

Exploration of Implementation Variables Impacting Trauma-Informed Practices in Schools: A

Narrative Review

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BACKGROUND

It has been two decades since Felitti and colleagues (1998) published their comprehensive and seminal research explaining the significance and impact of “adverse childhood experiences” (ACEs) on adult health (p. 245). The research presented evidence that childhood complex trauma may lead to disrupted neurodevelopment that in turn leads to unproductive patterns of behaviour, mental health issues, and eventually, poorer life health outcomes. Subsequent research has further provided the context and conditions under which ACEs or childhood trauma are more likely to occur. For instance, authors Copeland et al. (2018), Ford (2015), and Gelkopf (2018) highlight the areas of social injustice such as poverty, race, gender, sexual orientation, power, and disability, that increase a child’s vulnerability to experiencing traumatic events as well as the long-lasting effects of trauma. With a clearer understanding of the conditions under which complex trauma may manifest, and the contexts in which it occurs (Copeland et al., 2018), institutions such as education need to remain cognisant of their part in contributing to, facilitating, or perpetrating further trauma and injustice (Alvarez et al., 2016; Dorling, 2015; Watts & Hodgeson, 2020). Conversely, it is important to acknowledge a school’s capacity to combat and prevent further trauma. Nascent research provides knowledge and strategies that inform practice and intervention in addition to planning for prevention and trauma recovery (De Bellis & Zisk, 2014; Gregorowski & Seedat, 2013; Evans & Coccoma, 2014; Kezelman & Stavropoulos, 2012).

Current literature focuses on how, through early intervention, many of the effects of complex trauma can be ameliorated or at least managed (Delima & Vimpain, 2011; Gregorowski & Seedat, 2013; Kezelman & Stavropoulos, 2012). These authors posit that by using evidence-based practices in schools and classrooms, including strong relationship development (Kezelman & Stavropoulos, 2012), positive, short, and long-term outcomes can be achieved for both children and their communities (Howard, 2018a). There is strong support for specific school staff training in trauma and trauma-informed practices (Frauenholtz et al., 2017; Graham et al., 2011).

However, much of the literature presumes that once educated about complex trauma, school staff can implement the trauma-informed practice in their classrooms and schools. It is currently unclear what factors or variables help or hinder this process of movement from knowledge acquisition to practice change and the successful implementation of trauma-informed practice (TIP). This review will seek to create and provide readers with a list of these common factors that may be addressed to create or facilitate practice change.

This review looks at data and literature that has a strong teacher focus. Teachers are the front-line workers in the school context and make up the largest percentage of staff within the school.

However, the information provided in this article is designed to be used by a range of professionals, including; teachers, school leaders, school social workers, school psychologists, and support staff. These results can be used to assist individuals to reflect on their own personal practice or alternatively, used to support colleagues or whole schools in their practice change journey.

LITERATURE REVIEW

Trauma

There is a heightened national and international awareness and focus on the causes, assessment, and treatment of complex, developmental, and interpersonal traumas (Olf, 2018), and its long-lasting impact on children and adults (Jaycox et al., 2006). Rice and Groves (2005) define trauma

as “an exceptional experience in which powerful and dangerous events overwhelm a person’s capacity to cope” (p.3). Bruce Perry (2016), who is considered an international trauma expert, defines trauma as “an experience, or pattern of experiences, that impairs the proper functioning of the person’s stress-response system, making it more reactive or sensitive” (p. 5). Although there is some debate about the specific definition for the term ‘trauma’, there is increasing consensus that there are three different types of trauma as described below in Table 1.

<Insert appendix 1: Table 1. Trauma definitions>

It is important to note that when understanding the types of trauma, simple trauma is often thought of as a 'socially acceptable trauma' when people have experienced a fire, death of a loved one, or hurricane, there is sympathy, empathy, and support afforded to them. Conversely, complex and interpersonal trauma is often secretive, hidden, and frequently undetected by authorities, and as such students may go unsupported (Alvarez et al., 2016). By utilising TIP as a teacher’s usual practice, they may be able to provide all students access to what they need. This enables students who may be otherwise disadvantaged by the schooling system as a result of their experiences an increased opportunity at an equitable educational experience. It is hoped that utilising trauma-informed practice in the classroom goes some way to addressing and combating inequalities and social injustices that are inherent in educational systems (Alvarez et al., 2016; Dorling, 2015).

Both complex and developmental traumas “encompass not only harmful acts of emotional, physical or sexual abuse to a child, but also familial and socio-environmental influences such as parental drug use, poverty, and neighbourhood or domestic violence” (Balistreri, & Alvira-Hammond, 2016 p. 72). To clarify, developmental trauma can be referred to as complex trauma but not all complex trauma is developmental. Mihalopoulos’ et al., (2011) literature review regarding the ‘Economic Analysis of Prevention in Mental Health Programs’, identified that

childhood mental health conditions, such as complex trauma, have both high disease and economic burden on the community, however, it is hard to calculate the exact extent of that burden due to several compounding variables. Perfect et al. (2016) explain that prevalence data, accurately capturing the number of children who are currently experiencing complex trauma, becomes difficult to pinpoint when there are gaps in data as a result of unsubstantiated reports or under-reporting, non-standardised data collection methods, and differing definitions (Doidge, 2016; Perfect et al., 2016; Finkelhor et al., 2009). With these limitations to the prevalence data in mind, The United States Centers for Disease Control (CDC) utilised the ACEs studies to assist in calculating prevalence, stating that even allowing for the limitations of the data, that 60% of Americans had been exposed to at least one adverse childhood experience (ACE) and about one quarter had experienced greater than four (Bellis et al., 2019). Gilgoff et al., (2020) data indicate two-thirds of the population of the United States has experienced one or more adverse childhood experiences. Gilgoff et al. (2020) go on to explain the “graded dose-response relationship” (p. 261) between higher numbers of experiences and the increased risk of negative health outcomes. Similar studies conducted across Europe (Bellis, et al. 2019) show similar prevalence results and Australian results show that is estimated that one in five have experienced adverse childhood experiences (Kezelman et al. 2015).

Through an increase in specific trauma research, it is now understood that traumatic events may trigger many complex functions within the body’s stress response systems and affect the exposed person both psychologically and physiologically (Perfect et al., 2016). Emerging research demonstrates the extent to which trauma experiences may negatively disrupt both the social-emotional and cognitive development of children (Domitrovich et al., 2017; O’Dougherty-Wright et al., 2009; Porges, 2011; Stirling & Amaya-Jackson, 2008). A literature review by Jackson et al. (2015), seeking supporting evidence for trauma-informed practice, explains that being “trauma-informed is when a program, organisation or system recognises the presence, impact, and signs of trauma. It involves integrating this knowledge into policies, procedures, and practices to support

recovery and reduce the possibility of further traumatisation” (p. 15). Furthermore, Blodgett and Lanigan’s (2018) research highlights a need for a continuum of support for children who have experienced trauma. They note that it is a combination of trauma-informed people, experiences, and environments as well as specialised services which will have the greatest impact. They further state “adoption of trauma-informed responses and resilience-building experiences within natural systems supporting children is likely to be the most practical and effective way to respond to the scope of ACE exposure” (p.20).

Trauma-informed Practice in Schools

It is often not until a child reaches school that trauma-related issues and behaviours are identified or become evident (De Thierry, 2015). Today, schools are tasked with being much more than academic institutions (Mulford, 2008); there is an added expectation that they meet the social-emotional, psychological, physical, and behavioural needs of students (Brackett et al., 2011; Chafouleas et al., 2015; Jaycox et al., 2006). Teachers play a vital role in any child’s life, and in their early years, may be one of a child’s primary attachment figures (De Thierry, 2015; Craig, 2016). As such, schools have the opportunity to support students through the development of trauma-informed environments (De Thierry, 2015; Willis, 2006).

Children who have experienced complex trauma may present with either (or both) internalising and externalizing behaviour (Baker et al., 2008; Goodwin-Glick, 2017). In a school setting, this can look like challenging behaviour, aggression, violence, non-compliance (externalising), or maybe disengagement or dissociation (internalising) (Australian Institute of Family Studies, 2017). With schools reporting increasing amounts of externalising behaviour, and new educational research into child and adolescent mental health, there has been an increased awareness of students struggling with mental health difficulties and behavioural concerns related to complex trauma (Howard, 2018b). In a commentary article by Oehlberg (2008), she explains that without having knowledge of trauma and its presentation, many teachers and administrators will only see and

treat the symptoms of trauma (the behavioural and learning difficulties) and as such, neglect to address the underlying cause. Craig (2016) asks for a different focus to be placed on behaviour where traditionally challenging behaviour is thought to be as a result of “Bad choices or intentional defiance” (p. 7). By developing an understanding of trauma and trauma associated behaviour, teachers are able to look at behaviour through a different lens and utilise strategies to support student behaviour and emotional reactions that increase a student’s capacity to cope in a way that does not re-traumatise them (Cole et al., 2013).

Wright (2017) discusses ways in which school staff can support children who have experienced the harmful effects of trauma. Schools, being a compulsory part of young lives, provides a convenient environment for intervention (Fraunholtz et al., 2017; Graham et al., 2011; Overstreet & Mathews 2011). Although teachers are not mental health professionals, schools may “represent an opportune system” (Chafouleas et al., 2015, p. 144) to engage children utilising a continuum of support. In collaboration with mental health professionals such as school social workers, teachers have the unique opportunity to develop their skills and interventions to provide trauma-informed support to students. Evidence shows that by providing a trauma-informed environment (one that creates safe spaces by encompassing the individual needs of a student), addressing social injustices within that environment as well as utilising trauma-informed practices, frontline education staff can have a significant impact on student health, well-being and outcomes (Alvarez et al., 2016; Delima & Vimpani, 2011; Jorm et al., 2007) as well as aiding in student recovery (Blodgett & Lanigan, 2018; Plumb et al. 2016). Thomas-Skaf & Jenney (2020) provide a poignant reminder that “for trauma-informed practices to be truly trauma-informed, they must challenge forms of systemic and structural oppression” (p. 1).

In 2019 authors Thomas et al. (2019) conducted an “interdisciplinary review of research” (p. 422) of trauma-informed practice in schools, across a twenty-year period. Thomas et.al. (2019) have reviewed and synthesised the literature and determined the importance of practicing TIP in schools and the effectiveness of school-based supports for “trauma-affected youth” (p. 422).

However, by identifying implications for practice change, they found that the teachers themselves were “under-examined” (p. 422). They recommend a “more robust, interdisciplinary research agenda with the intentional purpose to change teacher practice” (p. 422). This review utilises an ecological model to assist in examining the under-examined, by exploring the implementation variables that help and hinder the implementation of TIP in schools. With the teacher (intrapersonal) at the centre of an ecological behaviour change model, school staff are able to identify areas of strength and weakness across the five levels that provide a starting point for further growth and development leading to practice change. In addition, this assists teachers and the staff that support them to plan and map how to move forward in the effort to become trauma-informed practitioners.

METHODOLOGY

Research Aim

This review aims to identify, collate, summarise and analyse recent evidence regarding the identified factors that contribute to the implementation of trauma-informed practice in schools. With the purpose of both identifying gaps in the research and to provide a useable resource to help assess and address the transfer of trauma-informed knowledge to practice change.

The objectives of this research were to identify current published research literature which examines factors influencing the implementation of trauma-informed practice in schools. Once identified, this research aims to use the data to identify common implementation variables from the research that appear to influence the implementation of TIP in schools.

Method

Ferrari (2015) explains that a narrative review is a specific type of literature review that seeks to identify and summarise a body of published works for the purpose of identifying gaps or “areas not yet addressed” (p. 230). This particular type of review was chosen for its useability. Noble and

Smith (2018) describe a narrative review as an effective way to present a broad perspective on a topic and that it can be used to “synthesise information into a user-friendly format” (p. 3) increasing its practical application to practice change.

Unlike systematic reviews, narrative reviews have no acknowledged guidelines, only what would be regarded as best practice recommendations (Baethge et al., 2019; Ferrari, 2015). However, Ferrari (2015) suggests that “the quality of a narrative review may be improved by borrowing from the systematic review methodologies that are aimed at reducing bias” (p. 230). As such, this review includes detailed methods. Baethge et al. (2019), provide a “scale for the quality assessment of narrative review articles” (p.1), which contains six criteria for authors to address in order to deliver a quality narrative review. These criteria were utilised when writing this review and include; “1) Justification of the article’s importance for the readership;2) Statement of concrete aims or formulation of questions; 3) Description of the literature search; 4) Referencing; 5) Scientific reasoning; 6) Appropriate presentation of data” (p. 3).

This review used a number of different types of search tools, online database searching, University Academic Search Engine (University of Western Australia) – library search Onesearch -- multiple databases in the subject areas of Education (11 data bases including; ERIC, ProQuest Education; EBESCO Education Source; A+ education); Health and Medical Sciences (58 databases including; Jstor; Medline; ProQuest; PsycINFO; PubMed; Informit); Google Scholar and a reference list search (using the reference lists of the initial search results). Using a range of search terms (see Figure. 1), 2189 articles were identified, this list was then sorted, and articles were retained or removed based on the following criteria:

Inclusion Criteria

- Research types including qualitative, quantitative, mixed method, review, perspective / commentary, case study or reports.
- Peer reviewed articles in both local and international journals

- Published or translated into English
- Date range between and inclusive of 2015-2020
- Utilising title, abstract and full article reading process, articles were scanned for the following criteria:
 - School based research
 - Discuss trauma-informed practices implemented by school staff (including; teachers, school leaders, school social workers, school psychologists and education assistants)
 - Describe variables that impact the implementation of trauma-informed practice in the classroom or school
 - Define complex trauma or developmental trauma

<insert appendix 2: Figure 1. Article Inclusion Flow Chart>

To further clarify the boundaries of this review, the following exclusion criteria were used to disqualify literature that fell outside of the focus for this study:

Exclusion criteria

- Non peer reviewed, grey literature, book chapters or dissertations.
- Non-school based or interventions (implementations) by non-school-based staff
- Outside of the date range
- Therapy related articles (articles related to providing therapy in schools for students who have experienced trauma)
- Descriptions of other types of trauma such as simple or medical (physical) trauma

As a result of this process 34 articles were retained for review. Frameworks by Green et al. (2006) and Record – Lemon and Buchanan (2017) provided guidance for summarising and categorising the research identified in the search. The fields of study represented by the 34 articles are

predominantly education, psychology, school social work, and two medical articles from the field of psychiatry.

The identified articles were then subjected to a thematic analysis. This process was started with no preconceived definitions or themes, the resulting themes evolved as the analysis progressed. The analysis utilised a seven step process developed by Sjostrom, and Dahlgren (2002), the seven steps consisted of “Familiarization”; “compilation”; “condensation”; “grouping”; “comparison”; “naming”; and “contrastive comparison” (p. 341). Identified articles were read multiple times in order to be familiar with the text prior to coding. An open coding method (Kolb, 2012) was used to organise the data into core categories or concepts (Giles, de Lacey & Muir-Cochrane, 2016). This was done by finding statements that were discussed or mentioned within the articles as contributing to TIP implementation and were assigned a number. For example, when an article discussed the need for teachers to engage and buy-in to the practice the number one was assigned and for all subsequent mentions or discussions of buy-in were assigned the same number. The identified statements were then grouped and simplified into words or phrases that represent each variable. Once the seven-step process was completed, what was left were sets of variables that have been identified in the literature as being points of note when implementing TIP in schools. The variables were compared, defined and their implications for practice were explained (see Table 3). The implications for practice were developed using a combination of the reviewed articles as well as the knowledge and experience of the author (Qualified Social Worker with experience specialising in student behaviour and engagement in Western Australian schools for 18 years, in a number of different roles and capacities).

Collier-Meeks (2018) explains the use of the term implementation variable to mean any factor (variable) that is impacting the integrity of a program or treatment that is being delivered (implemented) by a teacher within a school. As such, this research will apply this term to the

identified factors that impact the implementation of TIP in schools. At the conclusion of the analysis process, it was established that there were 25 implementation variables that impact the implementation of TIP in schools. It was decided that the list of 25 implementation variables required structure and organisation to increase the useability. Once the implementation variables were identified, this review utilised an ecological model as an overlay to organise and present them in a useable format (Kilanowski, 2017). An ecological model is widely used in social work practice and understood as a conceptual model of human development (Kilanowski, 2017) or, as in this review, used as a behaviour change model in a public health context (McLeroy et al.1988). When placing the teacher at the centre, this type of model can help to conceptually and visually represent how their practice may be impacted as they interact with other people and systems. The literature supports the idea that, if given the right input, conditions and settings, an effective trauma-informed pedagogy may be developed (Howard, 2018a; Kataoka et al., 2018; Luthar & Mendes, 2020).

The work of Bronfenbrenner (1979) underpins much of the future work that would happen around ecological modelling and systems theory (Golden & Earp, 2012). The basis of Bronfenbrenner's (1979) work was to understand human development by exploring the interrelationship between an individual and their environments. As a result of Bronfenbrenner's work, health scientists and researchers developed a way of using this model to assist with health promotion and behaviour change (Golden & Earp, 2012). For the purpose of this review behaviour change as it pertains to the teacher is synonymized with practice change. As practice change is a critical component in the implementation of trauma-informed practice in schools, this review utilised McLeroy's et al. (1988) ecological perspective on health promotion and behaviour change that cites both the work of Bronfenbrenner (1977) and Belsky (1980) as influencing the development of their model. When broken down to its simplest form, an ecological model shows the different systems that surround a person and impact their behaviour and development (Shelton, 2018). It shows how these systems are transactional and not only impact, but also

reinforce and motivate each other (Golden & Earp, 2012). When one system or implementation variable within the system is altered (or ignored) it may affect others both positively and negatively (Shelton, 2018).

RESULTS

As part of this narrative review, 25 trauma-informed practice implementation variables were identified from the 34 peer-reviewed works of current (2015-2020) literature. The presence of the identified implementation variable in each article is detailed and counted in Table 2. Following on from Table 2, Table 3 explains and defines each of the variables and unpacks and describes the implications for practice for each individual variable.

The range of information gathered throughout this review demonstrates it is possible for each implementation variable to be conceptualised as a continuum from unaddressed to fully addressed. For example, 30 out of 34 articles (articles 4, 19, 23, and 31) did not discuss professional learning and training) identified that Professional Learning and Training (see Table 2) is as an implementation variable that is essential for effective trauma-informed practice in schools (Brunzell et al. 2019-article 6). However, the type of training impacts the extent to which it is being implemented (i.e. training is informational or strategy based) (Plumb et al., 2016 -article 26), the amount and level of training (Luthar & Mendes, 2020- article 17), and if the training is ongoing in nature (Crosby, 2015- article 9).

The Ecological Model presented (Figure 2) has utilised McLeroy and colleagues' (1988) ecological model to organise the 25 implementation variables into five levels that represent, (1) the intrapersonal (teacher) variables, (2) interpersonal variables, (3) organisational (school) variables, (4) community variables and (5) policy and society level variables. The model shows that implementation variables can be present and have influence at multiple levels, and in turn can be influenced by multiple levels. For instance, Response to Behaviour (28 out of 34 articles) was found to occur across all five levels as follows:

- **Intrapersonal** – the individual’s ability to understand and effectively respond to student behaviour.
- **Interpersonal** - the teacher’s interaction with others and how others may think, feel and respond to student behaviour.
- **Organisational** – The school-wide response to behaviour and how school safety and procedures impact the way behaviour is responded to.
- **Community** - the community expectations of behaviour and the broader understanding of behaviour and consequences.
- **Policy and Societal** - the law and how it is upheld in response to child and youth behaviour, including addressing social issues regarding race, gender, socio-economic status, and mental health.

<Insert appendix 3: Table 2. Thematic Analysis Chart by Article and Theme>

<Insert Appendix 4: Table 3. Implementation Variables and Implications for Practice>

<Insert appendix 5: Figure. 2. Ecological Model of Trauma-Informed Practice Implementation Variables for Schools>

The above tables and figures show the development and progression from implementation variable to usable model. The results of this review started by highlighting the many possible barriers and facilitators that impact the implementation of TIP in schools. The variables were embedded in an ecological model to be used by schools when assessing their current practice and defining areas that can be strengthened and supported to increase the likelihood of trauma-informed practice implementation. The results of this review identified that within this ecological model there is a process of cause and effect, when pressure or energy is focused on making changes in one area it is possible to influence change in another area. For example, providing professional learning and training at organisational or community level may impact a teacher’s understanding of trauma, their knowledge of trauma-informed practice or may increase their

capacity to buy-in at an intrapersonal level. Alternatively, work with a teacher to increase buy-in may enable them to seek professional learning and training or support at interpersonal or community levels.

Support was a standout variable in terms of its occurrence in the reviewed articles, with all 34 articles discussing the importance of support for students who have experienced trauma, as well as school staff who are implementing trauma-informed practice in schools. The analysis showed that support can happen along a continuum, can be multi-tiered, and may look like different things for different people (Berger, 2019). Berger's (2019) (article 3) systematic review found that trauma-informed practices themselves can be a support to staff, she states that when a school utilises a multi-tiered system of support framework, it is likely to "improve staff knowledge and confidence regarding trauma" (p. 651). Luther and Mendes (2020) (article 17) explain that "What teachers under stress need in order to maintain good functioning is, in fact, the same as what children need to maintain resilience in the face of adversity: ongoing access to dependable, nurturing supports" (p. 153)

DISCUSSION

It is widely understood that teachers make up the largest percentage of school staff and are the people with whom students have the greatest contact. Therefore, it is understandable why much of the literature and this review has an intensive education and teacher focus. As part of this review, it was found that little of the available research specifically addressed how teachers can be supported to change their practice and increase their capacity to implement TIP in schools. The results of this review found and acknowledged that teachers are key to TIP implementation in schools (Zakszeski et al. 2017 –article 34) and this is the first step in understanding and conceptualising the types of support required for said teachers. This discussion will focus on how school social workers and other school-based mental health professionals can be a catalyst for

change and are best positioned to provide that support and develop ways for support to eventuate.

Crosby (2015) (article 9) discusses the role of the school social worker in supporting teachers and schools to implement trauma-informed practice. They describe the way school social workers engage in interventions at multiple levels, from direct work with students and families to the work they do at a school level such as support for teachers (Intrapersonal – Interpersonal), professional learning, and training (Intrapersonal – Community), providing information to teachers on student development and mental and behavioural health (Organisational – Community), providing programs (Organisational), and ultimately, providing leadership (Policy & society), and creating optimal environments (Organisational – Community) for trauma-informed practice to be implemented.

The three propositions below were derived from the theoretically organised findings in the above ecological model. These propositions were identified as being actionable within a school and may be utilised by; A school social worker to assist in building support structures for staff and students, A teacher wanting to implement personal practice change, an administrator invested in supporting a teacher's practice change journey, or any stakeholder wanting to reduce the barriers against practice implementation or practice (behaviour) change. The following propositions propose a way for school social workers to move forward supporting and facilitating the implementation of trauma-informed practice utilising the ecological model and the identified implementation variables.

Ecological Model Level: Intrapersonal

Proposition 1

Understanding the impact of a teacher's inner world (attitudes, values, morals, experience) on their ability to implement trauma-informed practice in schools is necessary for developing processes that facilitate behaviour change.

This review identified ways in which an individual teacher's internal (intrapersonal) variables may impact their ability to implement trauma-informed practices in schools. A teacher has their own set of complex factors that weave together to develop their personality, temperament, morals, values, schemata, knowledge, capacity, abilities, and skills. These factors drive and develop behaviour and as such are important components in changing behaviour. Hall and Simeral (2018) state that "how we think drives what we do" (p. 1), as such, to achieve teacher practice or behaviour change, a teacher's thinking needs to change. This can be achieved through the process of critical reflection, a practice highly regarded within social work communities. It is a process of analysing, thinking, and identifying the assumptions that impact personal beliefs. The process is continued by a teacher questioning their assumptions in order to justify or change practice (Grellier & Goerke, 2014). A teacher's response to behaviour is often a result of their conceptualisation of behaviour and assuming intent on the part of the student, both of which are impacted by personal experience. When examining a teacher's reaction to a student's behaviour, Morton and Berardi (2017) (article 20) explains that "the students' reaction will, most likely, be misunderstood, resulting in merely behavioural consequences (such as classroom exclusion) rather than coupled with trauma-Informed reasoning and response intended to partner with the student to deescalate reactive behaviours" (p. 490). For example, a teacher, unfamiliar with the student's background or trauma-informed practices, observes a student refusal to engage in a task, thinking the student lazy or non-compliant, the teacher follows the school behaviour management system and gives the student a warning followed by a referral to time out. The student escalates, throws a chair, and leaves the room. As a result, the student is suspended and sent home. Using a reflective process to identify personal beliefs and assumptions about behaviour, impacts teacher thinking and by extension teacher behaviour. Had this teacher approached the student to establish a connection and sought the reason for the non-compliance, there may have been a different outcome. Had the teacher's assumption been, "something is preventing him from starting" she may have looked for ways to address the issues and barriers

with the student, as opposed to automatically thinking “he is lazy” which encourages a punitive approach and punished him for not complying, in a situation where he may not have been able to. Utilising a teacher’s reflective understanding of their internal processes and behaviour to address gaps in their knowledge and unproductive thinking assists in developing a trauma-informed pedagogy (Brunzell et al., 2019 (article 6); Howard, 2018a (article 15). School Social Workers are in a prime position to assist teachers to engage in a self-reflection or critical reflection process to help identify and address any internal barriers they are experiencing when implementing trauma-informed practice. However, many complex aspects may prevent a teacher from engaging in such a process; such as, not feeling safe and supported in their school environment, having experienced trauma themselves, or a teacher at burnout may not possess the capacity to be critically reflective. Furthermore, Jaeger (2013) found that “major hindrances to reflection also include lack of skills and experience, certain personal characteristics of individual teachers, limitations of the profession, and school and district structures that undermine reflective behaviour” (p. 96). Many external variables influence behaviour and practice change, however, ultimately behaviour change comes from within the teacher (Sallis et al., 2008). Kruse & Louis (2009) explain that “internal change may be stimulated from the outside, but it must be nurtured internally” (p. 13)

Ecological Model Level: Interpersonal

Proposition 2

Creating optimal environments by surrounding the teacher with information, practice examples, leadership, and support can all influence their ability to implement trauma-informed practice.

Information to assist school staff to create trauma-informed environments for students who have experienced trauma is readily available online or in published works (Dorado et al., 2016 (article 11); Overstreet & Chafouleas, 2016 (article 22)). However, there is little information assisting school social workers and administrators to create the optimum environment to support teachers

on their trauma-informed practice journey. This review scoured the current literature to identify both internal and external implementation variables that impact and influence a teacher's ability to implement TIP. It is at the interpersonal level that a teacher's behaviour and practice are influenced by external variables. It highlights the interpersonal relationships that surround the teacher and the influence those relationships have upon the individual (McLeroy et al. 1988). Interpersonal relationships include family, peers, colleagues, students, administrators as well as the relationship the teacher has with their immediate environment. A teacher's relationship with their environment is transactional and is defined by both what the individual receives from and contributes to that environment (Crosby, 2015) (article 9). For example, if a teacher is immersed and comfortable in an environment, surrounded by information as well as knowledgeable and supportive colleagues, a teacher will seek out what they need from that environment and in return provide knowledge and support to others further establishing a collaborative, psychologically safe and supported environment (Garrick et al., 2014).

Creating environments that are supportive as well as conducive to learning and skill development, contributes to both student and teacher behaviour change. Teachers, school social workers, and administrators alike have the ability to assess and address the environment, removing barriers and building supports and facilitators, and as such, smoothing the way for behaviour (practice) change and increasing the likelihood of trauma-informed practice implementation. However, Pyhältö et al. (2011) warn that where a teacher feels their workplace is a high-stress environment, they are at greater risk of developing burnout or fatigue and are more likely to withdraw and avoid seeking help or support (Garrick et al., 2014).

Ecological Model Level: Organisational (School)

Proposition 3

Specialist professional learning and training of a whole staff builds a community of trauma-informed practice teachers who in turn, can support, lead, problem solve, and create an environment that is more conducive to TIP implementation and therefore, a safer and more supported space for both students and staff.

Utilising a whole school (organisation) approach to trauma-informed practice allows for the entire system of staff, in and around the school, to be considered (Dorado et al., 2016) (article 11).

School social workers may seek to build a team approach where each staff member has a role and a part to play in supporting students who have experienced trauma. Through professional learning, training, leadership, and facilitation, staff can work together to create a school culture and community with a safe learning and working environment (Admiraal et al., 2019; Rowe & Stewart, 2011). Effective, evidence-based, professional learning or training provides teachers with a shared understanding, language, and strategies that are instrumental in supporting students (Dorado et al., 2016 (article 11); Rowe & Stewart, 2011) and encouraging a shared vision for implementing trauma-informed practice. Joram et al. (2020) describe utilising the school social worker in the role of professional development facilitators and working as “knowledge brokers” (p.10) who help translate research into useable (actionable) information or teacher discourse. Professional learning and training can be effectively utilised by schools to inform and influence either staff practice change or consolidation of skills. Blitz, Yull, and Clauhs (2016) (article 5) explain that “professional development for school personnel is needed to promote a deeper understanding of the role of trauma and structural inequities to help school personnel effectively utilize school discipline” (p. 24).

For a school social worker applying a whole school trauma-informed approach to culture change is not without issue. Staff attrition means losing highly skilled staff followed by training and the time consuming induction of new staff. Furthermore, administrators have highlighted that whole school and cultural change takes time, especially when encountering change-resistant staff. Kruse & Louis (2009) warn that there will be minimal practice change when training and professional

learning is “limited to providing superficial understandings of complex ideas” (p. 14). To achieve practice change and achieve belief shift, teachers need to “engage in sustained learning that challenges their assumptions and provides better avenues to achieve results” (p. 14). Many school social workers are in a position to ensure educational organisations consider how “learning is embedded in professional lives and working conditions, acknowledging the context and the situatedness of teacher learning” (Admiraal et al., 2019 p.1) in order to achieve culture and practice change.

GAPS IN RESEARCH

All but four articles (articles 4, 19, 23, and 31) referred to the importance of training and professional learning for teachers, yet very few provided information about training specifics and how teachers can be moved from ‘what they know’ to ‘what they need to do’. Further gaps highlighted by this review were the limited teacher voice, regarding their perceptions of what helps and hinders the implementation of trauma-informed practice in schools and their classrooms. This could be further broadened with research into the perceptions of trauma-informed practice of parents and students. This review went some way to fill the gaps regarding TIP barriers and facilitators in schools however, as an extension to this review further research and testing is warranted around the identified implementation variables and the ecological model and its usability in schools.

LIMITATIONS

The limitations of this review are that it is a narrative review as opposed to a systematic review. To assist in combatting this limitation, this review has borrowed methods associated with a systematic review to assist in increasing rigour and reducing bias (Ferrari, 2015). Limitations also include that the articles were analysed, and themes developed by a single researcher, to improve the trustworthiness of this research articles and themes may be jointly analysed and developed for a more comprehensive and robust understanding of the identified implementation variables.

Alternatively, the variables could be the basis for further research, where they can be applied and tested with teachers in schools.

The use of trauma-informed practices in schools has not been specifically addressed in terms of racial and cultural traumas which is a further limitation of this work, this is a vital area of research that requires further study. It is important to note that although not specifically addressed, it is expected that utilising trauma-informed practice may support students who have been exposed to racial trauma (Alvarez et al., 2016). Possible future research may investigate if the process of developing a school's trauma-informed practices helps develop racially and culturally appropriate supports for students (Alvarez et al., 2016) and/or highlight areas of discrimination within the school's policies and processes subsequently helping to diminish disadvantage and discrimination within a school.

CONCLUSION

Within both education and academic communities, there is heightened awareness around the impact of complex trauma (Howard, 2018b; Olf, 2018). There is an understanding that the symptoms of trauma may have a profound effect on an individual and by extension the people and environment around them (Kezelman & Stavropoulos, 2012; Tobin, 2016). Current research shows that by utilising trauma-informed environments and practices, organisations providing services to people who have experienced trauma can substantially influence the recovery process (Kezelman & Stavropoulos, 2012). Hence, the expressed need for teachers and school support staff and clinical staff to be trained and to utilise trauma-informed environments and practices when working with students who have experienced trauma (Craig, 2016; De Thierry, 2015). After identifying and theoretically organising the identified variables there were a number of ideas that stood out. Firstly, the impact a teacher's inner world has on implementation. Secondly, the need for TIP conducive environments and thirdly, whole-school professional learning and training that contributes to practice and culture change. It was identified that trauma-informed practice

implementation is more likely and effective when schools develop and demonstrate practices and processes that bring the above propositions into practice. Furthermore, the propositions highlight the combination of processes that need to be in play for teacher practice change to occur. In conducting this review, it became evident there was a shortage of research highlighting the range of factors impacting both the transfer of knowledge and the implementation of trauma-informed practices in schools. Through the summation of the identified literature in this review, a set of implementation variables as well as an organisational framework were established that can be assessed and addressed to create an environment more conducive to TIP implementation.

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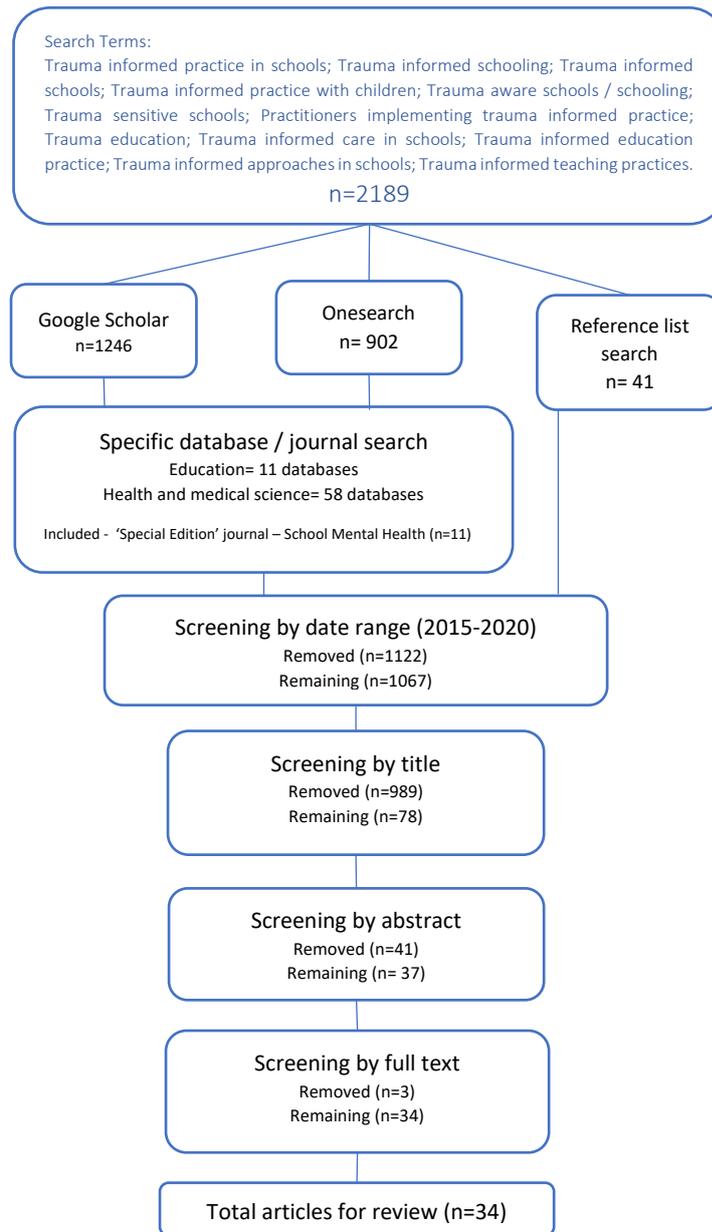
Appendix 1

Table 1. Trauma definitions

Simple Trauma	Complex Trauma (or interpersonal trauma)	Developmental Trauma
Describes a single, one off, overwhelming event that is short in duration (Tobin, 2016). When people have experienced simple trauma, there is generally a support system that will provide assistance (for instance after a severe weather event or car accident).	Describes when people (children or adults) experience traumatic, overwhelming experiences, more than a single event (Brunzell et al. 2015; Tobin, 2016). Complex trauma may “involve multiple incidents, ongoing personal threat, violence, and violation” (Brunzell et al. 2015 p. 3) (for instance; family and domestic violence, child abuse, and bullying).	Describes when children and adolescents are exposed to traumatic events that occur during crucial times of brain development and “where the developmental progression is disturbed or interrupted” (Heller, & LaPierre, 2012 p.32) (for instance neglect, abuse, and exposure to family and domestic violence, as with complex trauma, but also missattunement and attachment issues with primary care giver (Heller, & LaPierre, 2012; Tobin, 2016).

Appendix 2

Figure 1. Article Inclusion Flow Chart



Appendix 3

Table 2: Thematic Analysis Chart by Article and Theme

	Author and Date	Research design	Country	Discipline	Buy-in	Support	Response to Behaviour	Policy & Law	Professional Learning and Training	Multidisciplinary Collaboration	Resourcing	Research	Complexities of a School Context	Programs and Interventions	Flexibility	Cultural Complexities	Relationships and Engagement	Understanding Trauma	Knowledge of TIP	Assessment	Recognition of Diagnoses	Student Complexities	Environment	Teacher Complexities	Social Justice	Teaching Practice and Skills	Home Complexities	Communication	Leadership
1	Anderson, E., Blitz, L., & Saastamoinen, M. (2015).	Research Mixed	USA	SW / ED		●	●		●	●	●		●			●	●	●	●	●		●	●	●		●	●	●	●
2	Baweja, S., Santiago, C., Vona, P., Pears, G., Langley, A., & Kataoka, S. (2015).	Research Qual	USA	ED / Psych	●	●			●	●			●	●		●	●	●	●			●		●				●	
3	Berger, E. (2019).	Review	Aust	ED		●	●	●	●	●				●			●	●		●				●		●	●		
4	Blitz, L., Anderson, E., & Saastamoinen, M. (2016).	Research Mixed	USA	SW / ED		●	●			●	●		●	●	●	●	●	●	●			●	●	●	●	●	●	●	
5	Blitz, L., Yull, D., & Clauhs, M. (2016).	Research Mixed	USA	SW		●	●		●	●		●	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●
6	Brunzell, T., Stokes, H., & Waters, L. (2019).	Research Qual	Aust	ED / Psych		●			●				●				●					●		●					
7	Cavanaugh, B. (2016).	Perspective	USA	ED		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●		●	●		●	●	●
8	Chafouleas, S., Johnson, A., Overstreet, S., & Santos, N. (2015)	Review	USA	ED / Psych	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
9	Crosby, S. (2015).	Perspective	USA	SW	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●
10	Crosby, S., Howell, P., & Thomas, S. (2018)	perspective	USA	SW / ED	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
11	Dorado, J., Martinez, M., McArthur, L., & Leibovitz, T. (2016).	Review	USA	Psychiatry	●	●	●	●	●	●	●		●			●	●	●	●	●		●	●	●	●		●		
12	Fondren, K., Lawson, M., Speidel, R., McDonnell, C., & Valentino, K. (2020).	Review	USA	Psych		●	●	●	●	●	●	●	●	●			●		●	●		●		●		●			
13	Gherardi, S., Flinn, R., & Jaure, V. (2020).	Review	USA	SW	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●
14	Herrenkohl, T., Hong, S., & Verbrugge, B. (2019).	Review	USA	SW		●	●		●	●	●	●		●	●	●	●	●	●	●		●	●	●	●		●		

	Author and Date	Design	Country	Discipline	Buy-in	Support	Response to Behaviour	Policy, & Law	Professional Learning and Training	Multidisciplinary Collaboration	Resourcing	Research	Complexities of a School Context	Programs and Interventions	Flexibility	Cultural Complexities	Relationships and Engagement	Understanding Trauma	Knowledge of TIP	Assessment	Recognition of Diagnoses	Student Complexities	Environment	Teacher Complexities	Social Justice	Teaching Practice and Skills	Home Complexities	Communication	Leadership	
15	Howard, J. (2018).	Research Mixed	Aust	ED	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●			●	●	
16	Kataoka, S., Vona, P., Acuna, A., Jaycox, L., Escudero, P., & Rojas, C. et al. (2018).	Case study	USA	SW / ED / Psychiatry		●	●	●	●	●	●	●	●	●		●	●	●		●		●	●	●	●		●	●	●	
17	Luthar, S. & Mendes, S (2020)	Research Qual	USA	Psych	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●		●		●		●	●			
18	Maynard, B., Farina, A., Dell, N., & Kelly, M. (2019).	Review	USA	SW		●	●	●	●	●		●	●	●		●	●	●	●	●		●	●		●	●	●	●	●	
19	Morgan, A., Pendergast, D., Brown, R., & Heck, D. (2015).	Research Mixed	Aust	ED		●	●			●	●				●		●	●	●		●	●		●	●	●				
20	Morton, B., & Berardi, A. (2017).	Perspective	USA	ED	●	●	●		●	●	●	●	●	●		●	●	●			●	●	●	●	●	●	●	●		
21	Nadeem, E., & Ringle, V. (2016).	Research Qual	USA	Psych	●	●		●	●		●	●	●	●						●				●					●	
22	Overstreet, S., & Chafouleas, S. (2016).	Perspective	USA	Psych	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●			●			●	
23	Perfect, M., Turley, M., Carlson, J., Yohanna, J., & Saint Gilles, M. (2016).	Review	USA	Ed / Psych		●	●	●				●						●	●	●										
24	Perry, D., & Daniels, M. (2016).	Research Mixed	USA	ED		●			●	●							●	●		●		●	●			●	●			
25	Phifer, L., & Hull, R. (2016).	Perspective	USA	ED		●	●		●								●		●			●	●	●						
26	Plumb, J., Bush, K., & Kersevich, S. (2016).	Perspective (model)	USA	SW / ED	●	●	●	●	●	●	●			●	●	●	●	●	●	●		●	●	●	●	●	●	●		●
27	Record-Lemon, R., & Buchanan, M. (2017).	Review	Can	Psych / ED		●	●	●	●	●	●	●	●	●			●		●	●	●	●	●	●	●	●	●	●		
28	Reinbergs, E., & Fefer, S. (2018).	Review	USA	ED	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●		●		●	●			
29	Rishel, C., Tabone, J., Hartnett, H., & Szafran, K. (2019).	Research Quant	USA	SW		●	●		●	●			●	●			●			●		●	●	●	●	●	●			

	Author and Date	Research design	Country	Discipline	Buy-in	Support	Response to Behaviour	Policy & Law	Professional Learning and Training	Multidisciplinary Collaboration	Resourcing	Research	Complexities of a School Context	Programs and Interventions	Flexibility	Cultural Complexities	Relationships and Engagement	Understanding Trauma	Knowledge of TIP	Assessment	Recognition of Diagnoses	Student Complexities	Environment	Teacher Complexities	Social Justice	Teaching Practice and Skills	Home Complexities	Communication	Leadership	
30	Thomas, M., Crosby, S., & Vanderhaar, J. (2019).	Review	USA	ED	●	●	●	●	●	●	●	●	●		●	●	●	●	●					●						
31	Tobin, M. (2016).	Report	Aust	ED		●	●	●		●	●	●			●		●	●		●	●	●	●	●		●				
32	Venet, A. (2019)	Perspective	USA	Psych / ED		●			●	●	●		●	●			●					●	●	●	●	●	●		●	
33	Wiest-Stevenson, C., & Lee, C. (2016)	Perspective	USA	SW	●	●	●	●	●	●	●		●	●	●	●		●	●	●	●	●	●	●	●	●	●		●	●
34	Zakszeski, B, Ventresco, N, & Jaffe, A. (2017)	Review	USA	ED	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●			
Total number of articles representing each variable out of 34					16	34	28	21	30	30	25	23	23	27	17	22	30	27	25	24	9	29	23	31	18	22	21	13	13	

Table 3. Implementation Variables and Implications for Practice

Implementation Variable	No. of Articles (n= 34)	Descriptions	Implications for Practice
Buy-in	16	Refers to the act of supporting, accepting, investing and committing to engage in and use trauma-informed practices in schools. This refers to buy-in from schools, staff, administrators, parents, and students.	The reviewed research supports a need for teacher buy-in to get momentum toward trauma-informed practice. It is possible to have all external variables met, however, without engagement (buy-in) from the teacher, implementation would be “challenging” (Zakszeski et al., 2017 p. 316). Addressing how to increase teacher and administrator buy-in is an important part of the change process and can be facilitated by utilising both critical reflection and behaviour change processes.
Flexibility	17	Refers to an individual’s ability to be flexible and adaptable to new situations. As well as a flexibility in the system and programs to accommodate students with complex trauma needs.	Flexibility is a trait that assists teachers to address student and personal needs in the moment, it is the teacher’s ability to learn and adapt as they teach and engage with others. It allows teachers to receive and analyse feedback from their environment and change behaviour to suit the need. Addressing both the system and teacher’s barriers to flexibility through critically reflective processes can assist in increasing flexibility.
Understanding Trauma	27	Refers to an individual’s current understanding of trauma or its related terms, this includes understanding the developmental and social/behavioural influences that experiencing trauma has on an individual as well as their broader community.	Understanding trauma has the ability to change a teacher’s perception of a student. The knowledge around how exposure to negative childhood experiences and traumatic events shapes the brain and behaviour allows for a different type of reaction from the teacher. The knowledge helps to reframe teachers thinking around causes and functions of behaviour thus increasing the likelihood of a trauma-informed response (one that supports and teaches, not punishes and shames a student). Furthermore, having an understanding of trauma allows the teacher insight into what causes trauma therefore use evidence based information to promote healing and to avoid inadvertently re-traumatizing a vulnerable student. With understanding comes the increased ability to identify a student who has experienced trauma and implement appropriate interventions and supports.
Knowledge of TIP	25	Refers to an individual’s awareness and knowledge of trauma-informed practice. This includes an understanding of how to develop and implement evidence-based strategies that are known to assist students who have experienced trauma.	With an understanding of the relational, psychological and physiological impacts of trauma, teachers have the opportunity to translate this knowledge and understanding into practice. Further training or research around evidence-based trauma-informed practices will provide them with practice techniques and strategies to promote healing and regulation for students that have experienced trauma and help them avoid practices that re-traumatize through punishment, shame and exclusion. Having an understanding of why particular strategies, techniques and ways of interacting with students have better outcomes is helpful in changing teacher behaviour.
Teacher Complexities	31	Refers to the complexities and experiences (both professional and personal) that develop and guide a teacher’s practice and pedagogy. This directly impacts the teacher’s ability to adapt, be flexible, be reflective, understand and integrate learning, research and best practice strategies into their personal practice. This includes a teacher’s knowledge, beliefs, attitudes, personality, self-concept and temperament. As well as the state of their mental health and wellbeing for instance, burnout or compassion fatigue, PTSD, anxiety.	Individual teachers have their own unique and complex identity that influences and shapes both conscious and unconscious practice. This identity is built around development, experiences, education as well as personal qualities such as personality, and temperament. These factors that have built and moulded this individual and will impact their ability and their capacity to understand and implement trauma-informed practice. Therefore, assisting teachers to be critically reflective as well as providing information and coaching to promote stress management and well-being practices will directly impact their ability to implement trauma-informed practices.
Teaching Practice and Skills	22	Refers to the knowledge, experience, and the type of skills that are required for individuals to implement trauma-informed practice in the classroom. As a whole this includes teacher pedagogy as well as classroom management skills.	Teaching practice and skills refers to the development of a teaching style and pedagogy that includes the knowledge and skills required to effectively manage the needs of the classroom. A teacher requires a basic competency in engagement and classroom management as trauma-informed practice builds on a foundation of effective classroom management. The reviewed articles discussed that teachers and teachers feel they are ill equipped to manage and support students who have experienced trauma with limited or no training and limited information regarding student exposure. Assessing and addressing the individual skill development and training requirements of teachers will support the implementation of trauma-informed practice.
Professional Learning and Training	30	Refers to the availability, accessibility and participation in a continuum of trauma-informed learning and training that is both evidence-based and ongoing in nature.	The aim of trauma-informed practice professional learning or training is to facilitate behaviour change in a teacher that increases the likelihood of trauma-informed practice implementation. Professional learning and training should impart knowledge, create a shared understanding, and develop teacher beliefs and attitudes that promote the behaviour change. Ensuring the availability and accessibility of evidence-based training that provides both information (developing understanding) and skill development for teachers.
Relationships & Engagement	30	Refers to the development and maintenance of interactions between teachers, students and families. In addition, establishing	Long-term research into teacher – student relationships show the positive impact a health and safe relationship can have on student outcomes (Dods, 2013). This research extends into the field of trauma and trauma-informed practice, even presenting

		ways of maintaining those relationships and engaging students in school whilst maintaining professional boundaries.	evidence that these relationships can “buffer the impact of traumatic stressors” (Rishel et al., 2019 p. 241) creating protective factors for students who have experienced trauma. Dorado et al. (2016) explains that “by fostering relationships that are compassionate and attuned, as well as dependable and trustworthy, we re-establish trusting connections with others that foster healing and well-being” (p. 167).
Assessment	24	Refers to the assessment as part of trauma-informed practice implementation. Using surveys, research, and observations to establish areas of strength and weakness in order to help students succeed at school. Furthermore, assessment can also include comprehensive needs assessment for both students and staff and more broadly the school.	The reviewed research found that there was a need to utilise a mixture of both formal (standardized) and informal assessment to assist teachers to effectively plan and implement interventions for students who have experienced trauma. When discussing the assessment needs of students, Overstreet & Chafouleas (2016) succinctly explain that “given the high prevalence of trauma exposure and the associated risk for a variety of negative outcomes, a universal approach to screening can maximize detection of students at risk for a wide range of adverse outcomes, allowing schools to respond to those students and ameliorate or prevent negative outcomes” (p. 2). In addition to student assessment the reviewed research makes reference to and recommends that teachers complete a personal a comprehensive needs assessment to “understand their ideas about their own professional development needs related to trauma informed practices” (Anderson et al., 2015 p. 118).
Recognition or Diagnoses	9	Refers to disabilities and medical conditions that are, because of, or in addition to the student’s exposure to trauma. These conditions or co-morbidities may influence how trauma-informed practice is implemented within the classroom.	The reviewed articles highlighted the need for teachers to remember that trauma has a physical and psychological impact on the body and the brain regardless of a formal diagnosis. Reinbergs and Fefer (2018) remind that “Not all children who experience potentially traumatic events will develop symptoms and these symptoms in children are frequently comorbid with, or may mimic, a number of other conditions, including other anxiety disorders, attention deficit hyperactivity disorder, and oppositional defiant disorder”. (p. 255). It is not necessary to wait for a diagnosis for teachers to implement trauma-informed practices, these practice strategies first and foremost consider student need and as such, are useful with all students.
Student Complexities	29	Refers to the individual personality, and characteristics of a student as well as the context, and demographics surrounding them. This may include, student attendance, engagement, capacity to engage, complex needs, behaviour presentation, protective factors, and resilience skills all of which may affect the implementation of trauma-informed practice.	Each student is a unique being with unique experiences that influence their development. Their personality and temperament as well as their own personal circumstances will influence their ability to engage with both education and the people around them. The reviewed literature discussed the importance of knowing and understanding a student and the complexities that surround them. A teacher must be aware of the factors that influence student need, understanding factors such as “cultural and/or socio-economic diversity, health issues (physical or mental), different abilities or specific learning needs can enable teachers to differentiate curriculum accordingly in response to each individual young person” (Morgan et al., 2015 p. 1041). With the added complexities associated with childhood traumatic experiences, Perfect et al., (2016) discussed the importance of teachers understanding that “the neurobiological cognitive, social, emotional, and behavioural issues inherent in traumatic stress symptoms can interfere with school functioning (i.e., learning problems, lower grades, need for special education, less attendance, increases in suspensions/expulsions)” (p. 9). Herrenkohl et al. (2019) further explain and suggest that “children who experience trauma have difficulty adjusting to the routines and demands of formal schooling, [...] are thought to require both academic supports and targeted psychological and behavioural interventions” (p. 374).
Environment	23	Refers to the physical, cultural, psychological environment around a student and teacher that influences how and if trauma-informed practice can be implemented.	The reviewed articles discussed that establishing safe and secure environments, that are responsive to the needs of both students and staff goes a long way to developing optimal conditions for implementing trauma-informed practice in schools. If students feel physically, psychologically and socially safe, they are less likely to be triggered by their surroundings, and more likely to engage with school-based programs. Additionally, developing environments that support teachers to develop their skills and utilise a trauma-informed pedagogy will further contribute to school, student and staff wellbeing.
Communication	13	Refers to the skills necessary for an individual to effectively form relationships and communicate with one another, as well as being able to disseminate information in an appropriate and confidential manner.	Communication is a vital part of everyday life for both teachers and students alike. For students who have experienced trauma, the ability to communicate and express their needs and emotions clearly may be impacted as well as their capacity to ‘read the play’ in social situation. With this in mind, teachers need to be conscious of both their verbal and non-verbal communication skills, to avoid miscommunication and situations where students may feel threatened. Furthermore, teachers have voiced their “frustration with the lack of information they are provided about students’ needs” (Anderson et al., 2015 p.126), they seek clear communication in the forms of support and information from their administrators and colleagues.
Support	34	Refers to the continuum of support provided, offered, available to, or sought by any person (staff, student, parent) in order to increase their capacity to manage trauma related issues or to implement trauma-informed practice within the school environment.	Support comes in many forms and from many places. Teachers might seek or receive support from colleagues, administrators, family, through training and professional associations, or in the form of mental health and wellbeing specialists. Identifying the type of support required is a necessary component of seeking or providing support. Luthar and Mendes (2020) explain that “what teachers under stress need in order to maintain good functioning is, in fact, the same as what children need to maintain resilience in the face of adversity: ongoing access to dependable, nurturing supports” (p. 153). With a more holistic view of support, Venet (2019) expressed that to fully support teachers to implement trauma-informed practices “requires advocacy on many levels: personal and political, local and national. We cannot place the responsibility of trauma-informed practices solely on teachers, ignoring the systemic reasons that so many children experience trauma in the first place” (p. 8).
Multidisciplinary Collaboration	30	Refers to teachers and schools working in collaboration with groups of people from different educational and professional	Collaborating with specialists from multiple fields can be extremely helpful when working with students who have experienced trauma. Specialists from other fields bring different and targeted knowledge, new perspectives, understanding and skills to the

		backgrounds to develop a holistic or wraparound approach to student assessment, planning and intervention.	table. Much of the reviewed literature recommends using multidisciplinary collaborators as “knowledge brokers” (Joram et al., 2020 p. 10) to assist schools to get a holistic view of a student and their complexities. Outside agencies may not have school-based experience but combining their knowledge and skill with those of the teacher can build an effective, trauma-informed, wrap-around service.
Complexities of a School Context	23	Refers to the multiple factors that contribute to the school environment that, in turn impact the delivery or implementation of trauma-informed practice. Each school is a system or community of its own with factors such as number of students, teachers, resources, socio-economic status, school focus, attendance, community issues, as well as the number of students who have or are currently experiencing traumatic events.	Schools are all unique. They are defined by their clientele, demographics, student numbers (and attendance) as well as the community inside and outside the school. Each school is constituted of individual students and staff, all with their own complexities and experiences that impact on their behaviours and development. Knowing the school’s context, needs and access to resources are important factors to assess and understand when seeking to become a trauma-informed school. Further issues raised in the reviewed articles that influences trauma-informed practice implementation included increasing pressure on students and staff regarding academic performance, resourcing, staffing turnover (losing trained staff), and changes in legislative policy.
Home Complexities	21	Refers to the multiple factors or variables that happen at home or outside the school environment that impact the student’s presentation at school.	There are many factors affecting a student’s presentation at school. Factors such as relational issues with family, homelessness, exposure to traumatic incidents, attendance, financial difficulties or basic needs not met, all impact a student’s ability to enter the school successfully and impact a teacher’s ability to maintain a classroom environment that is safe and secure for all students. Student’s may not have the ability to codeswitch and ‘leave it at the gate’, they may require a level of trauma-informed intervention from staff. Many of the issues presented in the reviewed articles fall outside a school’s purview or sphere of influence and as such, much of the response and work happens when the student gets to school. In order to deliver a trauma-informed response requires staff to develop relationships with the students, establish relationships with caregivers, engage families or students with other supports such as School Social Work services.
Leadership	13	Refers to anybody willing to stand up and help lead a team towards practice change. This involves commitment at training, implementation and support levels. This can include school administrators, staff, community members or governments who are willing to push for trauma-informed change within the education system.	Blitz et al., (2016) state that “the role of leadership is crucial: trauma-informed systems need strong yet flexible leaders” (p. 115). Leadership refers not only to the school leadership hierarchy but also to anyone willing to stand up and take the lead, people who seek and disseminate information, provided support and model strategies to assist others to implement trauma-informed to practice. To get school wide practice change, “champions within the school in the form of a leadership team capable of engaging in team based strategic action planning are necessary to coordinate across agencies and, perhaps most importantly, engage in efforts to facilitate buy-in within the school system” (Chafouleas et al., 2015 p. 152-153).
Response to Behaviour	28	Refers to the individual, school, or system level reactions to behaviour (including assumed reasons for behaviour, verbal and physical responses and imposed consequences as a result of unproductive student behaviours).	The reviewed articles addressed school level and systemic issues around understanding and responding to student behaviour. Traditional behaviour management policies (both within education and in the wider community) are based on behaviourist theory of reinforcing choices made by individuals, using a system of rewards and consequences. For a student who has experienced trauma, behaviour is often not a choice but a protective reaction to a threat (real or perceived) (Crosby et al., 2018). Therefore, many consequences imposed by systems may reinforce the unproductive behaviour or re-traumatize students through harsh punishment, exacerbating the issue not diminishing it. Morton & Berardi (2017) predict that in a school environment, “the students’ reaction will, most likely, be misunderstood, resulting in merely behavioural consequences (such as classroom exclusion) rather than coupled with trauma informed reasoning and response intended to partner with the student to deescalate reactive behaviours” (p. 490). Howard’s (2018a) research explains that “Neuroscience also provides an explanatory framework to understand why these students can exhibit relational difficulties and challenging behaviour and why traditional or common means to manage student behaviour tend not to be effective” (p. 550). It is a combination of education and policy change that will assist in changing teacher and systems responses to behaviour in order to support behaviour change for students who have experienced traumatic events.
Resourcing	25	Refers to the availability and accessibility of a range of resources – physical, human, financial, and informational, to schools, staff, students and families.	Resourcing is a crucial part of implementing any changes and programs within a school. However, Kataoka et al. (2018) explain that “unfortunately, not all schools have the resources to offer these programs, with schools often having competing demands for limited funds and workforce” (p. 420). The reviewed articles discussed that schools are under increasing pressure to deliver academic results often leading to greater resourcing for curriculum-based programs leaving less financial and human resources for social emotional learning and trauma-informed education. In order to implement trauma-informed practices, schools need to assess the school’s level of need, prioritising student need and encouraging staff to be creative and flexible when researching and developing ways of meeting those needs.
Research	23	Refers to the ongoing accessibility and availability of current research from multidisciplinary backgrounds. This variable also includes the continuation and dissemination of new research relating to the development, intervention, and implementation of trauma-informed practice in schools.	Research is a vital component in the implementation of trauma-informed practice. Conducting and collating research provides evidence to support current practice or to prompt practice change. The reviewed articles discuss available research and identify barriers that prevent teachers from using peer-reviewed research to inform their practice. This is often referred to as the <i>research to practice gap</i> , or how teachers to move from what they know (research), to what they do (practice – strategies). Joram et al. (2020) uses the term “knowledge broker” (p. 10) to describe someone who can help schools transpose and translate information into a teacher discourse, utilising it to develop strategies and techniques that are relevant and specific to their individual classrooms and school environments. The field of trauma-informed practice is constantly evolving and as such, utilising current and accurate research is imperative for developing up to date evidence-based education practices.

Programs and Interventions	27	Refers to specific programs and interventions available to schools and staff to assist in delivering a trauma-informed curriculum. This variable looks to understand how the complexity or type of program / documented intervention may impact the implementation, fidelity and sustainability of trauma-informed education.	In terms of programs and interventions there is no ‘one size fits all’ approach for students who have experienced trauma. Schools need to assess and analyse the needs of their school specifically looking at their cohort and clientele before seeking programs to implement at a whole school level. Herrenkohl et al. (2019) highlight that “any number of school-based programs have the potential to benefit children with an elevated risk for academic difficulties and mental health disorders, although questions remain as to which programs are most promising, effective, and sustainable” (p. 373). Individual interventions need to be designed with a student’s needs in mind, identifying strengths and targeting specific areas of learning and development. In addition, Collier-Meek et al. (2018) discuss that the complexity of a program or intervention (in relation to teacher capacity) impacts the likelihood of it being implemented with fidelity. They offer that if the balance of content complexity and capacity of the teacher are not managed the program or intervention will be less sustainable and less effective.
Cultural Complexities	22	Refers to both the sociocultural make-up of the school (including its customs and organisational structure) and the consideration given to the diverse cultural groups within the school and the specific needs of those communities.	Dorado et al. (2016) explain that students “come from diverse cultural groups that may experience different traumas and stressors, react to these adversities differently, and experience differences in how others respond to our traumatic experiences. When we are open to understanding the root causes of these differences and respond to them sensitively and with cultural humility, we make each other feel understood and equity is enhanced” (p. 167). In order to meet any cultural challenges, Anderson et al. (2015) suggest “developing a caring and collaborative culture where all students are fully included, and leadership is shared among school personnel” (p. 114). In addition, schools need to respond with “flexible pedagogy to meet a range of learning styles” (Blitz et al., 2016 p. 523).
Social Justice	18	Refers to the broader social systems that impact the implementation of trauma-informed practice. For instance, understanding how factors such as oppression, racism, and sexism impact education and the implementation of trauma-informed practice in schools.	Teachers need to be conscious of the roles that both disadvantage and disempowerment play in schools and how they are maintained through “disproportionate discipline” (Crosby et al., 2018 p. 16) policy. There is a long history in schools of students being blamed and punished for their reactions to circumstances that are out of their control (Crosby et al., 2018). Dorado et al. (2016) explain that “trauma involves a loss of power and control that can make us feel helpless and hopeless. When we are given meaningful opportunities to have voice and choice and our strengths are acknowledged and built upon, we feel empowered to advance growth and well-being for ourselves and others, and we can work together to forward the cause of social justice” (p. 167). Gherardi et al. (2020) detail what schools need to do “in order to meaningfully address the social justice implications of childhood trauma, we argue that trauma-sensitive schools must be contextualized, politicized, and rooted in transparency/mutuality with their community. Previous approaches to reform have sought to achieve these goals through promotion of pedagogy that actively seeks to counter social forces of marginalization as a pathway to student success, well-being and improved connections between schools and communities” (p. 13).
Policy & Law	21	Refers to the current Federal and State laws that impact schools and their ability to implement trauma-informed practice. Furthermore, it refers to the policies within schools and Departments of Education, that guide professional standards and best practice regarding student behaviour and classroom management.	School behaviour management policies tend to use a behaviourist approach to managing behaviour, a system of rewards and consequences that are intended to shape behaviour and encourage students to make appropriate choices. For students who have experienced trauma, this type of approach can be harmful and may re-traumatise the student as many of their escalations or incidents are reactions to stimuli that have triggered a programed response and not a choice (Crosby et al., 2018). Fondren et al. (2020) suggest that “at the administration level, examples of trauma-informed approaches include creating policies for how to handle disciplinary procedures for youth affected by trauma that are sensitive to their trauma exposure” (p.2). This may look like “replac[ing] exclusionary, deficit approaches with those that are informed by the science of trauma and recovery” (Thomas et al. 2019 p. 445) and addressing “the issue of adequate funding to support trauma-informed education is a systemic issue that needs attention at the national and state policy levels”. (Luthar & Mendes, 2020 p. 152)

