implementing empirically based trauma-informed programs with definitive steps, goals, and analyses was encouraged (Maynard et al., 2019).

Thomas et al. (2019) also conducted an interdisciplinary review of two decades of research regarding TIP in schools, specifically the “interventions used in schools to determine the dominant framework used for promoting and practicing trauma-informed care in schools and the effectiveness of school-based supports for trauma-affected youth to identify implications for changing teaching practice” (p. 422). Thirty-three articles published between 2001-2018 were used in this review, and the findings supported Maynard et al.’s (2019) study regarding the challenges of researching and implementing

empirically-based trauma-informed approaches in schools (Thomas et al., 2019). Thomas et al. found that 1) there was no dominant framework for TIPs, 2) there was no “consistent determination of effectiveness” of these TIPs in schools, 3) many records of the recommended TIPs were unable to demonstrate proof that the TIPs suggested were evidence-based, and 4) disciplinary perspectives were underreported, leading to claims of evidence and effectiveness that were not well-grounded nor consistent among different disciplines of research (e.g., education, psychology, social work) (p. 443).

Ultimately, while these reviews may elicit pessimism with regard to developing a clear and consistent evidence-based framework for implementing, maintaining, and assessing trauma-informed practices, the need for approaches that “provide healing, connection, support, and learning” and that help students experiencing traumatic stress is greater than ever (Thomas et al., 2019, p. 445). Therefore, researchers continue to strive for improved research, policies, and practices in the fields of childhood trauma and education, and pre-service teacher education programs can be at the forefront of empirically supported teaching practices.

### ***Attitudes Related to Trauma-Informed Care (ARTIC) Scale***

In support of improving the educational landscape with regard to trauma-informed approaches, Baker et al. (2016) attempted to address the barriers of effective TIP assessment by creating the ARTIC scale. The ARTIC scale (Baker et al., 2016) was created to attend to the two main problems of TIP research and practice: unclear operational definitions of TIC and the shortage of psychometrically robust instruments for its evaluation. By using a partnership-based approach, Baker et al. (2016) developed a cost-effective instrument to evaluate the TIC-relevant attitudes of staff working in schools, human service systems, and other settings serving individuals with histories of trauma. The three goals of the ARTIC scale were to:

- (a) reflect and synthesize the current theoretical and empirical knowledge related to TIC, (b) assess service providers’ attitudes relevant to TIC directly and specifically, and (c) still be easily

and inexpensively administered and scored by diverse institutions such as schools, human service agencies, and healthcare organizations. (pp. 63-64)

In order to test the validity of the ARTIC scale, the developer's recruited 760 adults employed in education, human services, and health care to complete the 45-question survey (ARTIC-45; Baker et al., 2016). The ARTIC-45 consists of seven empirically researched components of the attitudes and elements supportive (or unsupportive) of TIC implementation based on a 7-point bipolar Likert scale (Baker et al., 2016). The seven subscales include: underlying causes of problem behavior and symptoms; responses to problem behavior and symptoms; on-the-job behavior; self-efficacy at work; reactions to the work; personal support of TIC; and system-wide support for TIC. For schools or businesses that have not yet implemented a trauma-informed method of practice, the ARTIC-35 survey was developed and contains only the first five subscales and 35 questions. Notably, the developers of the scale also created an abbreviated ARTIC-10 survey and differentiated their three surveys (ARTIC 10, 35, and 45) for the Education sector (ED) and Human Services (HS) sector, with the only difference being "student" versus "client" in the wording of the questions.

The developers of the ARTIC scale support and correlate with several studies and initiatives related to TIC, and contend that the seven subscales "represent much of the current thinking about important elements of TIC" (Baker et al., 2016, p. 72). These include the research of the TLPI, mentioned earlier, as the first two questions on the TLPI's Trauma Sensitive Visions Questions for schools correlates with the first three subscales of the ARTIC scale; understanding the impacts of trauma on learning and behaviour, and helping schools support the safety of all students by responding effectively and promoting each individual's recovery from sources of traumatic stress (Baker et al., 2016; Cole et al., 2005; Cole et al., 2013). The developers further state that the fourth subscale, "self-efficacy," is related to successful implementations of evidence-based practices (Michie et al., 2005, as cited in Baker et al., 2016). Finally, the fifth subscale, "reactions to the work," substantiates literature on supporting and educating traumatized students, referring to the importance of self-care, and having an

awareness of vicarious traumatization, as both are necessary for creating and maintaining the ability to engage in effective trauma-informed care (Rossen & Hull, 2013).

In 2020, Baker et al. conducted a similar study ( $N = 1395$ ) supporting the validity of the ARTIC scale in the human services/health sectors ( $n = 507$ ) and the education sector ( $n = 888$ ). Notably, the participants in the human services/health sectors scored a higher mean score ( $M = 5.58$ ) on the ARTIC-35 than those in the education sector ( $M = 5.32$ ) (Baker et al., 2020). A number of comparisons have been highlighted between the studies done by Baker et al. in 2016 and 2020. The 2016 ARTIC-35 scores were found to be positively correlated with “familiarity with TIC” (.42) and engaging in “own research” (“knowledge” variable in 2020) around TIC (.34) (Baker et al., 2016). Consistently, the 2020 study also demonstrated a significant correlation between ARTIC-35 scores and “familiarity with TIC” (.34) and “knowledge of TIC” (.40) (Baker et al., 2020). Subscale analyses from 2016 reported “familiarity with TIC” significantly correlated with “underlying causes of behavior” (.42), “responses to problem behavior” (.36), and “on-the-job behavior” (.39). In contrast, the 2020 study only found “familiarity with TIC” to be most strongly related to “empathy and control” (.36) (formerly “on-the-job behavior”) and “reactions to the work” (.30) (Baker et al., 2020). Finally, the 2016 study found that “own research” was correlated with “underlying causes” (.37) and “responses to problem behavior” (.35). In 2020, “knowledge of TIC” was more significantly correlated with all the subscales except “self-efficacy;” “underlying causes” (.42); “responses to problem behavior” (.40); “empathy and control” (.36); and “reactions to the work” (.30) (Baker et al., 2020). Ultimately, these results demonstrate that having familiarity and/or knowledge regarding the topic of TIC is related to more favourable attitudes relevant to TIC, suggesting that any prior knowledge of trauma research could be conducive to better receptiveness and implementation of trauma-informed practices.

Baker et al. (2016) noted that the ARTIC scale could be used as a screening tool for current or prospective staff to determine whether they possess attitudes that would be conducive to a trauma-informed environment, even though there is still no objective way to determine the extent to which an

environment is trauma-informed. To date (2021), the ARTIC scale has been used in several studies, primarily in the fields of nursing (e.g., Stokes et al., 2020), child and youth services (e.g., Galvin et al., 2020), and educational research (e.g., Browne-Kealey, 2019; Grybush, 2020; Huffington, 2020, Vanderburg, 2017). Similar to this study, Vanderburg's (2017) thesis examined the impact of a professional development training in trauma-informed approaches on 163 teachers' attitudes, while Huffington's (2020) dissertation provided a correlational study of 38 teacher attitudes related to TIC and professional quality of life. Browne-Kealey's (2019) dissertation also looked at eight teachers' perspectives on trauma-informed education, finding favourable attitudes towards the implementation of TIC in schools. Finally, Grybush's (2020) dissertation explored how the perceptions of 147 rural elementary teachers on professional quality of life, personal histories of trauma, and professional development training were related to their attitudes towards TIC in schools.

Vanderburg's (2017) survey research revealed participants familiar with trauma-informed care displayed more trauma-aligned attitudes on the "underlying causes of behavior subscale" while teachers with less experience had significantly more trauma-aligned attitudes after the PD training. Additionally, overall teacher attitudes about "underlying causes of behavior," "self-efficacy at work," and "personal support of TIC" were significantly more trauma-aligned after the training. These results suggest that teachers are willing and capable of integrating a trauma-informed approach into their classrooms and schools, and therefore, pre-service teacher education may be a more effective and proactive way of improving a teachers' ability of identifying and improving all students' outcomes.

### **The Current Study**

The main objectives of this study are to gain insight regarding pre-service teachers' attitudes towards engaging in trauma-informed practice in their classrooms and schools. The mean scores of the ARTIC-35 scale and survey responses from Part 1 were used to determine whether participants were predominantly supportive or unsupportive of TIC. Statistical group differences between the variables of age group, gender, racial/ethnic identity, familiarity with childhood trauma, familiarity with TIP, and/or

support for TIP, with attitudes regarding trauma-informed care, as measured by ARTIC-35 mean scores, were explored. Finally, if there were differences between the six aforementioned variables and ARTIC-35 mean scores, further statistical analyses were undertaken to determine if they were statistically significant. The ARTIC scale mean scores of the four aforementioned studies (Browne-Kealey, 2019; Grybush, 2020; Huffington, 2020, Vanderburg, 2017) were compared to this study's results in order to provide a sense of performance norms and attitudes related to TIC, separate from the two studies conducted by the ARTIC scale developers (Baker et al., 2016, 2020).

## **Conclusion**

In this chapter, scholarly literature was reviewed on the topics of the epidemiology of childhood trauma, including a review of the ACE study, an innovative study in the field of trauma. Additional literature included studies of symptoms of child traumatic stress, misdiagnoses, and challenges with symptom identification; current literature on trauma-informed practice in schools, including frameworks currently being implemented, the challenges of adopting a trauma-informed approach, and barriers with measuring TIP; progress in professional development and teacher education, and; the importance of assessing teacher attitudes in relation to TIP in schools. With relatively limited research existing on the views of pre-service teachers, relevant literature on teachers was reviewed to inform this inquiry.

Overall, a review of the literature on childhood trauma in educational settings suggests that pre-service and in-service teachers feel inadequately prepared to identify and support students who are experiencing traumatic stress. As identified in this chapter, there are several promising areas of study identified in the literature. These include determining a dominant framework and best practices for implementing TIP in schools, deciding what teachers and pre-service teachers should know about childhood trauma, and how to train pre-service teachers and educational professionals adequately while overcoming barriers to potential trauma-informed programs. Further, the tasks of empirically measuring educators' knowledge and attitudes regarding symptoms of childhood trauma in the classroom, along with measuring if teachers are effectively engaging in trauma-informed practice/care, are still debated

and evolving. Altogether, there is sufficient evidence to suggest that teacher and pre-service teachers' attitudes are worth studying and understanding, as these have a direct correlation with their behaviour and feelings towards students and themselves, ultimately affecting their students' learning and behaviour (Baker et al., 2016; Beachum et al., 2013; Glock, 2016; Glock et al., 2016; Kochenderfer-Ladd & Pelletier, 2008; Kos et al., 2006; Mahlios & Maxson, 1995; Rizzo & Vispoel, 1991; Wiest, 1998).

The following chapter outlines the methodology for this study, including research questions, hypotheses, participants, sampling, data gathering, and data analysis.

## Chapter Three: Methodology

### Survey Research Design

This study employed a cross sectional, self-selected, self-administered survey research design. Survey research was chosen as it has many options for research goals, sampling, participant recruitment, administration method, and data collection instruments, and allows for the analysis of characteristics of a large sample fairly quickly (Ponto, 2015). Although using several different methods of survey administration can help with better sample coverage, such as providing surveys online and in paper-form, only the internet-based platform Qualtrics (<https://www.qualtrics.com>) was used, as the chances of a participant not having access to a computer or Internet was highly unlikely (Ponto, 2015). Internet-based surveys are also cost-effective and practical and, in order to reduce error, there is a clearly defined population of interest, user-friendly survey design, follow-up procedures for non-responders, and appropriate font sizing (Ponto, 2015). By employing Qualtrics, the online survey tool adopted by the University of Calgary, and made freely available to current students and employees, it was ensured that all University of Calgary policies and regulations were followed, as listed on their website (<https://www.qualtrics.com>).

### Research Questions

The research questions for this study were:

- 1) What are pre-service teachers' attitudes towards trauma-informed practice? Specifically, are their attitudes predominantly supportive or non-supportive of trauma-informed practice/care?
- 2) Amongst the variables of age, gender, racial/ethnic identity, familiarity with childhood trauma, familiarity with TIP, and support for TIP, are there group differences in ARTIC-35 mean scores? Moreover, if there are differences between groups, are they statistically significant?

## *Hypotheses*

1) Based on the literature summarized in the preceding chapter, it is hypothesized that the pre-service teachers will have an average ARTIC-35 score at or above 5.00/7.00, deemed to be supportive/favourable of TIC. Participants in Baker et al.'s (2020) follow-up ARTIC validity study displayed a mean ARTIC-35 score of  $M = 5.42$ , although the subscale of education sector participants obtained a mean score of  $M = 5.32$ , while the human services/health sector scored an average of  $M = 5.58$ . Schafer's (2019) study reported that 80% of participants began the PD seminar with a positive attitude towards TIC, which could support the hypothesis that pre-service teachers who self-selected to be part of this study might already have supportive attitudes towards TIC. Further, it is hypothesized that the majority ( $n > 50\%$ ) of participants will believe it is important for teachers to learn about TIP (the "support for TIP" variable), as revealed by the yes/no response in Question 11. Due to the large and diverse prevalence of childhood trauma, it is also predicted that participant responses will mention the certainty of having students presently or previously experiencing traumatic stress, therefore supporting the notion that symptoms of childhood trauma, and engaging in trauma-informed practices, are important for both new and seasoned teachers to learn (Blaustein, 2013; SAMHSA, 2014).

2) Regarding the second research question, a review of the literature and scores in the original ARTIC-35 scale gathered by Baker et al. (2016) support the hypothesis that familiarity with childhood trauma, familiarity with TIP, and support for TIP, will be the variables that will have the most significant group differences with ARTIC-35 scores. Several studies also support this hypothesis (Chafouleas et al., 2016; Reker, 2016; Rizzo & Vispoel, 1991; Vanderburg, 2017). Chafouleas et al. (2016) reported that basic content knowledge, measured by familiarity with TIC, was required to successfully engage in TIPs while Reker's (2016) study also supported the notion that previous trauma-related training ("familiarity with TIC" or "familiarity with childhood trauma") was related to perceptions of higher self-efficacy in their ability to provide behavioural, emotional, and academic support to children displaying symptoms of traumatic stress. Moreover, Rizzo and Vispoel's (1991)

study supported the hypothesis that academic preparation and experience with childhood trauma (e.g., “familiarity with trauma” and “familiarity with TIC”) was related to overall higher ARTIC-35 scores. A review of the literature suggests that barriers to implementing a trauma-informed approach include a lack of knowledge and training (Schafer, 2019; Zarzaca, 2018) and, therefore, it is hypothesized that increased academic preparedness/education will enable teachers to better support their students, as reflected in higher overall ARTIC-35 mean scores. (Alisic et al., 2012; Baker et al., 2016; Cole, 2013; Rossen & Hull, 2013; Reker, 2016; Smyth, 2017).

### **Participants**

Participants were registered students recruited from the Bachelor of Education programs at four universities in Alberta. Initially, recruitment was sought from five additional post-secondary institutions; however, due to lengthy recruitment processes, polite rejection, or lack of initial response to recruitment requests, they were no longer part of the research recruitment (as described in the Procedure section). Participants were recruited by email through a third-party intermediary who used the Education department listserv, or by their course instructor or teaching assistant.

### ***Inclusion and Exclusion***

There were several criteria for inclusion for this study. Participants must have been registered students in a Bachelor of Education program at one of the post-secondary institutions of recruitment. Demographic information, such as age, gender, race/ethnicity, year of program, and program specialization, was noted, but not required. Lastly, access to the Internet and basic English language proficiency were also required to complete the surveys. The exclusion criteria for this study involved access to the Internet and basic English language proficiency.

### ***Participant Characteristics***

76 pre-service teachers accessed the Qualtrics (<https://www.qualtrics.com>) survey online, with only 6 of those surveys not adequately completed and submitted and consequently considered invalid for this study. 70 participants completed the demographic questionnaire in Part 1, and 57 completed Part 1

and the ARTIC-35 survey in Part 2. Therefore, it is considered that there were 70 participants in this study, with 13 participant surveys containing missing data that affects analyses with ARTIC-35 scores for the second research question. Of those who completed Part 1 of the Qualtrics survey (see Table 1), 80% of total participants were female and 20% male. The majority of all participants were between the ages of 18-24 (57.14%), with 25.71% being 25-30, 10.0% were ages 31-40, 5.71% were 41-50, and finally 1.42% reported being over the age of 50.

84.29% of all participants identified as “white,” 6.58 % identified as “Asian” and “Other.” Those who specified in the “other” category ( $n = 3$ ) included “South Asian” ( $n = 1$ ), “Middle Eastern/Arab” ( $n = 1$ ), and “European” ( $n = 1$ ). 1.43 % of all participants identified as “Black/African Canadian” and “Hispanic or Latino.” Finally, no participants identified as “First Nations.” With a “Yes” or “No” option, a slight majority 54.29% of all participants reported having some previous knowledge, training, or formal education regarding childhood trauma, reported as the “familiarity with childhood trauma” variable, with 45.71% selecting “No.” With a “Yes” or “No” option, the minority 41.43% of all participants reported having some previous knowledge, training, or formal education regarding trauma-informed practice/care, reported as the “familiarity with TIP/TIC” variable, with the majority 58.57% selecting “No.” 100% of participants reported “yes” when asked if they believed it was important for teachers/pre-service teachers to learn about trauma-informed practice, which was reported as the “support for TIP” variable. All but one ( $n = 69$ ) participant declared having some previous practicum experience.

**Table 1***Participant Demographic Characteristics*

Variable	<i>n</i>
<b>Gender</b>	
Female	56
Male	14
<b>Age</b>	
18-24	40
25-30	18
31-40	7
41-50	4
Over 50	1
<b>Race/Ethnicity</b>	
White	59
Asian	5
Other	4
Black/African Canadian	1
First Nations	0
Hispanic or Latino	1
<b>Registered University</b>	
University 1	37
University 2	20
University 3	9
University 4	4
<b>Familiarity with Childhood Trauma</b>	
Yes	38
	32

No	
Familiarity with TIP/TIC	
Yes	29
No	41
Support for TIC	
Yes	70
No	0
Practicum Experience	
Yes	69
No	1

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*Note.*  $N = 70$ .

### **Sampling Procedure**

There were several methods of contacting the Deans and Associate Deans for permission to conduct research in their Education program. Initially, recruitment was planned to take place solely at one post-secondary institution. However, due to fears of a low sample size, a Google search was used to determine the contact information of the Deans or Associate Deans of Education of three other universities in Alberta. After contacting the Associate Dean of the initial institution for recruitment, the researcher was given the recommendation to recruit at additional post-secondary institutions and was provided contact information for each of these institutions. Next, the Deans and Associate Deans of the teacher preparation programs of the aforementioned post-secondary institutions in Alberta were then contacted via email for permission to recruit participants in their undergraduate program (see Appendix A). The voluntary and anonymous nature of this research was explained, along with the minimal risks according to the details in the university ethics application. The Deans and Associate Deans were also asked to provide the contact information of their administrators or appropriate intermediaries. An intermediary was necessary to ensure that participants did not feel coerced to participate by those in

formal leadership roles within their program. Several institutions did not respond within one week, and therefore were contacted a second time with a similar research recruitment request. After these two recruitment attempts, four Alberta post-secondary institutions provided approval for this study. The names of these four institutions were anonymized for confidentiality.

### **Sample Size**

As previously mentioned, 70 participants completed the Part 1 Demographic section, and 57 participants completed both the Part 1 Demographic section and Part 2 ARTIC-35 section. Therefore, 25% of the surveys had missing data ( $n = 19$ ), and 75% ( $n = 57$ ) of surveys met the ARTIC scale developer's assumption that 4 out of 7 items in each subscale were answered. Out of the 70 surveys submitted, 13 surveys were excluded from the quantitative aspect of this study as they did not complete the ARTIC-35 scale. Missing data from 15% to 20% of responses is typical within educational and psychological studies (Enders, 2003). The American Association for Public Opinion Research (2016) treats 80% of questions answered as a complete survey. However, a progress report of 74% and above for completed survey answers signified Part 1 was complete ( $N = 70$ ), but not Part 2 (ARTIC-35 scale) and, therefore, 70 surveys were used for demographic, "familiarity," and qualitative data even though the ARTIC-35 section was deemed incomplete. All qualitative responses, regardless of completion of the survey, were kept as data for this study.

### **Data Collection Instrument**

#### ***Part 1: Demographic Questionnaire***

The researcher contacted the Traumatic Stress Institute to seek permission to use the ARTIC scale in this study and to access to the ARTIC-35 scale and its assessment tools. As the participants of this study were not yet employed as teachers, the ARTIC-35 survey, rather than the ARTIC-45, was the appropriate choice for measuring their attitudes related to TIC. The ARTIC-35 Education scale was the primary measurement tool; however, demographic information was collected as supplementing research

variables for analysis. Demographic information gathered was similar to Baker et al.'s (2016) study, which included gender, age, race/ethnicity, University of enrolment, program specialization, year of program, familiarity with childhood trauma, familiarity with trauma-informed care/practice, where they gained any knowledge of childhood trauma, where they gained any knowledge of trauma-informed practice, and if they had any practicum experience. Participants were also asked if they believed it was important for teachers/pre-service teachers to learn about trauma-informed practice, deemed as the "support for TIP" variable (Question 11), and provided space to elaborate on their yes/no answer (Question 12) for potential qualitative analysis.

It is important to note that the questions, "do you have any previous knowledge, training, or formal education regarding childhood trauma?" and "do you have any previous knowledge, training, or formal education regarding trauma-informed practice?" in this study were used as the "familiarity with childhood trauma" and "familiarity with trauma-informed practice/care" variables, respectively, for data analysis. The developers of the ARTIC scale's original study had four levels of questions to measure participants' familiarity with TIC including "how familiar are you with TIC," had they done their own research on TIC, do they have any formal training on TIC, and if TIC was currently implemented at their workplace (Baker et al., 2016). Therefore, familiarity with TIC, personal research, formal training, and first-hand exposure to TIC implementation were four distinct measures, as opposed to this study which combined the questions of knowledge, training, and formal education as one "familiarity" variable.

Baker et al.'s (2020) follow-up study to validate the ARTIC scale also had knowledge, familiarity, and formal training as distinct variables. Participants' familiarity with TIC was measured on a 4-point Likert scale, formal training with TIC as a "yes/no" response, and knowledge about trauma-informed approaches consisted of 11-14 multiple choice questions on prevalence, impact, and principles of trauma and TIC (Baker et al., 2020). In the study being described within this thesis, the decision was made to combine these variables for several reasons. First, due to concerns regarding a possibly low sample size, the researcher attempted to simplify the survey and decrease the number of questions being

asked in hopes of increasing survey completion rates, as the ARTIC-35 scale was already a time-consuming commitment. Second, at the time of the Part 1 demographic questionnaire development, there was not enough literature providing support for differentiating the variables of familiarity, knowledge, and training in TIC in relation to trauma-informed practices and in-service teacher or pre-service teacher populations. Finally, the researcher did not find any empirical consensus in the literature regarding what pre-service teachers should know about childhood trauma and trauma-informed practices and, therefore, the task of creating a knowledge-testing portion of the survey to inform the “knowledge” versus “familiarity” variable was left as a potential goal of future research on this topic.

### ***Part 2: ARTIC-35 Education Scale***

The ARTIC-35 Education scale (Baker et al., 2016) consisted of 35 questions using a 7-point Likert scale with 5 subscales, and those subscales consisted of 7 questions carefully distributed throughout the survey so that they were not grouped and administered together. Each survey’s questions and layout were exactly the same for each participant, as decided by the developers of the ARTIC scale (Baker et al., 2016). The Likert scale questions consisted of two bipolar statements with responses on a continuum of beliefs with aspects of truth on both sides, therefore less likely being affected by social desirability (Brown, 2018). A description of each of the five subscales is as follows:

1. The first subscale measured attitudes towards a child’s *Underlying Causes of Behavior* by considering whether behaviour is adaptive and malleable versus intentional and fixed (e.g., “I believe that students’ learning and behavior problems are rooted in their history of difficult life events, OR I believe that students’ learning and behavior problems are rooted in their behavioral or mental health conditions.”)

2. The second subscale evaluated the subject’s *Responses to Problematic Behavior*: responding with kindness as an agent of change versus a perspective of accountability, consequences, and rules (e.g., “I believe that focusing on developing healthy, healing relationships is the best approach when

working with people with trauma histories OR I believe that rules and consequences are the best approach when working with people with trauma histories.”)

3. The third subscale assessed *On-the-Job Behavior*: empathic versus control-focused staff behaviour (e.g., “I believe that being very upset is normal for many of the students I serve OR I believe that it reflects badly on me if my students are very upset.”) To note, the developers of the scale changed the name of this subscale to “*Empathy and Control*,” as mentioned in their subsequent study (Baker et al., 2020).

4. The fourth subscale calculated *Self-Efficacy*: are subjects meeting the demands of traumatized children versus not being able to address their needs (e.g., “I believe that I have what it takes to help my students OR I believe that I don’t have what it takes to help my students.”)

5. Lastly, the fifth subscale measured *Reactions to the Work*: awareness of vicarious trauma, secondary traumatic stress, beliefs of accepting the effects of secondary trauma, and coping by seeking support versus attempting to minimize the effects, ignoring them, and/or being isolated from supports (e.g., “I believe that the fact that I’m impacted by my work means that I care OR I believe that sometimes I’m too sensitive to do this kind of work.”)

The researcher acknowledged the challenges with survey research design, including the use of a Likert scale. However, Krosnick and Tahk (2008) conducted a meta-analysis of the results of 706 tests of reliability from 30 between-subject studies in order to determine the relationship between scale length and reliability. Best practice findings suggested that to optimally measure bipolar constructs, where the zero point is in the middle and the two end points are extreme opposite values, a seven-point response scale should be used, as it also generates higher criterion validity (Krosnick & Tahk, 2008; for a review, see Malhotra et al., 2009). Krosnick and Tahk’s (2008) meta-analysis concluded that providing a neutral midpoint also increased reliability, and the ARTIC-35 scale follows both of these recommendations.

A psychometric evaluation of the ARTIC scale established further support for Baker et al.’s

(2016) measure of TIC. With a sample of 760 staff employed in health care, education, and human services, results showed a strong internal consistency and test re-test reliability over 6 months for the 45-item and 35-item composites, the seven subscales, and the 10-item short-form scale (Baker et al., 2016; Overstreet & Chafouleas, 2016). Cronbach's alpha was used to calculate the internal reliabilities of the ARTIC scale, and internal consistency reliability were deemed excellent for the ARTIC-35 ( $\alpha = .91$ ) and ARTIC-45 ( $\alpha = .93$ ) (Baker et al., 2016). Pearson's product moment correlations calculated test-retest reliabilities, resulting in strong correlations for the ARTIC-45; .84 at  $\leq 120$  days, .80 at  $\leq 121-150$  days, and .76 at 151-180 days (Baker et al., 2016). The ARTIC-35, however, demonstrated good temporal consistency, with a correlation of .84 at  $\leq 120$  days, .75 at 121-150 days, and .77 at 151-180 days (Baker et al., 2016). ARTIC subscales produced "strong test-retest reliability, ranging from .49 to .87, with the average test-retest correlation being .73 at  $\leq 120$  days, .69 at 121-150 days, and .65 at 151-180 days" (Baker et al., 2016, p. 68).

The construct and criterion-related validity of the ARTIC scale were analyzed using Pearson's product moment correlations, with ARTIC-35 composite scores strongly related to personal familiarity with TIC ( $r = .34-.45$ ) and most staff-level indicators of TIC implementation ( $r = .30-.59$ ) (Baker et al., 2016). The composite scores revealed slight variations between demographic characteristics, resulting in highly educated, white females working in health care or human services, with less face-to-face contact with students/clients (e.g., compared to daily direct contact of teachers and nurses), having scores more favourable to TIC (Baker et al., 2016).

### ***ARTIC-35 Scoring***

The ARTIC-35 Education scale has an Excel scoring tool to ensure that it is scored accurately. There are two steps to scoring the ARTIC-35. First, some items have to be reversed, and second, the items must be averaged by subscale. For each of the 5 subscales, the score can range from 1-7, and subscales can be calculated as long as the participant completed the majority of items within the subscale (e.g., at least 4 out of 7 items for the 5 main subscales). Since the ARTIC-35 scale is a

relatively new measure, there are no national norms provided. Qualitative responses from the Part 1 demographic questionnaire were not scored but incorporated into the results section to support the quantitative data gathered.

### **Data Collection**

Once permission was gained to recruit participants, the administrators and/or research facilitators who had access to the student listserv were contacted via email (see Appendix C). Through intermediary recruiting, it was asked that the consent form and survey link be sent to all relevant undergraduate students in their B.Ed. program, with an initial 30-day deadline for survey completion set for March 1, 2020 (see Appendix B). Since the administrators and course instructors agreed to recruitment at different time intervals, recruitment timelines and communications were unique to each post-secondary institution or course, and the deadline of March 1, 2020, was omitted. The researcher set up an automatic Qualtrics survey submission timeline of 30 days after the first opening of the online survey link provided to participants. The Qualtrics program kept track of how many surveys were opened, partly completed, and submitted, along with how many days remained on each survey until the 30-day automatic submission.

Survey data were collected through the internet-based platform Qualtrics (<https://www.qualtrics.com>) and the ARTIC-35 scale was manually transferred to this online program, with permission given by the developers of the scale. Qualtrics was chosen for several reasons including its guarantee of industry-leading certifications and standards and use of advanced security methods to maintain confidentiality and proactive risk management. This included perimeter defense and high-end firewall systems monitored constantly by security professionals; quick failover points; redundant hardware; and nightly encrypted backups. Qualtrics is FedRAMP Certified, which they claim to be the “gold standard of U.S. federal security compliance.” Qualtrics also employs ISO 27001, ensuring “information security best practices in asset management, access control, cryptography, and network security.”

In the collection of the data, the researcher relied on the intermediary at each postsecondary

institution and did not have access to the listservs, nor did the researcher know who was enrolled in the B.Ed. programs. The voluntary, confidential, and anonymous nature of this study were emphasized, and it was made clear that participation would have no bearing on a student's grade or future employment opportunities. Participants were informed that filling out and returning the survey implied consent to the research and any potential follow-up communication, meaning a signature was not required for consent. Participants were also informed that once surveys were submitted, participation in this study was not able to be withdrawn. One week after the intermediary's first participant recruitment request, administrators and instructors were asked to send one reminder to all potential participants. After two reminders were sent, the researcher kept track of the survey completions online and planned to end survey access once there was no online activity for five days.

There was an increase in survey completions near the end of the participants' 30-day Qualtrics deadline, however, which was several weeks after the intermediaries' second recruitment request. Since recruitment and survey completion was mainly occurring in March of 2020, the first month of the COVID-19 pandemic and subsequent lockdowns, the changing educational and social landscape may have initially delayed research participation, but then increased it as students were isolating and working from home. As a result, those assisting with recruitment in each post-secondary institution were contacted again near the end of March to recruit students one last time, with some being unable to fulfill this request and others agreeing to contact potential participants. In total, survey availability neared seven weeks, as the first survey recruitments began February 24, 2020, and the survey was closed on April 10, 2020.

### **Data Analyses**

The sample size, limited evidence-based literature, and brevity of quantitative and qualitative data led this study to be deemed "exploratory" with a summative goal of promoting knowledge of childhood trauma and trauma-informed educational practices as a necessity in teacher education and professional development (for a review, see Hallingberg et al., 2018). Exploratory studies allow for the

collection and analysis of both quantitative and qualitative data, since quantitative data and descriptive statistics can enhance and complement qualitative contributions (Stebbins, 2001). Reiter (2017) declared that exploratory social science research, “similar to confirmatory research, must begin with an explicit theory and clear and precisely formulated hypotheses,” and further notes that, “inductive and exploratory research openly embraces a using of theory in order to assess its explanatory strength and predictive power and make sense, or explain, a previously defined segment of reality” (p. 143).

While confirmatory research seems to dominate the social sciences and the researcher was confident in the importance of pre-service and in-service teachers having knowledge and familiarity with childhood trauma and trauma-informed practices, there were two justifications for describing the research methodology as explorative versus confirmatory (Reiter, 2017). First, the limited amount and empirical quality of research regarding pre-service teachers and trauma-informed knowledge, attitudes, and practice prevented a clear theory from being tested and confirmed by this study (Reiter, 2017; Thomas et al., 2019). Second, the continually evolving state of trauma research and the lack of both an internationally accepted dominant framework and definitions of childhood trauma and trauma-informed practices allowed for an exploratory model to offer more “plausible and therefore fruitful ways to examine and explain a limited segment of reality” (Reiter, 2017, p. 142).

The ARTIC scale was chosen as a reliable, psychometrically valid instrument to measure pre-service teachers’ specific attitudes related to trauma-informed practices/care (Baker et al., 2016, 2020). Preliminary research suggested the ARTIC-35 survey provides an objective method of determining whether or not an individual or group is trauma-informed and/or ready to implement a trauma-informed framework (Baker et al., 2016, 2020). This assertion was based on the theory that one’s attitudes and beliefs are related to their behaviours, and fundamentally the ability to successfully engage in TIP (Baker et al., 2016, 2020).

To address the first research question, if pre-service teachers' attitudes were predominantly supportive or non-supportive of trauma-informed practice/care, overall ARTIC-35 mean scores were determined using reverse coding and mean scores of Likert scale responses in Version 26 of SPSS (IBM Corp, 2019) and the Excel spreadsheet provided by the ARTIC scale developers (Baker et al., 2016). Along with the overall ARTIC-35 mean scores, each of the five ARTIC subscale mean scores were outlined, and scores equal to or above 5.00 out of 7.00 were deemed as "supportive" attitudes towards trauma-informed practices.

Additionally, yes/no survey responses from Part 1, question 11, "do you believe it is important for teachers/ pre-service teachers to learn about trauma-informed practice?" as described as the variable "support for TIP," were reported. The open-ended responses from the follow-up question, "why do you believe it is important for teachers/pre-service teachers to learn about trauma-informed practice?" were categorized into themes. Braun and Clarke (2006) defined a theme as capturing "something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set" (p. 10). Due to the length and quantity of each participant's qualitative data, several methods of qualitative analyses were ruled out. These included qualitative content analysis, thematic discourse analysis, thematic decomposition analysis, and interpretative phenomenological analysis (Braun & Clarke, 2006; Vaismoradi & Snelgrove, 2019). Despite the limitations with data and the exploratory nature of this study, Braun and Clarke's (2006) method guided the qualitative analyses in this study. Thematic analysis in qualitative research can be used with a variety of research questions and was defined as "a method for identifying, analysing, and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 6). Similarly, Roberts et al. (2019) stated that the process of thematic analysis "involves the identification of themes with relevance specific to the research focus, the research question, the research context and the theoretical framework" (p. 1). Therefore, themes were developed

by highlighting similar words or sentences in the raw data using a trauma-informed lens, and concepts in both TIP research and the ARTIC research (Baker et al., 2016, 2020) guided thematic categories.

To address the second research question, determining if there were any group differences between the variables of support for TIP, familiarity with TIP, familiarity with childhood trauma, age, gender, and ethnicity/race and ARTIC scores, a series of one-way Analysis of Variances (ANOVAs) and independent samples t-tests were run using the computer software programs SPSS Version 26 (IBM Corp, 2019; Kim, 2017). Since 100% of participants reported “support for TIP,” this variable was omitted from further statistical analyses. First, each of the five variables of age, gender, race/ethnicity, familiarity with childhood trauma, and familiarity with TIP, were tested to ensure the three assumptions were met. These included 1) tests of independence, 2) tests of normality, and 3) tests of homogeneity of variance (homoscedasticity) (Moder, 2007). Due to the small sample size, the Shapiro-Wilk test was used to explore normality, and if the significant value of this test was greater than 0.05 ( $p > 0.05$ ), the null hypothesis was accepted and the data was deemed normal (Mishra et al., 2019). If the P value fell below 0.05 ( $p < 0.05$ ), it would imply that the data significantly deviates from a normal distribution/curve, and the assumption cannot be met (Mishra et al., 2019). Levene’s test (Levene, 1960) was used to determine homogeneity of variances, and sample variances were deemed not equal if the P value significance was below .05 ( $p < 0.05$ ) (Kim, 2017). If the homogeneity of variances was not met, the Mann-Whitney U non-parametric test was conducted, since the sample size was low and “the number and nature of the parameters are flexible and not fixed in advance” (Nachar, 2008, p. 13).

Statistical analyses began once the three assumptions were determined. A one-way ANOVA was used to determine statistically significant differences between the means of the age and ethnicity/race variables, since there were three or more groups of independent variables, with ethnicity/race having six groups and age consisting of five groups (Kim, 2017). Independent sample T-tests were used with independent variables that only consisted of two groups, such as gender, familiarity with childhood

trauma, and familiarity with TIP (Kim, 2017). Due to the fact that one-way ANOVAs are an omnibus test that only reveal that at least two groups were different, and not which of the groups were significantly different from one another, further analyses could be undertaken if a significant difference between groups was realized (Armstrong, 2014; Kim, 2017).

Since there were multiple analyses/repetitive sampling conducted with the same dependent variable, ARTIC-35 mean scores, post-hoc analyses, or “analysis after the fact” were used to correct for significance levels (Kim, 2017, p.26). The Bonferroni Correction (Neyman & Pearson, 1928) was implemented since there were six inferential analyses conducted in order to ensure there were no group differences between University groups and ARTIC-35 scores and on the five independent variables analyzed (age, gender, race, familiarity with trauma, and familiarity with TIP). The Bonferroni correction protected against false positive results, since when “the number of tests increases, so does the likelihood of a type I error... hence, if a null hypothesis ( $H_0$ ) is true and  $p \leq 0.05$  is used as the test criterion for all tests, a significant difference will be observed by chance one in 20 trials” (Armstrong, 2014, p. 502). The post-hoc Bonferroni correction was applied to the six inferential analyses to protect against Type I error, with a corrected  $p$  value of  $p < .008$  rather than  $p < .05$ .

Survey results revealed that the majority of participants already had practicum experience ( $n = 69$ ); therefore, this independent variable was not analyzed against ARTIC-35 scores. Further, even though University affiliation was asked in the demographic part of the research survey, this variable was not analyzed with ARTIC-35 scores as there was no supporting research correlated with university membership. However, while the mean scores of the four universities were not compared, an ANOVA test was used to make sure there were no statistical differences between the universities. Moreover, individual post-secondary education program analyses regarding TIP courses and instruction were not conducted as this did not support the goals of this study. Nevertheless, comparing undergraduate

Education programs related to TIP exposure could be beneficial in future research to further promote the importance of pre-service TIP knowledge.

## Chapter Four: Results

The goal of the current study was to gather data on pre-service teachers' attitudes towards childhood trauma and trauma-informed practice/care, using a demographic questionnaire, open-ended questions, and the ARTIC-35 survey. The results of the two-part Qualtrics survey and corresponding data analyses are presented below in response to each research question.

### **Research Question 1: Quantitative Analysis**

The first research question considered was: What are pre-service teachers' attitudes towards trauma-informed practice? Specifically, are their attitudes predominantly "favourable/supportive" or "unfavourable/non-supportive" of trauma-informed practice/care? In answer to this question, the scores from the 57 pre-service teachers from four different post-secondary institutions in Alberta who fully completed both parts of the survey were analyzed based on their mean ARTIC-35 scores. The analysis of ARTIC-35 mean scores indicated that this study's 57 participants had an average overall ARTIC-35 score of  $M = 5.30$ ,  $SD = 0.617$ , which is deemed "supportive" by this study's measures. All of the ARTIC-35 subscale mean scores were above 5.00 (see Table 2), suggesting that as a group, pre-service teachers have favourable and supportive attitudes towards every subscale relevant to TIP.

**Table 2***ARTIC-35 Scale Mean Scores*

Scale	<i>M</i>	<i>SD</i>
1. Underlying causes of behaviour	5.09	.79477
2. Responses to problem behaviour	5.31	.80728
3. On-the-job behaviour	5.46	.64327
4. Self-efficacy at work	5.24	.74009
5. Reactions to the work	5.41	.84043
Total ARTIC-35 mean score	5.30	.61676

*Note.* Mean scores are out of 7,  $N = 57$ .

With regard to attitudes and familiarity with childhood trauma and TIP, demographic analyses from Part 1 indicated that 54.29% of all participants reported “familiarity with childhood trauma,” 41.43% reported “familiarity with TIP,” and 100% reported “support for TIP” (see Table 3). In terms of where the familiarity/knowledge of childhood trauma was acquired (see Table 4), with the option of choosing multiple selections, “work experience” was the most common area of acquisition ( $n = 29$ ). However, the responses of “no previous knowledge” and “personal experience” were the second most common variables chosen ( $n = 23$ ), with “independent interest/study” following closely in areas of knowledge acquisition ( $n = 21$ ). “Formal education” was the second least common response ( $n = 17$ ), with the option of “other” revealing the last four areas of TIP knowledge acquisition ( $n = 5$ ). These responses included professional development seminars ( $n = 2$ ), personal experiences of trauma within the family ( $n = 1$ ), training opportunities at summer camp ( $n = 1$ ), and experience from volunteer teaching ( $n = 1$ ; see Table 5).

**Table 3***Participant Demographic Familiarity*

Variable	<i>n</i>
Familiarity with Childhood Trauma	
Yes	38
No	32
Familiarity with TIP/TIC	
Yes	29
No	41
Support for TIP	
Yes	70
No	0

*Note.*  $N = 70$ .

**Table 4***Participant knowledge acquired about childhood trauma (highest to lowest)*

Type of knowledge acquisition	<i>n</i>	%
Work experience	29	24.58
No previous knowledge	23	19.49
Personal experience	23	19.49
Independent interest/study	21	17.80
Formal education	17	14.41
Other (see Table 5)	5	4.24

*Note.* Participants could select more than one response,  $N = 70$ .

**Table 5***“Other” Selected Knowledge Acquired About Childhood Trauma.*

Type of knowledge acquisition	<i>n</i>
Professional development seminar	2
Trauma in family	1
Training at summer camp	1
Volunteer teaching experience	1

*Note. N = 70*

Knowledge acquisition regarding the second familiarity variable, “familiarity with TIP/TIC” (see Table 6), with the option of choosing multiple selections, unfortunately demonstrated that “no previous knowledge” was the most common response ( $n = 30$ ). However, the area of “work experience” was the second most common variable chosen ( $n = 19$ ), with “formal education” being the third most common way to learn about TIP ( $n = 15$ ). “Independent interest/study” followed closely ( $n = 17$ ), with “personal experience” ( $n = 10$ ) and “other-professional development” ( $n = 3$ ) being the least common areas of TIP knowledge acquisition, respectively.

**Table 6***Participant Knowledge Acquired About TIP (highest to lowest)*

Type of knowledge acquisition	<i>n</i>	%
No previous knowledge	30	33.33
Work experience	19	21.11
Formal education	15	16.67
Independent interest/study	13	14.44
Personal experience	10	11.11
Other: Professional Development	3	3.33

*Note.* Participants could select more than one response,  $N = 70$ .

### **Research Question 1: Qualitative Analysis**

The penultimate question in Part 1 of the Qualtrics survey, “Why is it important for teachers/pre-service teachers to learn about trauma-informed practice?” provided a wide-range of brief qualitative responses from 90% ( $n = 63$ ) of participants who chose to elaborate on the previous yes/no question, “Do you believe it is important for teachers/pre-service teachers to learn about trauma-informed practice?” Using the principles of thematic analysis in qualitative research as a guide, four interconnected main themes were developed (see Table 7; Braun & Clarke, 2006; Nowell et al., 2017; Roberts et al., 2019). Three of the four themes could be associated with several subscales in the ARTIC-35 survey, further emphasizing the validity and importance of these concepts in understanding and measuring attitudes related to trauma-informed practices. While analyzing and categorizing the various participant responses, many of the statements could be designated to more than one theme. The researcher chose to assign the responses that seemed to best reflect each concept, and did not repeat responses that could fit into multiple themes. Several responses were also left as they did not fit the four themes nor did they have enough similarities to provide evidence of another theme.

*Theme 1: Teachers should understand the underlying/root cause of their students' behaviours in order to improve their teaching practices.*

Complementing the 1<sup>st</sup> ARTIC-35 subscale, “underlying causes of behaviour,” a repeated theme that arose out of the survey results emphasized the importance of teachers recognizing how traumatic stress could affect the way a student engages in the classroom. The researchers and developers of the ARTIC scale maintain that favourable educator attitudes conducive to trauma-informed care entail believing that students’ behaviours are adaptive rather than intentional and changeable rather than fixed (Baker et al., 2016). A trauma-sensitive lens requires creating a classroom environment that students perceive as safe and nurturing, which in turn could enhance the child’s ability to engage more freely, thereby improving the teachers’ ability to support their learning and development (Cummings & Swindell, 2019). As one participant noted, “trauma can lead to potential behaviors in the classroom, and understanding the trauma behind them can lead to better class management and inclusion of the student in the class.” This quotation demonstrates that this participant was aware of the connection between potential childhood trauma and the efficacy of their own teaching practice.

Trauma-informed practices support the notion that difficult life experiences are more likely to be correlated with a student’s behaviour and learning capabilities, rather than the learning, mental health, and/or behaviour challenges/diagnoses that are often a result of these traumatic experiences (Baker et al., 2016). As another participant stated,

There are students everywhere in our classrooms with trauma regardless of if we know it or not. Understanding what happened to you instead of thinking what is wrong with you, allows us as educators to better understand our students and teach to their individual needs.

This comment has been expressed in TIP literature (e.g., Krasnoff, 2015; Thomas et al., 2019; Wolpov et al., 2009), namely, that the basis of TIP is a teacher’s understanding and compassionate shift in perspective regarding how trauma affects students’ behaviour, relationships, survival strategies, and

overall development. Since teachers may not have the luxury of a comprehensive understanding of or the ability to obtain information regarding their students' past experiences inside and outside of the school, being aware of these limitations and how to respond accordingly also supports a trauma-sensitive approach to teaching and classroom management. This was further echoed by a participant who stated, "some students will inevitably come to class with trauma and this may affect their experience, participation, and behaviour at school. Teachers should know how to respond in a way that is helpful." Knowing how to respond to trauma, according to this participant, was a key component of successful trauma-informed practice.

*Theme 2: Knowledge of trauma and TIP will enhance empathic responses to problematic behaviour.*

Many of the participants' open-ended answers supported the 2<sup>nd</sup> ARTIC-35 subscale, "responses to problematic behaviour," which encourages teachers to respond with kindness and empathy as a motivator for change, rather than using a discipline-based approach with consequences and punishment avoidance as the approach for behaviour management (Baker et al., 2016). As one participant noted, "trauma impacts every aspect of a person's life. When a student is acting in a way that is a response to trauma, teachers need to be able to approach them with understanding and empathy." The importance of a teacher's/educator's empathetic response to students' behaviours that may appear problematic, disruptive, or challenging in the classroom was also echoed by another participant and is firmly supported in the literature regarding trauma-sensitive approaches in schools. A participant also stated:

It's important for teachers to realize that their students come from a variety of backgrounds, including traumatic/abusive/neglect experiences. It's especially important for teachers who have no traumatic experience personally, as they will need to know how to empathize and respond appropriately to students with those experiences.

As expressed in the quotation above, empathy was noted as a key element of successful teaching practice and the creation of a caring classroom environment.

Several survey responses also mentioned how trauma-informed training could prevent teachers from inadvertently re-traumatizing their students or making the situation worse, another aspect of TIP that protects both students and teachers (Duckworth & Follette, 2012; SAMHSA, 2014). One participant stated, “so many of our students have trauma at some point. School can be a place where trauma occurs and we need to know how to help students who have experienced trauma or who have a high ACE score so that we do not compound the problem.” Efforts to address and prevent re-traumatization not only coincided with goals to increase empathetic responses towards students’ problematic behaviour, but were also viewed as an overarching goal of a trauma-sensitive approach that fits into the third and fourth themes of the survey participants’ open-ended responses (SAMHSA, 2014).

*Theme 3: Knowledge of trauma and TIP could contribute to teachers feeling better prepared to support/help students who exhibit symptoms of trauma.*

Multiple participant responses mentioned the importance of teachers having the skills and confidence to support and respond to students displaying symptoms of trauma or disclosing traumatic experiences, which corresponded with the 4<sup>th</sup> ARTIC-35 subscale, “self-efficacy.” Self-efficacy was measured by one’s perceived ability to meet the demands and needs of traumatized children, and the term “support” appeared in several survey responses. One participant remarked that “now more than ever, educators need to learn about trauma-informed practice. Our students face trauma and we need to be best equipped to support their needs.” Another participant noted, “I recently learned the full definition and scope and trauma, which has a much wider scope than I ever realized. I believe that teachers need to learn how to support students who have experienced trauma.” Further, one participant wrote, “many of our students come into the classroom having experienced trauma in numerous ways, by having teachers who are competent and knowledgeable in trauma-informed practice we can better meet the needs of our students.” Common to the qualitative responses of the participants in this theme was the idea that teachers must be provided information regarding TIP explicitly as part of the training they receive.

All of the responses noted within this theme described how teachers need to learn how to respond to symptoms of traumatic stress in order to effectively support the needs of their students, rather than relying on common sense or a perceived innate ability or skill. As one participant summarized:

I have taken it upon myself to achieve a variety of training including that of being a first responder to abuse. I sought [sic] out this training as I had a student in my placement share a disclosure with me. Unfortunately, I had received no training from the faculty and this is a very serious matter, so I took it upon myself to educate myself further. The reality is, as educators, we are front line workers. This stories and experiences we share with our students are unfiltered and whether we like it or not, how we interact with these students will have a lasting impression. By educating ourselves we created a professional knowledge to aid us in responding to the issues we are likely to face in our classrooms in the future. Not only protecting us, but our students.

What this participant described so eloquently was the dual role that many teachers perceive for themselves and the resultant responsibility to ensure they are up to the challenge of addressing trauma within their classrooms, a key element of the last theme presented.

*Theme 4: Trauma in the classroom is inevitable; teachers must have the knowledge and skills to address symptoms of trauma and create a safe learning environment.*

This theme combined all of the previous concepts mentioned above regarding how specific training and knowledge of childhood trauma and trauma-informed practices would ameliorate teachers' abilities to support students and foster safe and successful learning environments. Many of the participants recognized that there will be students in every classroom with traumatic histories or currently experiencing traumatic stress. To that effect, one participant confirmed that "teachers will encounter students from all types of backgrounds. It is our responsibility to learn how to best care for all students, including those with traumatic experiences." Similarly, a participant declared,

I think for any teachers this practice is important. I imagine there is a LEAST one student in every class who has trauma in their past. If we as teachers are better informed on how to address

their trauma we could facilitate learning in a more effective way while fostering an effective safe space for them in our classrooms.

Further echoing this concept, one participant commented, “teachers should be equipped with knowledge about trauma in children. Classrooms are full of children with extreme pasts and experiences and teachers should have tools to deal with that appropriately.” The certainty of having students that have lived experiences that are likely to negatively affect their learning and behaviour at school was reiterated with other participants’ responses, who also expanded the notion to include those besides students who may suffer due to trauma. One participant stated that “trauma is something students, and everyone, brings with them every day and it affects them in so many ways. It is important to be aware of this when teaching and have the knowledge of it to shape our teaching.” These statements further emphasize this pre-service teacher population valuing an educated trauma-informed lens, despite the majority of participants not having any familiarity with TIP, and only a small majority having familiarity with childhood trauma.

The goal of creating a safe learning environment and enacting teaching practices that contribute to feelings of safety among students complements the notion and statistical probability that every classroom will have children who are currently experiencing or have experienced traumatic situations. As one participant stated, “as teachers it’s our job to provide a safe learning environment for all of our students, this includes being educated on trauma informed practices.” As a result, teachers need to be equipped with the knowledge and skills to address these complex situations, create a safe space, and support the needs of every student in their classroom. As another participant stated, “if we want to be caring teachers who provide a safe atmosphere for our students, it is important to know how to help students from all walks of life and experiences.” To encapsulate this theme, one participant asserted that “in every classroom there is at least one student who has experienced trauma. I think it would benefit us to learn the best practices for helping that student and would allow us to better facilitate a safe space for them.” Overall, most of the participants’ responses supported the notion that trauma-informed

education/training, empathy, and general knowledge of childhood trauma were significant skills that pre-service and in-service teachers should have in order to create a safe learning environment that allows both students and teachers to thrive.

**Table 7**

*Survey Part 1 Question 12: Why is it Important for Teachers/Pre-service Teachers to Learn about Trauma-Informed Practice?*

Themes	Example quotations
<p>1. Teachers should understand the underlying/root cause of students' behaviours in order to improve their teaching practices.</p>	<ol style="list-style-type: none"> <li>1) Trauma can lead to potential behaviors in the classroom, <i>understanding the trauma behind them</i> can lead to better class management and inclusion of the student in the class</li> <li>2) It helps foster a <i>greater understanding of why students behave</i> and take in information the way that they do.</li> <li>3) There are students everywhere in our classrooms with trauma regardless of if we know it or not. <i>Understanding what happened to you</i> instead of thinking what is wrong with you, allows us as educators to better understand our students and teach to their individual needs.</li> <li>4) Coming from a place of this <i>understanding</i> will make people realize <i>behaviours stem from unmet needs. Not "bad" kids.</i></li> <li>5) Some students will inevitably come to class with trauma and this may affect their experience, participation, and behaviour at school. <i>Teachers should know how to respond</i> in a way that is helpful.</li> <li>6) Trauma <i>manifests in many ways in behaviour and student ability. Knowledge on this topic</i> gives a broader resource base to help students.</li> </ol>
<p>2. Knowledge of trauma and TIP could enhance empathic responses to problematic behaviour.</p>	<ol style="list-style-type: none"> <li>1) Trauma informed approach should be the foundation of a teachers approach <i>before they are quick to judge a student as anything potentially negative.</i></li> <li>2) While school is where our responsibilities as teachers lie, students' lives are affected by many factors, including trauma. <i>Being aware and kind</i> makes us better teachers.</li> <li>3) It's important for teachers to realize that their students come from a variety of backgrounds, including traumatic/abusive/neglect experiences. It's especially important for teachers who have no traumatic experience personally, as they will need to <i>know how to empathize and respond appropriately</i> to students with those experiences.</li> <li>4) Trauma impacts every aspect of a person's life. When a student is acting in a way that is a response to trauma, teachers need to be able to approach them with <i>understanding and empathy.</i></li> <li>5) So many of our students have trauma at some point. School can be a place where trauma occurs and we <i>need to know how to help students</i> who have experienced trauma or who have a high ACES score so that <i>we do not compound the problem.</i></li> </ol>

3. Knowledge of trauma and TIP could contribute to teachers feeling better prepared to support/help students who exhibit symptoms of trauma.

- 1) I would love to learn but not sure how. *(TIP) makes teachers more able to support students* in their class, specifically those suffering with trauma. (I) would love to learn!
- 2) Now more than ever, educators need to learn about trauma-informed practice. Our students face trauma and *we need to be best equipped to support their needs.*
- 3) Due to our slowly progressive society, topics like trauma (formerly seen as taboo) are now being discussed more and more. Now, as a society, people are recognizing just HOW many individuals have undergone some sort of trauma, more specifically, childhood trauma. I believe classrooms are places for students to transform and learn about themselves and the world around them. *It's vital that teachers are being able to support all students* with all sorts of experiences if we intend to have a thriving world.
- 4) I recently learned the full definition and scope and trauma, which has a much wider scope than I ever realized. I believe that teachers need *to learn how to support students who have experienced trauma.*
- 5) Many of our students come into the classroom having experienced trauma in numerous ways, by having *teachers who are competent and knowledgeable in trauma-informed practice we can better meet the needs of our students.*
- 6) I have taken it upon myself to achieve a variety of training including that of being a *first responder to abuse.* I sought [sic] out this training as I had a student in my PSI placement *share a disclosure with me.* Unfortunately [sic] I had received [sic] no training from the faculty and this is a very serious matter, so I took it upon myself to educate myself further. The reality is, as educators, we are front line workers. This stories and experiences we share with our students are unfiltered [sic] and whether we like it or not, how we interact with these students will have a lasting impression. *By educating ourselves* we created a professional knowledge to aid us in responding to the issues we are likely to face in our classrooms in the future. Not only protecting [sic] us, but our students.
- 7) I know many many children experience trauma. Sometimes we can't tell, sometimes we can. *If we knew there [sic] signs more and how to help them,* we could better help our students.

4. Trauma in the classroom is inevitable; teachers must have the knowledge and skills to address symptoms of trauma and create a safe learning environment.

- 1) Teachers should be *equipped with knowledge about trauma* in children. *Classrooms are full of children with extreme pasts* and experiences and teachers should have tools to deal with that appropriately.
  - 2) *Teachers will encounter students* from all types of backgrounds. It is our responsibility to learn how to best care for all students, including *those with traumatic experiences.*
  - 3) *Teachers should know how to respond* in a way that is helpful.
  - 4) *Trauma is something students, and everyone, brings with them everyday* and it affects them in so many ways. It is important to be
-

- aware of this when teaching and have the knowledge of it to shape our teaching.
- 5) *In every classroom there is at least one student who has experienced trauma. I think it would benefit us to learn the best practices for helping that student and be would allow us to better facilitate a safe space for them.*
  - 6) *To foster positive relationships and an inclusive school culture, all should feel at ease and safe*
  - 7) *If we want to be caring teachers who provide a safe atmosphere for our students, it is important to know how to help students from all walks of life and experiences.*
  - 8) *I think for any teachers this practice is important. I imagine there is at LEAST one student in every class who has trauma in their past. If we as teachers are better informed on how to address their trauma we could facilitate learning in a more effective way while fostering an effective safe space for them in our classrooms.*
  - 9) *As teachers it's our job to provide a safe learning environment for all of our students, this includes being educated on trauma informed practices.*
  - 10) *Most people, if not everyone, will experience some sort of traumatic event in their life. Learning how to cope and overcome the circumstances is a valuable piece to have. Learning how to support those who experience trauma is also important.*
  - 11) *Classrooms are diverse and eventually you will meet a student who is either suffering or suffered from trauma abuse or both.*
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## Research Question 2: Quantitative Analysis

The second research question asked: Amongst the variables of age, gender, racial/ethnic identity, familiarity with childhood trauma, and familiarity with TIP, are there group differences in overall ARTIC-35 mean scores? If group differences emerge, statistical analyses will determine if the group differences are statistically significant. Comparable to the first research question, since there was missing data from 13 of the 70 participants in this study, the second research question was answered through statistical analyses of data provided by only the 57 participants who completed the ARTIC-35 survey in Part 2. The demographic data of the 57 participants who completed 100% of the research study are shown in Table 8.

**Table 8***ARTIC-35 Participant Demographic Characteristics*

Variable	<i>n</i>
Gender	
Female	44
Male	13
Age	
18-24	33
25-30	15
31-40	4
41-50	4
Over 50	1
Race/Ethnicity	
White	46
Asian	5
Other	4
Black/African Canadian	1
First Nations	0
Hispanic or Latino	1
Registered University	
University 1	30
University 2	17
University 3	7
University 4	3
Familiarity with Childhood Trauma	

Yes	30
No	27
Familiarity with TIP/TIC	
Yes	22
No	35
Support of TIP/TIC	
Yes	57
No	0
Practicum Experience	
Yes	56
No	1

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*Note.*  $N = 57$

In order to analyze group differences in overall ARTIC-35 mean scores, it was assumed that data from the four universities sampled were equivalent. A one-way between subjects ANOVA on Version 26 of SPSS was conducted to compare the effect of university affiliation on overall ARTIC-35 mean scores. A one-way ANOVA test found no statistically significant differences between universities on overall ARTIC-35 mean scores at the  $p < .008$  level, [ $F(3, 53) = 0.365, p = .779$ ], thereby allowing for other analyses to be conducted. ARTIC-35 mean scores and standard deviations by university affiliation

are shown in Table 9. The post-hoc Bonferroni correction was applied ( $p < 0.008$ ) rather than the typical  $p < 0.05$  since there were 6 inferential (non-assumption) tests conducted.

**Table 9**

*University and Overall ARTIC-35 Mean Scores*

University group	<i>n</i>	<i>M</i>	<i>SD</i>
3	7	5.33	.57
4	3	4.99	.82
1	30	5.36	.64
2	17	5.25	.60

*Note.*  $N = 57$

***Age and Overall ARTIC-35 Mean Scores***

The analysis of group differences between the variables of “age” and “ARTIC-35 mean scores” met the three assumptions. First, it is assumed that the participants completed this survey independently, and did not seek guidance in filling out the “age” variable nor the 35 ARTIC-35 survey questions. Second, these group differences met the assumption that the scores fell on a normal curve, since the age groups “18-24” ( $p = .425$ ), “25-30” ( $p = .441$ ), “31-40” ( $p = .583$ ), and “41-50” ( $p = .688$ ) had significance above  $p < .05$ , as shown by the Shapiro-Wilk test of normality. Third, Levene’s test of homogeneity found that the variances in the groups of “age” and “ARTIC-35 mean scores” were above  $p < 0.05$  and thus no significant difference between groups,  $F(3, 52) = 0.826, p = .486$ .

A one-way between subjects ANOVA on SPSS Version 26 was used to test whether the difference between the 5 age groups was statistically significant. The age group “50+” could not be calculated due to the low sample size ( $n = 1$ ). With the Bonferroni correction applied to protect against Type 1 error, data analysis found no significant difference between the overall ARTIC-35 mean scores

and four different age groups at the  $p < .008$  level,  $F(4, 52) = 1.141$ ,  $p = .348$ . ARTIC-35 mean scores and standard deviations by age group are shown in Table 10.

**Table 10**

*Age and Overall ARTIC-35 Mean Scores*

Age group	<i>n</i>	<i>M</i>	<i>SD</i>
18-24	33	5.35	.63
25-30	15	5.11	.48
31-40	4	5.33	.57
41-50	4	5.36	.97
Over 50	1	6.34	Not calculated due to low sample size

*Note.*  $N = 57$

***Gender and Overall ARTIC-35 Mean Scores***

This analysis of group differences between “female” and “male” variables met the three assumptions. First, it is assumed that the participants completed this survey independently, and did not seek guidance in filling out the “gender” variable nor the 35 ARTIC-35 questions. Second, these group differences met the assumption that the scores fell on a normal curve, since both female ( $p = .837$ ) and male ( $p = .951$ ) groups had significance above  $p < .05$ , as shown by the Shapiro-Wilk test. Third, Levene’s test of homogeneity found that the variances in the groups of “gender” and “ARTIC-35 mean scores” were above  $p < .05$  and thus no significant difference between groups,  $F(1, 55) = 0.009$ ,  $p = .926$ .

Independent sample-tests on SPSS Version 26 were used to test whether the difference in overall ARTIC-35 mean scores between males and females was statistically significant. With the Bonferroni

correction applied to protect against Type 1 error, statistical analysis found no significant difference between individuals in gender group “female” ( $M = 5.37, SD = .60$ ) and “male” ( $M = 5.04, SD = .63$ ) and the overall ARTIC-35 mean scores at the  $p < .008$  level,  $t(55) = 1.735, p = .088$ . Mean scores and standard deviations by gender are provided in Table 11.

**Table 11**

*Gender and Overall ARTIC-35 Mean Scores*

Gender	<i>n</i>	<i>M</i>	<i>SD</i>
Female	44	5.37	.60
Male	13	5.04	.63

*Note.*  $N = 57$ .

***Race and Overall ARTIC-35 Mean Scores***

This analysis of group differences between the variables of “white,” “Asian,” “Black or African Canadian,” “Hispanic or Latino,” and “other” met the three assumptions. First, it is assumed that the participants completed this survey independently, and did not seek guidance in filling out the “race/ethnicity” variable nor the 35 ARTIC-35 questions. Due to sample size, only the variables of “white” and “Asian” could be selected for the Shapiro-Wilk test of normality. Both the variables of “white” ( $p = .092$ ) and “Asian” ( $p = .596$ ) met the assumption that the scores fell on a normal curve. Third, Levene’s test of homogeneity found that the variances in the groups of “race” and “ARTIC-35 mean scores” were above  $p < 0.05$  and thus no significant difference between groups,  $F(2, 52) = 0.838, p = .438$ .

Since the majority of participants identified as “white” ( $n = 46$ ), the mean scores for each ethnic group will be calculated but not the statistical differences. With the Bonferroni correction of  $p < .008$

applied to protect against Type 1 error, a one-way ANOVA found no significant difference between overall ARTIC-35 mean scores and different ethnicities,  $F(4, 52) = 1.487, p = 0.22$ . Mean scores and standard deviations by ethnicity are provided in Table 12. As the ANOVA did not return a significant a result, no follow-up analyses were conducted.

**Table 12**

*Race and Overall ARTIC-35 Mean Scores*

Race	<i>n</i>	<i>M</i>	<i>SD</i>
Asian	5	5.10	.61
Black or African Canadian	1	4.06	Not calculated due to small sample size
First Nations	0	No data	No data
Hispanic or Latino	1	5.85	Not calculated due to small sample size
Other	4	5.20	1.04
White	46	5.35	.56

*Note.*  $N = 57$ .

### *Familiarity with Childhood Trauma and Overall ARTIC-35 Mean Scores*

This analysis of group differences between participants who were familiar with childhood trauma (“yes”) and those who were not (“no”) met two of the three assumptions. First, it is assumed that the participants completed this survey independently, and did not seek guidance in filling out the “familiarity with childhood trauma” variable nor the 35 ARTIC-35 questions. Second, the group differences of those who answered “yes” ( $p = .515$ ) versus those who answered “no” ( $p = .108$ ) met the assumption that the scores fell on a normal curve, as shown by the Shapiro-Wilk test. However, Levene’s test of homogeneity found that the variances in the groups of “yes” and “no” with familiarity with childhood trauma and “ARTIC-35 mean scores” were below  $p > 0.05$  and therefore there were statistically significant differences between groups,  $F(1, 55) = 4.146, p = .047$ .

Since the assumption of homogeneity of variance was not met, the Mann-Whitney U non-parametric test was conducted on SPSS Version 26 to determine whether there were statistically significant differences between the groups in familiarity with childhood trauma (answering “yes” or “no” on Question 7) and overall ARTIC-35 mean scores. The Mann-Whitney U test was used rather than the Brown-Forsythe test as it was conducted with ordinal data involving two independent samples, and some believe the Brown-Forsythe (1974) test does not have sufficient evidence to support its use as an alternative to ANOVAs, even if the assumption of homogeneity of variance is violated (Sheskin, 2011). With the Bonferroni correction of  $p < .008$  applied to protect against Type 1 error, statistical analysis found that participants, on average, who were familiar with childhood trauma reported higher ARTIC-35 scores (“yes;”  $M = 5.53$ ) than those who were not (“no;”  $M = 5.04$ ). A Mann-Whitney U test indicated that this difference between groups was statistically significant,  $U(30, 27) = 234.50, z = 2.73, p = 0.006$ . Mean scores and standard deviations by familiarity with childhood trauma are provided in Table 13.

**Table 13***Familiarity with Childhood Trauma and Overall ARTIC-35 Mean Scores*

Previous knowledge of childhood trauma	<i>n</i>	<i>M</i>	<i>SD</i>
No	27	5.04	.48
Yes	30	5.53	.64

*Note.*  $N = 57$ .

*Familiarity with TIP/TIC and Overall ARTIC-35 Mean Scores*

The analysis of group differences between those who responded “yes” to familiarity with TIP and those who responded “no,” and overall ARTIC-35 mean scores, met the three assumptions. First, it is assumed that the participants completed this survey independently, and did not seek guidance in filling out the “familiarity with TIP” variable nor the 35 ARTIC-35 questions. Second, the group differences between those who answered “yes” ( $p = .665$ ) and those who answered “no” ( $p = .957$ ) met the assumption that the scores fell on a normal curve, as shown by the Shapiro-Wilk test. Third, Levene’s test of homogeneity found that the variances in the groups of “familiarity with childhood trauma” and “ARTIC-35 mean scores” were above  $p > 0.05$  and, therefore, there were no significant differences between groups,  $F(1, 55) = 0.810, p = .372$ .

Independent samples t-tests on Version 26 of SPSS were conducted to determine whether there were statistically significant differences between the groups in familiarity with TIP (answering “yes” or “no” on Question 9) and overall ARTIC-35 mean scores. With the post-hoc Bonferroni correction of  $p < .008$  applied to protect against Type 1 error, statistical analysis found that on average, those who were familiar with TIP reported higher ARTIC-35 mean scores ( $M = 5.63; SD = .61$ ) than those who were not ( $M = 5.09; SD = .53$ ), revealing a statistically significant difference between groups,  $t(55) = 3.534, p = .001$ . Mean scores and standard deviations by familiarity with TIP are provided in Table 14.

**Table 14***Familiarity with TIP/TIC and Overall ARTIC-35 Mean Scores*

Previous knowledge of TIP/TIC	<i>n</i>	<i>M</i>	<i>SD</i>
No	35	5.09	.53
Yes	22	5.63	.61

*Note. N = 57.***Conclusion**

Of the 57 pre-service teacher participants who completed the ARTIC-35, results showed an overall mean score of  $M = 5.30$ . Being above 5.00 indicates supportive/favourable attitudes towards TIC. Of the 70 pre-service teacher participants who fully entered their demographic survey data on the ARTIC-35, the following results were revealed. With regard to attitudes and familiarity with childhood trauma and TIP, demographic analyses from Part 1 indicated that 54.29% of all participants reported “familiarity with childhood trauma,” 41.43% reported “familiarity with TIP,” and 100% reported “support for TIP.”

To further support the statistical analyses, the researcher used thematic analysis to highlight the themes presented by the open-ended ARTIC scale question answered by 90% of participants who chose to elaborate on, “Do you believe it is important for teachers/pre-service teachers to learn about trauma-informed practice?” Four interconnected themes were developed, including: 1) teachers should understand the underlying/root cause of students’ behaviours in order to improve their teaching practices; 2) knowledge of trauma and TIP could enhance empathic responses to problematic behaviour; 3) knowledge of trauma and TIP could contribute to teachers feeling better prepared to support/help students who exhibit symptoms of trauma; and 4) trauma in the classroom is inevitable and teachers

must have the knowledge and skills to address symptoms of trauma and create a safe learning environment. Overall, most of the participants' responses supported the notion that trauma-informed education/training, empathy, and general knowledge of childhood trauma were significant skills that pre-service and in-service teachers should have in order to create a safe learning environment that allows both students and teachers to thrive.

From the analysis of quantitative measures, the results showed that the variables of age, gender, and race/ethnicity had no statistically significant effect on ARTIC-35 mean scores. Further, statistical analysis found that participants, on average, who were familiar with childhood trauma reported higher ARTIC-35 scores than those who were not, and a Mann-Whitney U test indicated that this difference between groups was statistically significant. Finally, statistical analysis found that, on average, those who were familiar with TIP reported higher ARTIC-35 scores than those who were not, revealing a statistically significant difference between groups.

In the final Discussion and Conclusion chapter, each of the main research questions is discussed with reference to the relevant qualitative and quantitative data from the study. Further, some limitations of the study are outlined, along with ethical considerations relevant to this research. Finally, the researcher includes directions for future research as indicated by findings from the current study.

## Chapter Five: Discussion and Conclusion

The goal of the current study was to determine pre-service teachers' attitudes towards childhood trauma and trauma-informed practice/care, with a particular focus on those factors that may influence these attitudes. This chapter discusses the results of data analyses presented in the previous chapter which demonstrated support of both hypotheses corresponding to the two research questions. First, results of the ARTIC-35 survey and demographic survey that showed pre-service teachers having predominantly supportive attitudes towards TIP are discussed, both with statistical data and qualitative analysis. Second, results regarding those pre-service teacher factors that revealed group differences in ARTIC-35 scores are considered in relation to the second hypothesis which predicted that participants who claimed to be supportive of TIP, reported familiarity with the topics of childhood trauma, and participants who claimed to have familiarity with trauma-informed practices demonstrated more favourable attitudes towards TIC, as shown in their overall ARTIC-35 mean scores. Additionally, the original ARTIC study (2016) and the most recent ARTIC validity study's (2020) mean scores and demographic data are used as an exploratory comparison to the demographic data and ARTIC-35 mean scores gathered in this study, as there currently are no official norms as a reference (Baker et al., 2016, 2020). Furthermore, results of this study are referenced to the literature on childhood trauma and trauma-informed educational practices and the limitations and ethical considerations of this study are examined, along with the applications and implications of this study's findings. Lastly, directions for future research are explored.

### Discussion of Findings Relevant to Research Question #1

There were three hypotheses related to the first research question, all of which were confirmed by the results of this study and will be discussed below. This question asked, what are pre-service teachers' attitudes towards trauma-informed practice? Specifically, are their attitudes predominantly supportive or non-supportive of trauma-informed practice/care? Based on the literature discussed

previously, it was hypothesized that the pre-service teachers would have an average ARTIC-35 score at or above 5.00/7.00, deeming to be supportive/favourable of TIC/TIP. The results from this study's two-part Qualtrics survey demonstrated that the 57 pre-service teacher participants from four different universities across Alberta had predominantly supportive and favourable attitudes towards trauma-informed teaching practices, as shown by their ARTIC-35 mean scores of  $M = 5.30$ .

While there were no hypotheses regarding participants' subscale mean scores, comparisons were made between the mean subscale scores of the 57 pre-service teachers of this study, the 760 original ARTIC 2016 participants (Baker et al., 2016), and the 1395 participants from the ARTIC 2020 study (Baker et al., 2020). The subscale mean scores of this study will also contribute to the ARTIC scale data literature and could be used as comparison data for future studies. Since the 2016 ARTIC study reported their data in terms of full subscale scores (out of 49) and total ARTIC scores (out of 245), those numbers will be reported in Table 15 and this study's mean scores will also be converted on that scale for reference. The analyses of average ARTIC-35 scores revealed that this study's 57 pre-service teachers had a lower average ARTIC-35 score ( $M = 5.30$ ) than the 760 service providers ( $M = 5.95$ ) who participated in the original ARTIC study and the participants in the 2020 study ( $M = 5.42$ ) (Baker et al., 2016, 2020). Separating and comparing the 2020 Education sector participants ( $M = 5.32$ ) to the pre-service teachers ( $M = 5.30$ ) also revealed a lower total mean score for the pre-service teachers, albeit less significantly than the original 2016 participants (Baker et al., 2016, 2020).

**Table 15***ARTIC-35 Scale Mean Score Comparisons*

	Current study	2016 ARTIC-35 participants	2020 ARTIC-35 participants
Scale	* <i>M, SD</i>	** <i>M</i>	*** <i>M, SD</i>
1) Underlying causes of behaviour	5.09, .79 (35.63)	5.63 (39.44)	5.17, .79
2) Responses to problem behaviour	5.31, .81 (37.17)	6.03 (42.22)	5.40, .82
3) On-the-job behaviour	5.46, .64 (38.22)	6.15 (43.03)	5.53, .78
4) Self-efficacy at work	5.24, .74 (36.68)	6.02 (42.11)	5.55, .82
5) Reactions to the work	5.41, .84 (37.87)	5.93 (41.51)	5.44, .81
****ARTIC-35 overall mean score	5.30, .62 (185.57)	5.95 (208.31)	5.42, .66

*Note.* Scores are out of 7 (and out of 49).

\**N* = 57 participants from current study.

\*\* *N* = 760 participants, from Baker et al., 2016. Standard deviation (scores out of 7) not provided.

\*\*\* *N* = 1395 participants, from Baker et al., 2020

\*\*\*\* Total score (out of 245) is in parenthesis.

In terms of individual sub-scales, pre-services teacher participants scored lower on every subscale compared to the original ARTIC study participants (see Table 15; Baker et al., 2016). Similarly, compared to the participants from the 2020 ARTIC validity study (Baker et al.), this study's pre-service teachers' mean scores were also lower on every subscale (see Table 15). Further, when comparing pre-service teachers' scores to the 2020 ARTIC study's (Baker et al.) participants who work in Education ( $n = 888$ ), pre-service teachers' final mean score was slightly lower ( $M = 5.30$  vs.  $M =$

5.32) but the pre-service teachers scored slightly higher on several subscales (see Table 16). These subscales included “responses to problem behaviour” ( $M = 5.31$  vs.  $M = 5.30$ ), “empathy and control” ( $M = 5.46$  vs.  $M = 5.37$ ) and “reactions to the work” ( $M = 5.41$  vs.  $M = 5.33$ ) (Baker et al., 2020).

**Table 16**

*ARTIC-35 Scale Mean Score Comparisons*

	Current study	2020 ARTIC-35 Education participants
Scale	* $M, SD$	** $M, SD$
1. Underlying causes of behaviour	5.09, .79	5.12, .82
2. Responses to problem behaviour	5.31, .81	5.30, .81
3. Empathy and Control (On-the-job behaviour)	5.46, .64	5.37, .77
4. Self-efficacy at work	5.24, .74	5.50, .84
5. Reactions to the work	5.41, .84	5.33, .82
Overall ARTIC-35 mean score	5.30, .62	5.32, .65

*Note.* Scores are out of 7.

\* $N = 57$  participants from current study.

\*\*  $n = 888$  participants, from Baker et al., 2020.

The first subscale, “underlying causes of behaviour,” revealed the lowest average scores of the 5 subscales for all three research groups (Baker et al., 2016, 2020). Since this subscale is highly correlated with higher ARTIC scores, the lack of familiarity and/or training regarding TIC with this study’s participants (“no” = 58.6%) and 2016 ARTIC study’s participants (“no” = 42.6%) confirms previous research stating knowledge is related to more favourable attitudes towards trauma-informed practices (Baker et al., 2016, 2020; Chafouleas et al., 2016; Reker, 2016; Rizzo & Vispoel, 1991; Vanderburg,

2017). The pre-service teachers obtained the lowest score ( $M = 5.09$ ), followed by the 2020 ARTIC participants ( $M = 5.17$ ), and the original 2016 ARTIC participants scored the highest ( $M = 5.63$ ) (Baker et al., 2016, 2020).

Similarly, the second subscale, “responses to problem behaviour,” resulted in pre-service participants with the lowest mean score ( $M = 5.31$ ), with the 2016 participants scoring the highest of the groups ( $M = 6.03$ ), and the 2020 participants obtaining a mean score of  $M = 5.40$  (Baker et al., 2016, 2020). The third subscale, “on-the-job behaviour” or “empathy and control,” as updated in the 2020 ARTIC study, displayed the highest group scores for both the pre-service teachers ( $M = 5.46$ ) and the 2016 participants ( $M = 6.15$ ), with the 2020 group achieving their second highest score ( $M = 5.53$ ). The fourth subscale, “self-efficacy at work,” produced the highest scores for the 2020 ARTIC group ( $M = 5.55$ ), although the 2016 group scored higher ( $M = 6.02$ ), and the pre-service teachers scored the lowest ( $M = 5.24$ ). Finally, the fifth subscale, “reactions to the work,” once again reported the lowest scores with the pre-service teacher group ( $M = 5.41$ ), followed closely with the 2020 group ( $M = 5.44$ ), and the 2016 participants achieving the highest score ( $M = 5.93$ ).

The second hypothesis that was put forward was that the majority ( $n > 50\%$ ) of participants would believe it is important for teachers to learn about TIP, as revealed by the yes/no response in Question 11. Significantly, 100% of participants declared that it was important for teachers/pre-service teachers to learn about TIP, as reported as the “support for TIP” variable. As stated above, due to the unanimous support for learning about TIP, this variable was excluded from further analyses as it confirmed that pre-service teachers who are supportive of TIP have favourable attitudes towards TIC, as measured by their ARTIC-35 mean scores. Interestingly, 100% of participants asserted support for learning about TIP, even though only 41.4% claimed familiarity with the topic of TIC. A small majority of participants (54.3%) claimed to have some knowledge/ familiarity with the topic of childhood trauma,

suggesting that the broader topic of traumatic experiences in childhood is more familiar to pre-service teachers than the skills, behaviours, and interventions related to trauma-informed practices.

The results of the survey in this study confirm previous research findings related to pre-service teacher knowledge and training regarding the topics of childhood trauma and TIP in their teacher education programs. For example, Reker's (2016) survey research found that 47% received no training in their teacher education programs on childhood trauma or on how to support students experiencing traumatic stress; this reflects the results from this study which found 45.7% of pre-service teachers had no familiarity with the topic of childhood trauma nor were 58.6% of participants familiar with TIP. Both of these studies' results mirror Schafer's (2019) study regarding how TIC training impacts educators' knowledge, attitudes, and behaviour, which found that 50% of school educators had no formal educational training or prior knowledge of TIC.

The third hypothesis was created with respect to the open-ended question, "Why do you believe it is important for teachers/pre-service teachers to learn about TIP?" It was hypothesized that participants will mention the certainty of having students whom are presently experiencing or have previously experienced traumatic stress. This prediction was corroborated, as demonstrated in the four qualitative themes. Additionally, the fourth theme, "trauma in the classroom is inevitable; teachers must have the knowledge and skills to address symptoms of trauma and create a safe learning environment," sheds light on the assuredness of having students with previous or current traumatic stress symptoms which may affect their learning and behaviour in the classroom.

For the first main hypothesis, the results of this study show that these pre-service teacher participants from four universities across Alberta had significantly supportive and favourable attitudes towards trauma-informed teaching practices. This finding offers a clear indication that there is currently a promising positive regard for this topic, and a pressing need to enhance content and programming in this field in professional education. It is apparent from these participants that a majority of pre-service teachers are open to additional knowledge and training in this area. Likewise, the results confirming the

second hypothesis show a relative lack of existing knowledge about childhood trauma and trauma-informed practices among the pre-service teacher population, pointing to the need for further work in this area of teacher education. The results for the third hypothesis related to the importance of pre-service teachers learning about trauma-informed practice, and the near certainty that they will encounter in their career many students who have experienced some form of trauma. Therefore, it can be concluded that, although the majority of pre-service teachers do not have familiarity with trauma-informed practices, they believe it is an important topic to learn about for their future careers as teachers, as validated by the themes of their open-ended responses. These findings offer significant support for, and specific guidance regarding, a range of necessary additions and improvements to teacher education programs with respect to trauma-informed care and practice. Further details on the main themes are outlined in the section that follows.

*Theme 1. Teachers should understand the underlying/root cause of students' behaviours in order to improve their teaching practices.*

The pre-service teachers' mean scores in the first ARTIC-35 subscale, "underlying causes of behaviour," which asserts that students' behaviours are adaptive and malleable rather than intentional and fixed, were the lowest of their average scores of the 5 subscales ( $M = 5.09$ ). However, many participants mentioned the importance of understanding potential factors influencing their students' learning and behaviours, especially if it were perceived as having a negative impact. As one participant noted, "coming from a place of this understanding will make people realize behaviours stem from unmet needs. Not 'bad' kids." This sentiment is reiterated in childhood trauma research, which admits that while majority of children experiencing traumatic stress will reveal an array of post-traumatic symptoms, some children may have delayed symptoms or remain asymptomatic for many years (Finkelhor & Berliner, 1995; Hsu 2003; Putnam, 2003; van der Kolk, 2014). As another participant asserted, "trauma manifests in many ways in behaviour and student ability. Knowledge on this topic

gives a broader resource base to help students.” These statements help to reinforce the concept that familiarity with trauma-informed skills aimed at preventing and responding to student triggers and problematic behaviour are a key competency for creating a safe environment for all students, as referenced to in other themes (Chafouleas et al., 2016).

*Theme 2. Knowledge of trauma and TIP could enhance empathic responses to problematic behaviour.*

The second theme, “knowledge of trauma and TIP could enhance empathic responses to problematic behaviour,” reflects trauma research which indicate that employing an empathic response to undesirable or disruptive behaviours rather than viewing the student as inherently bad or oppositional is a predominant theme and goal of trauma-informed educational practices (Baker et al., 2016; Thomas et al., 2019; Wolpow et al., 2009). Similar to the theme of understanding the root causes of students’ behaviours in order to improve teaching practices, knowledge and awareness of the symptoms of traumatic stress could promote empathic responses to perceived problematic behaviour in the classroom. For example, since symptoms of traumatic stress typically emerge in social-emotional-behavioural functioning, they may appear as unprovoked internalizing and/or externalizing symptoms and may vary depending on the students’ age and gender (Hertel & Johnson, 2013; Perfect et al., 2016; Wiebler, 2013). This includes expressions of irritability, impulsivity, inattention, anxiety, sadness, noncompliance, aggression, hyperactivity, withdrawal, somatic complaints, and/or avoidance (Hertel & Johnson, 2013; Perfect et al., 2016; Wiebler, 2013). As one participant stated, “trauma impacts every aspect of a person’s life. When a student is acting in a way that is a response to trauma, teachers need to be able to approach them with understanding and empathy.” Research shows that encouraging teachers to work with school psychologists to gain more access to relevant information regarding the student’s strengths and challenges could be one way to further improve teachers’ empathy towards traumatized students, allowing them to better make adjustments on how they can best support the student (Reker, 2016).

*Theme 3. Knowledge of trauma and TIP could contribute to teachers feeling better prepared to support/help students who exhibit symptoms of trauma.*

The theme of having knowledge of trauma symptoms and trauma-informed practices that can enhance feelings of teacher self-efficacy was demonstrated in several participant responses and confirmed in the literature around teacher preparedness. Meeting the needs of traumatized students can be challenging, especially without adequate knowledge/training and the implementation of evidence-based practices (Baker et al., 2016; Michie et al., 2005). As one participant noted, “I know many many children experience trauma. Sometimes we can’t tell, sometimes we can. If we knew their signs more and how to help them, we could better help our students.” The results of Schafer’s (2019) study found that TIC professional development improved teachers’ feeling of self-efficacy regarding the ability to better help their students, since they became more confident in their knowledge and awareness of symptoms of trauma and strategies for creating a safe space. Additionally, one participant stated, “I would love to learn but not sure how. [TIP] makes teachers more able to support students in their class, specifically those suffering with trauma. [I] would love to learn!” Affirming past research findings (e.g., Smyth, 2017), these responses demonstrate that pre-service teachers have the desire and skillset for integrating a trauma-informed approach in their future classrooms. Accordingly, pre-service teacher education may be a more effective and preventative way of ameliorating a sense of self-efficacy regarding improving educational outcomes for all students.

*Theme 4. Trauma in the classroom is inevitable; teachers must have the knowledge and skills to address symptoms of trauma and create a safe learning environment.*

Participants’ responses emphasizing the importance of feelings of safety in a classroom and school are echoed by descriptions of trauma-sensitive schools in the literature reviewed. For instance, the Trauma Learning Policy Initiative (TLPI) described a trauma-informed school as an environment characterized by a student population who feel safe, welcomed, and supported, and an educational

mission that addresses the school-wide impact of trauma on learning (Cole, O'Brien, Gadd, Ristuccia, Wallace, & Gregory, 2005). Additionally, SAMHSA (2014) included "safety" as a main principle in implementing a trauma-informed approach, defining it as "promoting a sense of physical and psychological safety throughout the organization, including understanding how safety is defined by those served" (as adapted in Chafouleas et al., 2016, p. 147). Fittingly, one participant expressed, "to foster positive relationships and an inclusive school culture, all should feel at ease and safe." Having participants highlight the need for a safe learning environment offers solid support for the importance of this factor in creating positive learning environments for all students, and especially those who have experienced some trauma in their lives.

Blaustein's (2013) research also supports this notion and reinforces the concept of a trauma-sensitive environment being safe and accommodating to the needs of everyone in the community, which includes students, families, and educational staff members. In terms of addressing symptoms of trauma, which research has shown to be related to insecure attachment behaviours, establishing a sense of safety and belonging in the classroom could help teachers provide opportunities for students to improve areas of deficit as well as areas of strength (Brunzell et al., 2015). To that effect, Brunzell et al. declared, "if the classroom has established a strong sense of peer trust and safety, students bring up personal problems or situations for seeking peer advice, and collaborative problem solving can occur through a resilient mindset lens" (p. 9). The findings from participants' open-ended responses reported above affirm these insights, as the pre-service teachers surveyed showed an openness and positive attitude toward creating ideal conditions in their classrooms for all of their students to thrive and learn.

As a note, the researcher was cautious not to state that these themes "emerged" in the data, as it was considered a "passive account of the process of analysis, and it denies the active role the researcher always plays in identifying patterns/themes, selecting which are of interest, and reporting them to the readers" (Braun & Clarke, 2006, p. 7). Ultimately, while it can be difficult to demonstrate rigour, trustworthiness, and replicability with thematic analysis, the researcher attempted to adhere to its basic

concepts by promoting the connection between a trauma-informed theoretical framework and the assumption/hypothesis of favourable pre-service teacher attitudes towards TIP (Nowell et al., 2017). In the case of the themes identified and discussed above, there is a clear and irrefutable link between the tenets of TIP as outlined in the literature reviewed, and the overarching ideas drawn from the responses of these research participants, both on their ARTIC scores and in a majority of their open-ended responses.

### **Discussion of Findings Relevant to Research Question #2**

The second research question asked, amongst the variables of age, gender, racial/ethnic identity, support for TIP, familiarity with childhood trauma, and familiarity with TIP, are there group differences in ARTIC-35 mean scores? If statistical analyses reveal group differences with ARTIC-35 mean scores, are they statistically significant? Responses illustrated the majority of participants were white (84.3%), female (80%), between the ages of 18-24 (57.1%), with familiarity with the topic of childhood trauma (54.3%), no familiarity with trauma-informed practice (58.6%), and fully supported teachers/pre-service teachers learning about TIP (100%).

Based on a review of the literature and scores in the original ARTIC-35 scale (2016), it was hypothesized that familiarity with childhood trauma, familiarity with TIP/TIC, and support for TIP, would be the variables that would have statistically significant group differences with participants' ARTIC-35 mean scores. This hypothesis was mostly confirmed. The variables of "age," "gender," and "race/ethnicity" had no group differences with ARTIC-35 mean scores, while there were statistically significant group differences with ARTIC-35 mean scores among the variables of "familiarity with childhood trauma" and "familiarity with TIP/TIC." The variable of "support for TIP" was not calculated against ARTIC-35 mean scores due to 100% of participants ( $N = 70$ ) answering "yes" for the question, "do you believe it is important for teachers/pre-service teachers to learn about trauma-informed practice?"

The 2016 ARTIC data revealed that no demographic information was statistically significant to

any one subscale; however, “familiarity with TIC” and “own research/knowledge of TIC” was correlated with ARTIC-35 scores (.42 and .34, respectively) (Baker et al., 2016). The 2020 ARTIC study (Baker et al.) reported similar results, as ARTIC-35 scores were correlated with both “familiarity with TIC” (.34) and “knowledge of TIC” (.40). Interestingly, both the 2016 and 2020 ARTIC studies (Baker et al., 2016, 2020) demonstrated no significant correlation between participants’ “formal training” and ARTIC-35 scores, further contributing to a lack of consistent evidence in the literature regarding differences between “familiarity,” “knowledge,” and “training” as exclusive factors in successful TIC implementation.

This study’s survey data confirmed several other research findings, such as Vanderburg’s (2017) ARTIC survey research on 163 teachers, which found that participants familiar with trauma-informed care displayed more favourable attitudes on the ARTIC-35 scale. The mean ARTIC score was  $M = 5.60$ ,  $SD = .85$ , compared to this study’s  $M = 5.30$ ,  $SD = .62$ . However, 40.5% of Vanderburg’s (2017) participants reported “not at all familiar” with TIC, compared to this study’s 58.6% of participants claiming no familiarity with the topic of TIC. Therefore, since the majority of teachers in Vanderburg’s (2017) study claimed to have some familiarity with TIC, their ARTIC mean scores should theoretically have been higher than the participants of this study.

Next, Huffington’s (2020) dissertation on whether professional quality of life was correlated with 38 teachers’ attitudes related to TIC revealed a mean ARTIC score of  $M = 4.08$ ,  $SD = .72$ , which is significantly lower than the pre-service teachers’ results in this study ( $M = 5.30$ ,  $SD = .62$ ). Huffington (2020) also found a negative correlation between professional development hours and ARTIC scores, as well as a positive correlation between perceived professional quality of life and ARTIC scores, albeit neither were statistically significant. The statistically significant group differences between “familiarity with childhood trauma” and “familiarity with TIP/TIC” with ARTIC-35 mean scores in the study reported here conflicted with Huffington’s (2020) findings regarding professional development hours and ARTIC scores. Additionally, Huffington’s qualitative data revealed that the teachers were gaining

knowledge about trauma from their professional development training but still felt unprepared to work with students who have experienced trauma. Nonetheless, Huffington felt that all of the teachers “embodied the dispositions of trauma-informed educators,” despite having an average ARTIC score of  $M = 4.08$ , suggesting professional development had more of an effect on knowledge than dispositions (p. 102). Further research on the content and effectiveness of trauma-informed professional development programs could enhance our understanding of how to successfully educate and train teachers on trauma-informed frameworks.

While Browne-Kealey’s (2019) study on teacher perspectives related to trauma-informed education had a small sample size ( $n = 8$ ), results from the ARTIC scale revealed an overall ARTIC score of  $M = 222.5$ ,  $SD = 7.53$ , translating to  $M = 6.36$ , significantly higher than this study’s overall pre-service teacher ARTIC score of  $M = 185.57$ ,  $SD = .62$ . However, Browne-Kealey (2019) purposely selected teachers who claimed to be familiar with trauma-informed education as well as personal experiences working with traumatized students, which thereby suggests that familiarity/knowledge of TIC is related to more favourable attitudes towards TIC. And while there were no group differences between the age of the pre-service teachers in this study and their ARTIC mean scores, the average age of Browne-Kealey’s (2019) sample was  $M = 44$ ,  $SD = 7.80$ , with an average of  $M = 17$  years ( $SD = 8.69$ ) of full-time teaching experience. This indicates that future research on this topic could examine whether age and life experience have an impact on attitudes related to trauma-informed educational practices, compared to younger teacher populations with minimal teaching experience.

Lastly, Grybush’s (2020) study on 147 rural elementary school teachers revealed an ARTIC mean score of  $M = 5.07$ , slightly lower than the participants of this study ( $M = 5.30$ ). Interestingly, and contrary to most of the literature reviewed and the results of this study, Grybush (2020) found that the variables of “professional development in TIC” and “teacher burnout” were inversely related to ARTIC scores, suggesting the “potentially triggering aspects of trauma-informed care training” may have influenced the teachers’ attitudes and abilities towards effective trauma-informed practices (p. 104). It is

important to note that the personal trauma histories of this teacher population were also measured, and results showed that 31.5% of participants reported four or more adverse childhood experience (ACEs), which was six times higher than the average population (Felitti et al., 1998; for a review, see Grybush, 2020). Consequently, measuring ACEs in the pre-service teacher population would be beneficial in future studies to determine whether burnout-prevention and teacher well-being should be at the forefront of the implementation of trauma-informed educational practices, as it would also complement any correlational research between familiarity with TIC and favourable ARTIC scores.

In analyzing the data from this study and outlining the results and themes in the section above, the researcher was guided by the theoretical framework drawn from the Attachment, Regulation, and Competency Framework (Kinniburgh et al., 2005), and the Ecological Systems Theory developed by Bronfenbrenner (1979). Specifically, the ARC model's focus on the contextual behaviour and symptoms of the child provided a theoretical lens for both the quantitative and qualitative data that highlighted an emphasis on teacher education and training, as well as encouraging intervention at multiple levels, such as the systemic (e.g., school system), familial, and individual level (Blaustein & Kinniburgh, 2010; Kinniburgh et al., 2005). While not all of the components of interventions emerged in these data, an understanding of them was instrumental in considering the various vulnerabilities a traumatized child may experience. Informing the specific context of teacher education, the ARC model emphasizes skill development and strengthening the security of students' caregivers – in this case, educators – to promote resilience and a healthier outcome for all students (Kinniburgh et al., 2005). This framework specifically informed the analysis of data relevant to the implications for pre-service teachers' own perceived shortcomings in knowledge about TIC, and their strong stated desire for additional content and training in this area.

Both frameworks emphasize the complex, multi-layered aspects of understanding and responding to childhood trauma and trauma-informed care, a feature that figured prominently throughout the data set. The ecological systems model developed by Bronfenbrenner (1979) also

acknowledges the complex, multi-dimensional aspects of responding to childhood trauma and TIC. Acknowledging that TIP involves a reciprocal relationship between the child, his/her family, and his/her community is a key insight informing the analysis above. Multiple factors need to be considered when working with all children, but as the open-ended responses indicated, are particularly significant in attending to children exhibiting the various symptoms of traumatic stress. Bronfenbrenner's (1979) theoretical framework advocates a trauma-informed approach through an integrated ecosystem that supports and promotes the health and well-being of students who have experienced trauma. Interpreting and analyzing the data from pre-service teachers emphasizing the systemic nature of the educational system of which they are studying to become a part, highlighted the significant role it can play in improving these students' outcomes.

### **Limitations**

There are several limitations when conducting research of an exploratory nature, as there are no consistent standards to inform practice (Hallingberg et al., 2018). As Hallingberg et al. (2018) affirmed, "at present, there are multiple definitions of exploratory studies, a lack of consensus on a number of key issues, and a paucity of detailed guidance on how to approach the main uncertainties such studies aim to address prior to proceeding to a full evaluation" (p. 10). Further, Reiter (2017) summarized several other challenges when conducting research that is exploratory and inductive, such as one's personal biases, history, ethnic identity, cultural practices, and perception by others; to produce better science and objectivity:

We need to consider our situatedness, or positionality, our limitations, and biases. We also need to consider how we are perceived by those we seek to research and what sort of information might be out of our reach, or maybe even withheld from us, due to who we are and how we are perceived. We need to, finally, include ourselves in our investigation and introduce a strong self-reflexivity into the core of the research process. For inductive and exploratory research, this means, first, to lay open, and question, one's research interest. The research questions we ask and

the initial hypotheses we formulate are not only influenced by who we are; they are constituted by our very being in the world, our culture, context, biography, sexual, gender, and racial backgrounds, and oftentimes, by the sort of funding we receive. (pp. 133-134)

Other limitations within this study are primarily associated with the measure itself. The ARTIC-35 scale is a relatively new instrument, and very few studies have been published research using the ARTIC scale to measure the influence of professional development training on teacher attitudes (Baker et al., 2016). Although the developers of the ARTIC scale have recently published a study validating the structure, internal consistency, construct validity, and reliability of their scale with 1395 new participants (Baker et al. 2020), the developers have also acknowledged several limitations of using ARTIC to measure the level of organizational and/or individual readiness for TIC implementation (Baker et al., 2020; Brown, 2018). These limitations include not having national norms; the original sample (Baker et al., 2016) and most recent sample (Baker et al., 2020) being mostly white, college educated (Baker et al., 2016) and graduate school educated (Baker et al., 2020) women in the mental health/human services (Baker et al., 2016), and more recently, education (Baker et al., 2020); and the lack of evidence correlating high ARTIC scores with positive staff and system-level outcomes (Brown, 2018). Moreover, similar to the original ARTIC sample, another limitation is the reliance on self-report responses from those who were already interested in the field of trauma and motivated to participate in the study (Baker et al., 2020).

As previously indicated, the demographic factor of “familiarity” with childhood trauma and/or TIP, as deemed by participants self-reporting they have or have not acquired knowledge, training, and/or formal education regarding childhood trauma and/or TIP, does not provide an evidence-based measure of what is considered “familiar” with these concepts. A “quiz-like measure” that briefly evaluated the participants’ knowledge of trauma and TIP regarding foundational concepts provided in recognized online trauma resources (e.g., SAMHSA, NCTSN) could be one way of establishing an empirically driven measure of the factors of “knowledge” or “familiarity” beyond self-reporting (Baker et al., 2020, p. 5).

Thematic analyses can be challenging in qualitative research since many studies fail to provide a detailed description of their analytical procedures (Roberts et al., 2019). As Roberts et al. (2019) found, “this makes it difficult for a novice researcher to effectively mirror analysis strategies and processes and for experienced researchers to fully understand the rigour of the study” (pp. 1-2). Further, due to the quantity of qualitative response data, the concept of trustworthiness in terms of validity of findings informing clinical practice could not be achieved but is suggested as a goal of future research (Roberts et al., 2019).

### **Ethical Considerations**

Certain risks with online survey use exist. These include the possibility that online survey providers may allow third parties to track survey participants, online survey providers control the terms of service, and survey data may be stored outside of Canada. Analyzing Qualtrics’ terms of use and relaying this information to participants could ensure that participants fully understood the risks of the study. Participants may have felt obligated to participate; however, there was no financial incentive, educational, nor social pressure, as survey participation was completely confidential. As noted in the ethics application, any findings of interest involving Indigenous identity or membership would have been handled in a culturally sensitive manner, in line with OCAP principles. In this study there were no participants who self-identified as Indigenous, so this was not required nor undertaken.

Given the subject matter of childhood trauma and trauma-informed practice, the questions may have been sensitive for those who have experienced personal or family trauma. One question in the ARTIC survey specifically used the word “trauma” in the question (e.g., “I believe that focusing on developing healthy, healing relationships is the best approach when working with people with trauma histories” OR “I believe that rules and consequences are the best approach when working with people with trauma histories”), which may have also been sensitive in nature to participants with histories of traumatic experiences.

Finally, no identifiable information was retained, as this study did not give an option for follow-

up questions; however, a slight possibility might exist for all combined demographic data to identify one person or post-secondary program. To lessen this risk, all categories were collapsed and results were not reported in a way that revealed all demographic data of one participant correlated with survey answers. Since there was no option for participants to provide their name or email address, the researcher did not know who participated, thereby making it extremely difficult to link survey results with a specific person. Once the survey was submitted, participants were not able to withdraw their data, as it was anonymous, and anonymized further with collapsed categories.

### **Applications and Implications**

The results of the quantitative and qualitative data analyses of this study provide support for the argument that knowledge/familiarity with the topics of childhood trauma and trauma-informed practices in pre-service teacher education could improve future teachers' awareness and skills regarding student symptoms of traumatic stress and effective pedagogical responses. Additionally, the pre-service teachers in this study had an overwhelmingly positive response towards the importance of learning about childhood trauma and trauma-informed educational approaches, further emphasizing that the need and favourable attitudes are already present in this population, despite large portions of the group having limited or no familiarity with those topics. Interestingly, not one participant mentioned the involvement of psychologists in the classroom as a support, resource, or occupation responsible for addressing the needs of students experiencing traumatic stress. This may suggest that pre-service teachers feel it is now their occupational and/or moral obligation to address student trauma along with teaching the curriculum, although previous research has suggested that teachers still believe that psychologists are more accountable for providing the behavioural and emotional supports for students undergoing traumatic stress (Reker, 2016). The literature surrounding TIP in schools has highlighted the importance of increased systems-level stakeholder awareness, knowledge, support, and collaboration regarding the effects of traumatic experiences on learning and behaviour, including the role of school psychologists in contributing to the implementation of TIPs in the classroom (Record-Lemon & Buchanan, 2017).

Survey results in this study found that teachers felt they will inevitably encounter traumatized students and are extremely willing to learn about trauma-informed practices; however, the majority were unfamiliar with the topic of TIP, which resulted in statistically significant group differences in favourable attitudes towards TIC. Therefore, these results and previous related research emphasize the importance of teachers and school psychologists working as a team to address the needs of students with histories of trauma, as it can be a daunting and demanding task for teachers alone (Grybush, 2020; Reker, 2016). This study's results contribute to the literature on childhood trauma and educational research, which has found that pre-service teachers still do not have the familiarity/knowledge of topics of childhood trauma and trauma-informed practices and may, as a result, be more reliant on the expertise of the school psychologists with whom they may or may not have regular interactions. Therefore, these results imply that school psychology education programs should provide adequate theoretical and practical training in trauma-informed educational practices, as school psychologists will most likely encounter both students experiencing traumatic stress and teachers who have a desire to learn more about TIP to better meet the needs of all their students.

However, previous research has revealed several teacher challenges when working with school psychologists, which should be taken into account in relation to this study's findings. For example, many teachers have expressed concerns with the insufficient time school psychologists have available to provide trauma-informed supports (Reker, 2016). Further, teachers expressed frustration with their limited access to confidential student records, along with the school psychologists' over-extended occupational responsibilities which prevented them from providing teachers with sufficient academic, emotional, or behavioral support necessary to meet their students' needs (Browne-Kealey, 2019; Reker, 2016). That being acknowledged, the National Association of School Psychologists (NASP, 2016) recommended a shift in policy and practice five years ago that included multitiered systems of support, more efforts to create safe and supportive learning environments, integrating social-emotional learning into curriculum, and adopting positive discipline and restorative justice practices. Altogether, there is an

increased awareness of the prevalence of student trauma and the need to address inadequacies in education and practice for both teachers and school psychologists.

### **Directions for Future Research**

Based on the findings of this research, further study on what pre-service teachers know about childhood trauma and TIP is warranted, as it could inform changes to teacher education curriculum to better reflect the diverse needs of students moving forward. Moreover, this knowledge could inform school psychologists about new teachers' strengths and limitations which may require additional guidance and multidisciplinary support. Further, these findings add to the literature regarding the call for post-secondary psychology programs to prioritize the topics of childhood trauma and TIP in their curriculum and training, seeing that this profession will undoubtedly encounter children with traumatic stress and educational challenges (Cook et al., 2019). Since trauma research is increasingly focusing on the challenges of successfully implementing trauma-informed educational approaches in schools, future studies regarding the roles of school psychologists in preventing or managing teacher compassion fatigue could help limit the obstacles new and seasoned teachers courageously face with TIP (Figley, 1995; Koenig et al., 2018; Wolpow et al., 2009). It is important to note that the topic of compassion fatigue and its related concepts (e.g., burnout, secondary traumatic stress, vicarious trauma) are a significant part of the successful implementation of TIP in schools, and the researcher argues that teacher self-care and an adequate educational support network are necessary pre-requisite for effective trauma-informed endeavors. Therefore, any future research should study and address the emotional risks and potential costs of pre-service and in-service teachers employing a trauma-informed lens, as these self-care tools are essential for healthy teachers and create and maintain healthy schools.

The researcher also recommends using the term "trauma-informed educational practices" (see Carello & Butler, 2015) versus TIC or TIP for future studies geared towards the Education system or educational practices, as the origins of TIC are argued to have begun in the medical and military fields over a century ago (for a review, see Center for Substance Abuse Treatment, 2014). It was not until the

APA's Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III) publication in 1980 that stated PTSD as a diagnosis in response to post-traumatic stress symptoms of Vietnam War veterans that specific treatments for psychological trauma symptoms became acknowledged and widespread (Center for Substance Abuse Treatment, 2014; van der Kolk, 2000). Therefore, using more specific terms related to Education will help ensure that any measures of "familiarity with TIP/TIC" and/or "support of TIP/TIC" are in direct reference to the educational practices that have arisen from medical models of TIC.

There are many opportunities for further qualitative research and statistical research conducted with the ARTIC scale and demographic variables. For instance, further testing should be done on the variables "familiarity with childhood trauma" and "familiarity with TIC" as a covariate to supportive attitudes related to TIP. Future studies could analyze if familiarity with childhood trauma and/or TIP influence the prediction of age, gender, and/or race on ARTIC-35 scores (or supportive attitudes). For example, if the variables of a particular gender of a particular ethnic minority background are associated with lower ARTIC-35 scores, a future study that introduced the variable "familiarity with TIP" as a covariate could reveal if it mitigated the effects of gender and race on ARTIC-35 scores. These data could then inform future research and practice relating to the increased awareness of the diverse needs of both teachers and students when learning about and implementing TIP. Regarding future qualitative analyses, the researcher recommends more options for participants to express and elaborate on their survey results, such as through interviews or more open-ended survey questions. The combination of rich qualitative and quantitative data would enhance the findings and provide more opportunities for nuances and discoveries that shorter surveys would not be able to provide. Overall, the positive and favourable attitudes of pre-service teachers towards learning about TIP generates a solid foundation for continued improvements to teacher education programs and related research on the needs of both students and teachers faced with traumatic experiences.

## Summary and Conclusion

The study undertaken and reported above is admittedly exploratory rather than comprehensive and conclusive. The field of TIP is fairly new and growing and, as reported earlier, is characterized by multiple, sometimes conflicting definitions and understandings of TIP and its related topics. It is significant that the focus here was on the understandings reported by pre-service teachers related to the relevance of this topic to their professional practice, pointing to the need for additional interventions at this stage in their education and professional training. Much more could be done to increase the knowledge base of pre-service teachers and other pre-professionals, such as school psychologists, and the findings herein point to some promising avenues for implementing such additional curricula for teacher education programs.

A strong positive finding is the receptivity to this set of topics shown by the research participants, and a general valuing of this topic as part of their becoming stronger and more capable educators for all of their students. As noted in the section above, there is much more to research in this field, but this initial study can serve as encouragement for the undertaking of further training, curriculum, and program development in this area. The positive stance shown toward learning more about TIP is certainly a call for the educational psychology profession to bolster its efforts in this area and take a crucial role in guiding the most relevant information and training for teachers at every level in their careers. As revealed in the findings presented above, there is a strong appetite shown by pre-service teachers for TIP, and they indicate that they desire to learn the knowledge necessary to address the needs of these children. The beneficiaries of further work in this area will inevitably be the future students of these teachers – educators who will be better prepared to respond to the academic, behavioural, and emotional needs of their many future students who have experienced trauma.

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## Appendix A: Recruitment Email

Hello \_\_\_\_\_,

My name is Nina Howorun and I am currently a Master's student at the University of Calgary, Werklund School of Education, completing my M.Sc. degree in the School and Applied Child Psychology program.

I am writing to ask permission to recruit students in your Bachelor of Education program to participate in a short, empirically tested online Qualtrics survey on their perceived attitudes related to several concepts of trauma-informed practice/care. *The University of Calgary Conjoint Faculties Research Ethics Board has approved this study (REB16-1712).*

For my Master's research, I am studying pre-service teachers' attitudes relevant to trauma-informed practice. This preliminary study will survey the participants' attitudes with respect to 5 components of trauma-informed practice/care: beliefs regarding the underlying causes of a student's behaviour, responses to difficult student behaviour, on-the-job behaviour, beliefs of self-efficacy, and reactions to the work. The survey is called Attitudes Related to Trauma-Informed Care (ARTIC), and was created by researchers at the Traumatic Stress Institute. However, the questions do not mention or assess one's knowledge of the potential causes of trauma, as this could cause discomfort for some participants.

I will also be gathering demographic information, such as age, gender, race/ethnicity, and program specialization, however this survey will remain anonymous and confidential. Further, no one will know whether or not your students have chosen to participate in this research, and their decision to participate will have no effect on their standing in their Education Program.

With your permission and assistance, I would like to have my recruitment/consent form and survey link sent to your current B.Ed. students for their completion. Ideally, this will be done through a third-party intermediary whom has access to the B.Ed. program Listserv. There is no need for students to sign or respond to the recruitment email, as the act of submitting the online survey signifies consent.

Please let me know if you would be willing to permit this research and refer me to a staff member who could send out a brief email to your Listserv.

I look forward to hearing from you soon!

Thank you,

Nina Howorun, B.Sc, B.Ed.  
M.Sc. student, Werklund School of Education

## Appendix B: Consent Form




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### Name of Researcher, Faculty, Department, & Email:

Nina Howorun, School and Applied Child Psychology, Werklund School of Education,  
[XXXXX](#)

### Supervisor:

Dr. Salvatore Mendaglio, Professor, Werklund School of Education,  
[XXXXX](#)

### Title of Project:

Pre-service Teacher Attitudes Relevant to Trauma-Informed Practice

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This consent form, a copy of which has been given to you, is only part of the process of informed consent. If you want more details about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

*The University of Calgary Conjoint Faculties Research Ethics Board has approved this study (REB16-1712).*

### Purpose of the Study

The purpose of this preliminary study is to investigate the attitudes of pre-service teachers regarding both perceived symptoms of childhood trauma and evidence-based concepts of trauma-informed practice. The goal of this study is to gather data on pre-service teachers' attitudes towards the concepts and educational situations involved in trauma-informed practice/care (TIC). The results will address gaps in the research literature around the attitudes that pre-service teachers hold, and contribute to an increased understanding of what can be done at the educational level to ensure teachers are best equipped to identify and address the short and long-term effects of childhood traumatic stress on their students' learning, behaviour, and development.

### What Will I Be Asked To Do?

As a participant of this study you will be asked to complete an online Qualtrics survey and to provide some demographic information. The survey called the Attitudes Related to Trauma-Informed Care (ARTIC) consists of 35 questions on a 7-point scale. For example, one question asks you to respond, on a scale of 1-7, what you believe the underlying causes of a students' behaviour are ("I believe that students' learning and behavior problems are rooted in their behavioral or mental health <sup>SEP</sup>condition OR

I believe that students' learning and behavior problems are rooted in their history of difficult life events"). This survey will take approximately 15-30 minutes to complete. The demographic information you will be asked to provide include age, gender, race/ethnicity, University of enrolment, and program specialization.

Please note that participation is completely voluntary and you have the right to refuse to participate, or to withdraw from the study at any time before you submit the survey without any form of penalty. You are also entitled to participate in only a part or select parts of the study, and you can decline to answer any and all questions included in the survey.

### **What Type of Personal Information Will Be Collected**

Should you agree to participate, you will be asked to provide your gender, age, name of University, race/ethnicity, year of program, and program specialization.

### **Are there Risks or Benefits if I Participate?**

The benefit to you personally is indirect through the sense of satisfaction you may experience in contributing to the larger scientific literature. Additionally, the information you provide through your survey responses can help inform how to improve the teacher education program, teacher-training practices, quality of teaching in schools, and teacher well-being.

Given the potentially sensitive nature of the topics addressed in this study, potential risks of participating in this study include minor feelings of psychological or emotional discomfort and psychological or mental fatigue. If this occurs, we strongly recommend you contact Alberta Health Services at 1-877-303-2642 or your University's Wellness Centre.

### **What Happens to the Information I Provide?**

Participation is completely voluntary, anonymous and confidential. You are free to discontinue participation at any time during the study, and free not to complete or submit the survey. Once you have submitted the survey, you will not be able to withdraw your participation. No one except the primary researchers of this study will be allowed to see any of the answers you provide on the survey. There are no names on the survey. Only group information will be summarized for any presentation or publication of results. All survey data is kept in password protected computers only and access is limited to the primary researchers and research assistants involved in this study. This data will be stored for 5 years and only group data will be used for publications (e.g., conference presentations, peer-reviewed journal articles) both now and in the future.

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***Your submission of the survey via Qualtrics to the Researcher, Nina Howorun, indicates that 1) you understand to your satisfaction the information provided to you about your participation in this research project, and 2) you agree to participate in the research project.***

In no way does this waive your legal rights nor release the investigators, sponsors, or involved institutions from their legal and professional responsibilities. You are free to discontinue your participation in this research project at any time until the submission of the survey. You should feel free to ask for clarification or new information throughout your participation.

### **Questions/Concerns**

If you have any further questions or want clarification regarding this research and/or your participation, please contact the administrator who provided you with the Qualtrics survey link and consent form. If you choose to reveal your identity as a potential participant of this research, you may contact one of the following investigators:

Nina Howorun, MSc student  
School & Applied Child Psychology, Werklund School of Education  
[xxxxx](#)

Salvatore Mendaglio, Ph.D.  
Werklund School of Education  
[xxxxx](#)

If you have any concerns about the way you have been treated as a participant, please contact the Research Ethics Analyst, Research Services, University of Calgary at 403.220.6289 or 403.220.8640; e-mail [xxxxx](#)

A copy of this consent form has been given to you to keep for your records and reference. The investigator has kept a copy of the consent form.

## Appendix C: Email Scripts

### Email to Third-Party Survey Distributor:

Hello \_\_\_\_\_,

My name is Nina Howorun and I am currently a Master's student at the University of Calgary, Werklund School of Education, completing my M.Sc. degree in the School and Applied Child Psychology program.

To complete my Master's thesis, I was informed by \_\_\_\_\_ that you would be able to help me distribute my online Qualtrics survey link to the Bachelor of Education program students. It is a short, anonymous, and empirically-tested survey to measure pre-service teachers' perceived attitudes related to several concepts of trauma-informed practice/care. The survey will be available for completion online until March 1<sup>st</sup>, 2020.

*The University of Calgary Conjoint Faculties Research Ethics Board has approved this study (REB16-1712).*

Would you be able to forward the following message and attachment to all of your currently enrolled students in the Bachelor of Education program?

If you have any questions, concerns, or another contact that may be more appropriate for this request, please let me or the Principal Investigator, Dr. Sal Mendaglio, know.

Thank you,

Nina Howorun, MSc student  
School & Applied Child Psychology, Werklund School of Education  
[XXXXX](#)

Salvatore Mendaglio, Ph.D.  
Werklund School of Education  
[XXXXX](#)

### Email introducing survey to participants:

Hello!

My name is Nina Howorun and I am currently a Master's student in Educational Psychology at the University of Calgary, completing my thesis research in the area of childhood trauma and trauma-informed practice/care.

I am hoping to recruit as many students as possible in the Bachelor of Education programs around Alberta to complete a brief online Qualtrics survey on your perceived attitudes related to trauma-informed practice/care in schools.

In short, this preliminary study will assess your attitudes with respect to 5 components of trauma-informed practice/care: beliefs regarding the underlying causes of a student's behaviour, responses to difficult student behaviour, on-the-job behaviour, beliefs of self-efficacy, and reactions to the work. The questions do not mention or assess your knowledge of the potential causes of trauma, but rather how you respond (or your anticipated responses) to everyday circumstances in your classrooms and schools.

This survey will take approximately 15-30 minutes to complete. The survey responses are anonymous, although you will be asked to provide demographic information at the beginning of the survey, such as age, gender, race/ethnicity, University of enrolment, and program specialization.

Please note that participation is completely voluntary and you have the right to refuse to participate, or to withdraw from the study at any time before you submit the survey without any form of penalty. You are also entitled to participate in only a part or select parts of the study, and you can decline to answer any and all questions included in the survey. Further, no one at the your institution will know whether or not you have chosen to participate in this research, and your decision to participate will have no effect on your standing in your Education Program.

**Please see the attached Consent Form for all details regarding this study.** *The University of Calgary Conjoint Faculties Research Ethics Board has approved this study (REB16-1712).*

**To participate in this study, please go to:**

[XXXXX](#)

*Thank you in advance for your participation in this study!*

Nina Howorun, MSc student  
School & Applied Child Psychology, Werklund School of Education

[XXXXX](#)

Principal Investigator: Salvatore Mendaglio, Ph.D.  
Werklund School of Education

[XXXXX](#)

## Appendix D: Part 1 Demographic Questionnaire

### Qualtrics Survey Part 1:

#### Pre-service Teacher Attitudes Relevant to Trauma-Informed Practice

*This survey consists of two parts, and will take approximately 15-30 minutes to complete. Please note that participation is completely voluntary and you have the right to refuse to participate, or to withdraw from the study at any time before you submit the survey without any form of penalty. You are also entitled to participate in only a part or select parts of the study, and you can decline to answer any and all questions included in the survey.*

***Submission of the survey indicates that you understand to your satisfaction the information provided to you about your participation in this research project, and that you consent to participate in the research project.***

#### 1. Name of University:

- University 1
- University 2
- University 3
- University 4

#### 2. Age:

- 18-24
- 25-30
- 31-40
- 41-50
- Over 50

#### 3. Gender:

- Female
- Male
- Prefer not to disclose
- You don't have an option that applies to me. I identify as \_\_\_\_\_.

#### 4. Race/Ethnicity:

- Asian
- Black or African Canadian
- Biracial or multiracial
- First Nations

- Hispanic or Latino of any race
- White
- Other \_\_\_\_\_

5. Current Bachelor of Education Program Specialization (e.g., Early Childhood Education):

\_\_\_\_\_

6. Year of Program

- 1
- 2
- 3
- 4 or more

7. Do you have any previous knowledge, training, or formal education regarding the causes, symptoms, and long-term effects of childhood trauma?

- Yes
- No

8. Please specify where you acquired this knowledge (select all that apply):

- Formal Education (University/College courses)
- Independent Interest/Study
- Personal Experience
- Work experience
- No previous knowledge
- Other (please specify): \_\_\_\_\_

9. Do you have any previous knowledge, training, or formal education regarding trauma informed practice/care?

- Yes
- No

10. Please specify where you acquired this knowledge (select all that apply):

- Formal Education
- Independent Interest/Study
- Personal Experience
- Work Experience
- No previous knowledge
- Other (please specify): \_\_\_\_\_

11. Do you believe it is important and/or useful for teachers and pre-service teachers to learn about childhood trauma and trauma-informed practice?

- Yes
- No

12. Please explain your answer from Question 11:

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13. Have you completed, or are in the process of completing, a teaching practicum?

- Yes
- No

## Appendix E: Part 2 ARTIC-35 Scale

### Start of Block: Part 2: ARTIC-35 Education Survey

For each item, select the circle along the dimension between the TWO options that best represents your personal belief.

You may have to SCROLL TO THE RIGHT to see both statements.

**I believe that...**

	1	2	3	4	5	6	7
--	---	---	---	---	---	---	---

---

	1	2	3	4	5	6	7	
1. Students' learning and behaviour problems are rooted in their behavioural or mental health condition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Students' learning and behaviour problems are rooted in their history of difficult life events.
2. Focusing on developing healthy, healing relationships is the best approach when working with people with trauma histories.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Rules and consequences are the best approach when working with people with trauma histories.
3. Being very upset is normal for many of the students I serve.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	It reflects badly on me if my students are very upset.
4. I don't have what it takes to help my students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I have what it takes to help my students.

<p>5. It's best not to tell others if I have strong feelings about the work because they will think I am not cut out for this job.</p>	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>	<p>It's best if I talk with others about my strong feelings about the work so I don't have to hold it alone.</p>
<p>6. The students were raised this way, so there's not much I can do about it now.</p>	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>	<p>The students were raised this way, so they don't yet know how to do what I'm asking them to do.</p>
<p>7. Students need to experience real life consequences in order to function in the real world.</p>	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>	<p>Students need to experience healing relationships in order to function in the real world.</p>

Page Break

2 I believe that...

1      2      3      4      5      6      7

	1	2	3	4	5	6	7	
8. If students say or do disrespectful things to me, it makes me look like a fool in front of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	If students say or do disrespectful things to me, it doesn't reflect badly on me.
9. I have the skills to help my students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I do not have the skills to help my students.
10. The best way to deal with feeling burnt out at work is to seek support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	The best way to deal with feeling burnt out at work is not to dwell on it and it will pass.
11. Many students just don't want to change or learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	All students want to change or learn.
12. Students often are not yet able or ready to take responsibility for their actions. They need to be treated flexibly and as individuals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Students need to be held accountable for their actions.

13. I realize that students may not be able to apologize to me after they act out.

If students don't apologize to me after they act out, I look like a fool in front of others.

14. Each day is uniquely stressful in this job.

Each day is new and interesting in this job.

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Page Break

3 I believe that...

	1	2	3	4	5	6	7
--	---	---	---	---	---	---	---

	1	2	3	4	5	6	7	
15. The fact that I'm impacted by my work means that I care.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Sometimes I think I'm too sensitive to do this kind of work.
16. Students have had to learn how to trick or mislead others to get their needs met.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Students are manipulative so you need to always question what they say.
17. Helping a student feel safe and cared about is the best way to eliminate undesirable behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Administering punitive consequences is the best way to eliminate undesirable behaviors.
18. When I make mistakes with students, it is best to move on and pretend it didn't happen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	When I make mistakes with students, it is best to own up to my mistakes.

19. The ups and downs are part of the work so I don't take it personally.

The unpredictability and intensity of work makes me think I'm not fit for this job.

20. The most effective helpers find ways to toughen up- to screen out the pain- and not care so much about the work.

The most effective helpers allow themselves to be affected by the work- to feel and manage the pain- and to keep caring about the work.

21. Students could act better if they really wanted to.

Students are doing the best they can with the skills they have.

Page Break

4 I believe that...

1      2      3      4      5      6      7

	1	2	3	4	5	6	7	
22. It's best to treat students with respect and kindness from the start so they know I care.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	It's best to be very strict at first so students learn they can't take advantage of me.
23. Healthy relationships with students are the way to good student outcomes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	People will think I have poor boundaries if I build relationships with my students.
24. I feel able to do my best each day to help my students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I'm just not up to helping my students anymore.
25. It is because I am good at my job that the work is affecting me so much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	If I were better at my job, the work wouldn't affect me so much.
26. Students do the right thing one day but not the next. This shows that they are doing the best they can at any particular time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Students do the right thing one day but not the next. This shows that they could control their behavior if they really wanted to.

27. When managing a crisis, enforcement of rules is the most important thing.

When managing a crisis, flexibility is the most important thing.

28. If I don't control students' behavior, bad things will happen to property.

As long as everyone is safe, it is ok for students to become really upset, even if they cause some property damage.

Page Break

5 I believe that...

	1	2	3	4	5	6	7
--	---	---	---	---	---	---	---

	1	2	3	4	5	6	7	
29. I dread going to my job because it's just too hard and intense.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Even when my job is hard and intense, I know it's part of the work and it's ok.
30. How I am doing personally is unrelated to whether I can help my students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I have to take care of myself personally in order to take care of my students.
31. If things aren't going well, it is because the students are not doing what they need to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	If things aren't going well, it is because I need to shift what I'm doing.
32. I am most effective as a helper when I focus on a student's strengths.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I am most effective as a helper when I focus on a student's problem behaviors.

33. Being upset doesn't mean that students will hurt others.

If I don't control students' behavior, other students will get hurt.

34. If I told my colleagues how hard my job is, they would support me.

If I told my colleagues how hard my job is, they would think I wasn't cut out for the job.

35. When I feel myself "taking my work home," it's best to bring it up with my colleagues and/or supervisor(s).

When I feel myself "taking my work home," it's best to keep it to myself.

**Appendix F: Permission for ARTIC Scale**

Re: ARTIC scale for student research

XXXXXX <xxxxxx>

Fri 5/24/2019 9:28 AM

To: Nina Howorun <xxxxxx>

Nina,

Thank you for your update and question.

Yes, you still have permission to use the ARTIC-35 for your unfunded student research project, assuming the nature and scope of the study is the same/similar as what you proposed in your original request for reduced/free waiver.

As for the Online ARTIC Scale, this is only by purchase and we are not offering reduced fee/free access at this time. Additionally, the online version does all of the data analysis and reporting, which is generally not what graduate student researchers are seeking since they usually required to do their own data analysis.

Is this helpful?

Best wishes with your research,

XXXXXX

Traumatic Stress Institute of Klingberg Family Centers