Developing Trauma Informed Pedagogy in a Year 2-3 Classroom: An Evaluation

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Abstract

Children who experience chronic stress or traumatization are vulnerable to becoming chronically hyper-vigilant and constantly alert to potential dangers, or dissociative and withdrawn. In schools, such children are physically present in class but have difficulty achieving a learning state receptive to new information. They may 'shut down' their environment or be highly reactive to environmental stimuli, frequently responding with aggression.

This paper reports on a project to support a Year 2-3 teacher to constructively respond to the needs of a class that included several chronically stressed and traumatized 6 to 8year-old children. The project was developed from a partnership between Salisbury Communities for Children, academic staff from the University of South Australia's School of Education, and a local primary school in South Australia. It aimed to provide resources to support the classroom teacher's capacity to create a safe learning environment and well-being for each student, despite the prevalence of chronic stress and trauma in many of their lives.

Strategies to improve the class learning environment included the provision of teacher professional learning about brain development and the emotional and behavioural impacts of chronic stress and trauma, attention to the room contents and layout, class activities and daily routines promoting cooperation with others and emotional understanding of self; opportunities for supported teacher reflection on practice; along with connection to relevant professional and service networks supporting children and families. The classroom teacher was assisted by an outreach worker from Salisbury Communities for Children funded under a pastoral care programme in schools. The worker's role included forging relationships with schools and communities and identifying resources to support children's improved capacity to learn at school.

Data collected included teacher and outreach worker interviews, children's knowledge of feeling words, reading and spelling achievements and sociometric spread across the school year.

Key Words: Trauma, stress, wellbeing, learning, pedagogy, children, school, early childhood

Introduction

Recognizing the importance of the early childhood years to later development, Australian state and federal governments have, over the past decade or so, increasingly focused on providing improved support for families with young children at home, in child care and at school. Early childhood is the period of most rapid brain growth, and recent neuro-developmental research has emphasised the significance of young children's daily environment in shaping biological pathways that set life trajectories for physical and mental health, learning and behaviour (Mustard 2008). Beyond the family context, schools provide the environments where children over five years of age spend most of their time. Children's ability to cope with the social, emotional and behavioural demands of schooling is thus significantly shaped by their experiences in the home and in the early years of school.

To the north of central Adelaide in South Australia, Salisbury Communities for Children (SC4C) was established in 2005 with funding from the then Australian Government Department of Family and Community Services, now the Department of Families and Communities, Housing and Indigenous Affairs (FAHCSIA). It aimed to support families with children in the first five years living in the eastern suburbs of Salisbury. The Socio Economic Index for Areas (SEIFA) scores based on Australian Bureau of Statistics 2006 Census data (AEDI 2010) for these suburbs range from 908 to 937, indicating that these suburbs are more disadvantaged than the average Australian suburb (SEIFA score 1000).

The Australian Early Development Index (AEDI) 2006 results for the Salisbury East area indicated that although about half the five-year-olds in that area were performing well in one or more developmental domains, 29% were developmentally vulnerable in one or more domains. To illustrate, as many as 13% were not doing well on measures of emotional maturity; that is they had trouble concentrating, managing their negative emotions and were not ready to help others. AEDI data collected for 2009-10 indicates similar outcomes.

In 2009 FaHCSIA funded SC4C to extend its support for children's development into the primary school years. Following consultations with primary school teachers and children (Diamond & Willoughby 2009), SC4C employed a children and families support coordinator to act as an outreach worker with counsellors, chaplains, Aboriginal liaisons and other school staff to create networks between agencies concerned with children and their families, and to provide holistic support in complex cases affecting children aged five to 12 years. As part of this initiative a year 2-3 class teacher at a primary school in the eastern Salisbury suburbs volunteered to participate in a project in partnership with the SC4C outreach worker. As part of the project the teacher learnt about young children's well-being, with a specific focus on the effects of stress and trauma, and implemented classroom pedagogical strategies to assist children's development and resilience. Two key programmes implemented were *Play is the Way* and *Kimochis*. These two programmes and other interventions were intended to shape the classroom culture to become more supportive of these vulnerable children.

Play is the Way is 'a cooperative physical games programme' in which 'children are required to work together towards positive collective outcomes' (Street, Hoppe, Kingsbury & Ma 2004, p. 97). The structured games and language aim to promote peer support, trust, respect and understanding by engaging children's emotions, and calling for mastery and control of those emotions for children to participate, be aware of others' needs and interests, and to co-operate to achieve success (McCaskill 2007). Support for the efficacy of this programme has come from Street et al.'s (2004) evaluation. The study found 'significantly improved pro-social behaviour in the school environment and general improvements in pro-social behaviour in the home environment'(p.97).

Kimochis aim to 'teach children to identify and express feelings in positive ways' and the contexts which give rise to those feelings (Kimochis 2011). The plush toy characters are used to introduce children to a wide range of words for expressing their feelings, and come with interactive storybooks to relate the characters' feelings to the events of the storyline.

The classroom's socio-emotional climate was tracked over the year using sociometry. Developed by Jacob Moreno (1989), sociometry can be described as a graphic representation of the social relations of individuals in a group It is made by drawing the structure of interpersonal relations in that group, as indicated by those individuals Surhone, Tennoe & Henssonow 2010). When employed on three occasions over a year, the development of children's social relationships within a group becomes evident.

The following section briefly reviews the research literature on children's exposure to stress and trauma, and its impact on their schooling experience.

Chronic Stress and Trauma, Academic and Social Learning

Definitions and sources of chronic stress and trauma in early childhood

The term 'chronic stress' refers to experiences giving rise to the presence of ongoing high levels of stress hormones such as cortisol. Stressors arising from negative family interactions, parental separation, family poverty, child neglect, family violence, parental chronic illness and substance abuse, neighbourhood violence, racism and discrimination threaten children's healthy emotional development (Seccombe 2002, Stien & Kendall 2004). These stressors are of particular concern when consistent nurturing and comforting responses are not provided by competent adults (National Scientific Council on the Developing Child 2005).

In this context, 'trauma' refers to a response to an overwhelming event or events where survival is threatened. Common contexts of trauma include family violence, rape and sexual abuse, vehicle crashes, serious illness diagnosis, or witnessing violence, injury, death or disaster (Stien & Kendall 2004). Traumatic stressors arising from deliberate violence, betrayal or neglect are likely to have more severe outcomes than do traumatic accidents or natural disasters (Courtois & Gold 2009). Experiencing or witnessing family violence (ie. domestic violence and child abuse) can cause major post-traumatic symptoms (Courtois & Gold 2009). It is estimated that one in four Australian children has witnessed violence against their mother (Indermaur 2001). The traumatic stress experienced by children in situations of domestic violence is often exacerbated by the compromised emotional state of a parent who cannot offer protection (van der Kolk 2005) and /or the betrayal involved when the traumatic experience is perpetrated by a trusted person (Levine & Kline 2007). Exposure to familial violence is usually characterised by repeated traumatic stress events over time. Complex trauma results from severe stressors that are (1) repetitive or prolonged, (2) involve harm or abandonment by caregivers or other ostensibly responsible adults, and (3) occur at developmentally vulnerable times in the victim's life, such as early childhood…(when critical periods of brain development are rapidly occurring or being consolidated)' (Ford & Courtois 2009, p. 13).

Effects of chronic stress and trauma on brain development and function

Chronic childhood stress and complex trauma impact on the development and function of the brain, affecting children's emotional, cognitive, social, physical and behavioural functions. Trauma in early childhood can 'change the structure and function of key neural networks, including those involved with regulating stress and arousal' (Ludy-Dobson & Perry 2010, p. 29). Trauma 'interfere (s) with normal patterns of experience-guided neurodevelopment by creating extreme and abnormal patterns

of neural and neuro-hormonal activity' (Perry 2009, p. 241).Continuing exposure to stressors creates chronic stress responses because the hippocampus, which normally operates to lower cortisol production, becomes damaged, allowing high cortisol levels to cause neural injury (Monk & Nelson 2002) and to threaten the development of cortical receptors (Gerhardt 2004). Significantly smaller hippocampuses have been found in adults with histories of early abuse (Bremmer 2008, p.26). Because the hippocampus normally supports the integration of memories in the context of time and space, dysfunction can result in inability to recall (Bremmer 2008, p.32). Other brain outcomes of complex childhood trauma include increased amygdala function, associated with amplified fear responses, and decreased medial prefrontal cortex function, associated with inability to turn off the fear response (Bremmer 2008).

When young children are exposed to chronically high stress environments, their use-dependent pathways become highly sensitive to detecting and responding to alarm stimuli (Gerhardt 2004; Monk & Nelson 2002). This focus on threat and survival means that when these children do not feel safe, effective learning of new information, like that presented at school, is diminished (Goswami 2008, p.44). Memory problems, including intrusive thoughts and a state of heightened arousal disrupt the "collaboration between the emotional and cognitive parts of the brain – the limbic system and the neo-cortex ….often lead[ing] children to develop an emotion-based coping style aimed at managing overwhelming feelings rather than thoughtfully tackling the challenges at hand" (Van der Kolk 1997 cited in Stien & Kendall 2004, p.75). The brain physiology responding to 'alarm' sensory inputs is mobilised when either the situation is traumatic or there is one or more trauma-associated triggers present. This survival response has priority over language, thinking and problem-solving areas of brain anatomy that normally regulate emotional expression (Stien & Kendall 2004, p.75). For children who have survived complex trauma, even minor stressors can be experienced as extremely stressful (Margolin & Vickerman 2007).

Effects of chronic stress and trauma on learning

The neuroscience of learning has established that school children who experience chronic stress or trauma have difficulties learning and integrating new information (Australian Childhood Foundation 2010). Traumatised children may experience new events or activities as threatening, and they may not feel safe enough to take in novel information such as new words. The hyper-arousal or dissociative states experienced by chronically traumatized children impede access to the brain pathways for cognition, language, reflection and abstraction (Streeck-Fischer & Van der Kolk 2000). Complex trauma is statistically related to problems with paying attention and maintaining focus (both necessary for information processing and learning) (van der Kolk 2005) memory loss (Abercrombie, Kalin, Thurow, Rosenkranz & Davidson 2003).

Social-emotional effects of chronic stress and trauma

Social-emotional outcomes of chronic stress and trauma include risky behaviours and relationship difficulties (Ko, Ford, Kassam-Adams, Berkowitz, Wilson, Wong, Brymer & Layne 2008), problems with emotional self-regulation, poor self-concept (e.g. shame and guilt), lack of behavioural self-control (e.g. aggression) mistrust in interpersonal relationships (van der Kolk 2005), and depression (Lueken & Lemery 2004). Trauma-based behaviours include internalising symptoms such as social withdrawal, pessimism about the future and anxiety, or externalising symptoms such as irritability, avoidance of stimuli associated with the trauma, and explosive outbursts (Stien & Kendall 2004). In the classroom context, as well as impacting on the traumatised child, these behaviours can negatively affect their peers. Self-management of emotions and impulses is a key component of successful social interaction (Cillessen & Bellmore 2004). Trauma-affected children can alter "the experience of the whole class group and change the shape of the school day" (Australian Childhood Foundation 2010,

p.64). As a result, traumatised children are likely to find it difficult to make friends. Because traumatized children find it hard to tolerate uncertainty and tend to avoid novel experiences and social contact, their exposure to new social expectations and cultural contexts is inhibited (Streeck-Fisher & Van der Kolk 2000, p.912), leaving gaps in their socialization.

In the primary school context, children who are identified as socially and emotionally vulnerable are at risk of being rejected by their peers (Laird, Jordan, Dodge, Pettit & Bates 2001). Peer acceptance in the primary-school years is related to later healthy psychological adjustment (Pederson, Vitaro, Barker & Anne 2007) and successful learning (Laird et al. 2001). Children rejected by peers in primary school are more likely than others to perform poorly at school; to avoid or drop out, become involved in substance abuse and delinquent behaviour in adolescence, and have mental health problems or criminal convictions in adulthood (Laird et al. 2001).

The potential of school-based interventions to support chronically stressed and traumatised children

Chronically stressed and traumatised children require environments tailored to meet their needs so they can develop new adaptive responses, which may enable them to become socially and academically competent. Teachers are instrumental in creating classroom environments to support children's learning and development. Therefore teachers must understand the difficulties faced by traumatised and chronically stressed children, and what can be done in the learning environment to support them. Assisting children to become aware of their emotional and physical states and to learn strategies to self-regulate when they are feeling stressed or reacting to past traumas, provides pathways to improved social and emotional well-being, and enables effective learning (McCaskill 2007).

Children who succeed in life despite adversity or stress are considered "resilient" (Naglieri & LeBuffe 2005). Resilience in childhood stems from warm, supportive, stimulating, trusting relationships with a competent adult such as a parent, grandparent, mentor, elder or teacher (Masten & Reed 2002), or with siblings or competent peers (Werner 2006). Children who have competent caring adults in their lives benefit from the healthy models of effective coping. Such adults act as knowledgeable guides by listening and assisting children to rise to challenges, solve problems, remain persistent, manage stress and succeed despite their life circumstances. Positive interactions with safe and familiar others help to regulate and repair stress response systems and trauma-associated difficulties (Ludy-Dobson & Perry 2010).

Masten, Herbers, Cutuli and Lafavor (2008, p.76) highlight the role of effective schools and teachers in supporting children's emotional resilience. The World Health Organisation (2010) recommends 'mental health promotional activities in schools', and the current Australian National Mental Health Plan (Commonwealth of Australia, 2009a) identifies as a key action, working "with schools…to deliver programmes to improve mental health literacy and enhance resilience".

The Review of Funding for Schooling in Australia commissioned by the Australian Commonwealth Government argued that "Australian schooling needs to lift the performance of students at all levels of achievement, particularly the lowest performers" (Gonski, Boston,Greiner, Lawrence, Scales & Tannock 2011, p. xxix). It recommended that "school leaders should … make local arrangements to respond to particular needs related to student welfare, mental health and school readiness, and work directly with local public or not-for-profit providers of human services more broadly" (p. 219).

The establishment by SC4C of an outreach worker in schools to work with staff, children and families has developed stronger links between schools and family support services in parts of Adelaide's northern suburbs. The partnership between the SC4C outreach worker and the year 2-3 classroom teacher in a local primary school aimed to support the well-being of children in that class. The strategy was evaluated by University of South Australia researchers to determine whether this approach could improve children's social relationships at school, their ability to identify their own and others' feelings and their subjective wellbeing, and if so, in what ways. The research investigated the extent to which this classroom programme improved children's social and emotional well-being in a school environment. Researchers also expected that student learning would improve if the social and emotional gains could be achieved. Using the sociometric tool, children were expected to make more friend choices and be chosen more often, with more mutual choices being made by the end of the year. Children were expected to know more words naming feelings after the implementation of the Kimochis programme than before, and to be reported as more cooperative in the classroom by their teacher after Play is the Way had been integrated into the teaching programme.

Research Design and Methodology

As was noted in the introduction, the research site had, in relation to other such sites, relatively lower socio-economic status and a higher level of developmental vulnerability across the population of children starting school. The class chosen for the project was a combined year 2/3 class of 27 children, aged from 6 years and 10 months to 8 years and 8 months. Nine children (33 %) were from families with English as a second language and one child was Aboriginal. Nine children (33%) had a chronic medical condition or disability. Eleven children (41%) were from low income families. All children participated in class activities.

Ethics approval for the project was obtained from the University of South Australia and the Department of Education and Child Development (DECD). Consent to collect data was obtained from the school principal, the teacher and parents of 19 children– nine from Year 2 and ten from Year 3.

The project activities involved classroom-based intervention by the teacher aimed at supporting children's well-being at school. The project focused on assisting children to recognize their own and other's feelings and to promote co-operative and safe interactions between students. Six strategies were implemented during the 2012 school year. These were:

- teacher professional development for the use of *Kimochi* (n.d.) and *Play is the Way* (McCaskill 2007) resources,
- implementation of *Play is the Way* and *Kimochi* resources to structure daily classroom activities,
- informing parents about *Play is the Way* and *Kimochi* resources and ways they can support children's social and emotional learning at home,
- teacher modelling emotional self-regulation using *Play is the Way* and *Kimochi* resources,
- teacher engagement in three reflective interviews focussed on the project's implementation, across the school year,
- Ongoing support for the teacher and children from the SC4C outreach worker, skilled in fostering social and emotional development in school contexts.

The strategies and selection of resources were developed by the class teacher, the school's counsellor and the outreach worker in consultation with the research team.

Project Implementation

The project was implemented in stages across the four term school year using a team approach involving the teacher, outreach worker and school counsellor and undergraduate teaching students. The outreach worker played a key role in sourcing materials, including *Play is the Way* and *Kimochis*, and providing support and training in their use to school staff, including the class teacher.

In the first term there were no active interventions, however an initial interview was conducted with the teacher by researcher. Early in Term 2, commencing the sociometric data collection, the teacher asked children to, *'Name three people in the class who are important to you'*. The same process was repeated in Term 3 and Term 4 to provide data on the children's social relationships in the class over time.

In Term 2, the structured games and language of *Play is the Way* were introduced in the selected class and across the school, with the support of the SC4C outreach worker and a pre-service early childhood educator. The initial presence of an additional support person when games were being introduced to the class allowed the establishment of the game activities to continue at the same time as following up students who became upset. The project team conducted an information night in Term 2 for the parents of children in the target class. The early evening event comprised a barbecue and opportunity for parents to engage in *Play is the Way* games with their children.

To obtain base line data before commencing implementation of the *Kimochis* resource, the teacher asked children at the end of Term 2 to write as many words naming feelings that they could think of. Then in Term 3 *Kimochi* resources were introduced to the class by the teacher with the support of the school counsellor and the SC4C outreach worker. Parents were invited with their children to another evening barbecue to engage with the *Kimochis* puppets and stories. In Term 4 the teacher again asked children to name as many feelings words that they could think of, providing data on the impact of the *Kimochis* resource on children's feelings vocabulary.

In Term 4 the outreach worker asked children to identify what was *'important to them at school'* to gain insights into what the children valued in their school experience. Teacher-collected data on student attendance, and reading and spelling levels were also provided to the researchers.

Data about the teacher's professional knowledge and reflections about implementation of classroom strategies were collected in four one hour interviews with one researcher, conducted at the end of each of the four terms. The SC4C outreach worker provided a reflective journal documenting his activities in the project process and was interviewed regarding his involvement in the project at the end of Term 4. One of the pre-service teaching students who assisted in implementing *Play is the Way* in this classroom also provided a reflection on her involvement.

Data were analysed using both qualitative and quantitative approaches to capture how the interventions impacted on the class social dynamics and the experiences of children, and on the teacher's understanding of his role. This paper presents results from the analysis of data from project staff and the participating children. Key themes from the teacher interviews are presented followed by reflections from a university student who supported the implementation of *Play is the Way* and the outreach worker who supported the teacher to implement changes. Data from the children includes analysis of class sociometrics, the numbers of feelings words children identify, children's attendance and reading records and responses to the question 'what is important to you at school?

Results

Data from Project Staff

Teacher interviews

The class teacher was interviewed in each term about his reflections on the project. Seven key themes emerged from the teacher interviews.

1. The importance of relationships between teachers and children:

'I have gone to students and … sat them down one-on-one and …asked them why, but if you don't have a …relationship at the start where they trust, they're not going to say it, yeah, so it is about getting to know the students individually.

So I … tend to think while I can't sit down and talk to a student like I would as a counsellor one-on-one, that's where like I do try and take in more of what they say, like in those little incidental conversations and stuff, to try and learn as much as I can about them in the time I've got and with what I've got, so yeah, I often sit with the kids like when they're eating their lunch and …talk to a few of them. When I do have to discipline I'm really mindful of repairing the relationship as well afterwards'.

2. The teacher interpreting behaviour as communication about the child's state and not a personal reaction:

'I know I've definitely shifted my thinking as a teacher, instead of sort of handing out consequences for poor behaviour, I ask them a lot more now about their choices and making good and bad choices, and understanding that a child who has or is experiencing trauma doesn't have the ability to … always line up the consequences about behaviour,'.

3. The teacher coaching children regarding their approach to life, taking into account the challenges they face:

'Definitely those who are experiencing difficulty in learning my big thing is instilling confidence in them that they can do it because, yeah, I'm a strong believer in your positive thinking will affect your ability to learn any confidence in something … positive thoughts often lead to positive results; negative thoughts, negative results, and … I believe it carries over into other areas of your life as well, so definitely if the child can believe they can do it, more than likely they'll try. If they can't at the moment they're giving up, but yeah, really trying to push them in a direction that If it is hard, well what can you do to get through it, and that comes down to that 'Be brave, give it a go, don't be scared if it's too hard'.

Yeah, and that's the big thing that we've talked about all year that if you run away from it, it will never get solved. If you confront it, be brave and sort of talk about it, try and work through the solution, like I can't promise it won't stop but you at least know what's causing it and how to maybe deal with it, rather than just running away and having it build up.(2:8)

4. The teacher modelling and supporting a classroom community, which develops trust:

'The thing that this group is good at is tolerance and understanding. They're very empathetic towards others if you explain to them what the problem is, and I guess that's … the teaching side of it…. If they don't know what the problem is, they don't understand it, therefore they're not empathetic, but if I can voice what some people are feeling and understanding, they're very good at coming up with solutions on how we can help other people. When I have challenged them to work with different people they've been fantastic every time. I guess it is just about teaching them those parts of society that makes us like get along and work together.'

'I've had to become more of a role model of the behaviour, like good and bad, like being able to be honest enough with this stuff, to acknowledge your mistakes. I guess it comes down to being brave yourself, putting yourself out there'.

5. Employing a whole school approach to create consistency, including a shared language, as the children progress through the school:

..it's definitely better with the whole school. I've noticed out in the yard, particularly with a lot of the younger students, I can ask them "Do you know the golden rule?" and because like they've seen the posters around the school and they say "Oh yeah, yeah, what is it?" and if they don't know it, somebody else does. So it helps with that language to solve problems out in the yard, and things like that. That is a pretty big bonus to having a whole-school approach to it'.

6. Teacher recognition that learning about empathy and tolerance requires active teaching:

'It's got to be something that's taught. It's a big thing, and I guess as I've matured as a teacher as well I do understand that it is something that needs to be taught. I remember when I first started I just expected that kids would know that, it was like the students will follow because I expect it. But now I've sort of learned … you do have to teach it and model it and you can't assume that every child comes from a background where it will be taught'.

7. The teacher being knowledgeable about the effects of stress and trauma:

'I did a Minds and Matters [course] where they did talk a lot about trauma and how that affects people's ability to concentrate and function, and therefore learn.

And then in [School Y], … we did a whole professional development day particularly on trauma. … I know [trauma has a] sustained, prolonged effect, … where the mind sort of can't switch off from that; they're still in that heightened state. So … without knowing all the jargon and everything behind it, I do believe I've got a pretty good basic understanding of what [trauma] is and how it affects people, which then does help me … day to day'.

Discussion

The interviews affirmed that the use of *Play is the Way* (McCaskill 2007) and *Kimochis* resources provided valuable pedagogical tools for implementing a social-emotional learning programme. The programmes provided language to describe key concepts so that they could be learned and discussed by the teacher and his class. Perry (2005, p. 4) suggests that there are certain developmental strengths

which may help children overcome some of the adverse effects of violence. The skills and attitudes include attachment, self-regulation, affiliation, attunement, tolerance and respect.

The teacher's interest in and commitment to the project was essential to sustaining classroom experiences that drew on these resources. Support from the school counsellor, and the SC4C outreach worker, along with undergraduate student input, meant that the teacher could implement the resources with back-up.

The teacher's willingness to reveal his feelings to the class and to model 'making good choices' meant that he positioned himself as a member of the class community. The teacher also shifted from simply handing out punishments for 'bad' behaviour, to inviting children to make choices about who they wanted to be in charge of their behaviour – themselves or the teacher. He coached them towards greater social and emotional competence.

Creating a community in the classroom meant that participants needed to become aware of the feelings and interests of others as well as themselves and to find ways to care for each other's feelings.

University student's reflection

In Term 2, a 4th year pre-service educator, with the class teacher's and the SC4C outreach worker's support, ran *Play is the Way* on Tuesday and Thursday mornings for five weeks. In her reflections on the successful implementation of *Play is the Way,* she noted that it was important to be familiar with and consistently use the language of the *Play is the Way* programme, and identified the importance of using children's names to address them directly and build relationships with them. She also acknowledged the support of school staff as important to the successful implementation. The student also reflected on how the programme impacted on children's behaviour:

> *"Children's behaviour became easier to control and they seemed to be connecting my instructions with the effectiveness of the game and the choices they were making. By the end of week 5, I was able to see a dramatic change in the children. Some children that would not participate in the beginning at all, went from being involved for 10 minutes, to participating in the whole session. It was quite a feeling of accomplishment as this is something the teacher and counsellor thought would not be possible for some of the children in the class."*

Outreach Worker Interview

The interview with the Outreach Worker identified 4 key themes:

1. Parents were willing to engage in positive activities with their child

   The teacher thought we won't get parents, we might get two or three, and then we had over 70 people… In the optional teacher interviews at the end of term 3, the rest of the school getting one or two parents and the teacher is getting over 15… The teacher said one of the things this has done for him is re-ignited his faith in parents wanting to be involved with their child's learning and he was starting to see that if we provide a learning environment the kids enjoy, where the kids flourish, then they'll share it with their parents and the kids acted as peer educators for their parents.

2. Supporting change takes time

..generally I would spend a good four to five hours a week with that class, so actually, sometimes it would be just sitting in on the class and just being there, and letting the teacher try new things, and therefore he had the confidence to do that. Sometimes it was actually being there at the start of the day or the end of the day and just talking to parents and building those relationships, which we found were pivotal when we came to the family nights.

3. Good relationships are the key to better outcomes

T started(at another) school, he was constantly suspended, constantly excluded, and when you look through his file one of the biggest things he's never been able to do is form a relationship with someone at school, so he's had no one to contact and want to go back to. What I highlighted to the teacher only last week was, you know, T has now been in the school three terms and this is the first time in his whole schooling life he's not even been suspended, so something is happening right for him, and one of the things I did very early on, probably about term 2 with the teacher, was I initiated the idea of him spending some of his NIT time with T one-on-one, doing some models up in the Tech Room, and the profound effect that had on building a relationship between the teacher and T. . T has Oppositional Defiance Disorder, his issues are not going to go away, but certainly we saw a great reduction in his defiance in the classroom, purely because he had that relationship with the teacher.

4. Structured resources enabled children to build better relationship skills

S for example, … high on the autism spectrum, she came at the start of this year, she's in year 3, had not been able to engage more than five minutes in her schooling life since she started, constantly leaving the classroom, constantly not wanting to be involved, would always say nobody wants to spend time to play with her, and we did the Play is the Way Program. For the first week S was really confronted by the idea that she had to become uncomfortable and try to solve a situation with her class, but by the third week S was choosing to engage, and we weren't having to sit on top of her, she was actually freely engaging. By the fifth week she'd chosen some people she could now play with and she was reporting that she was having friends play at recess and lunch, and then we looked at her sociogram. You'll see that she went from Term 1 where she couldn't identify anybody at all, to term 4 where she was writing extra numbers to add extra kids on the list.

Data from Participating Children

Children's Attendance

Children's school attendance was logged, with principal-approved exemptions included as attendances. The percentages of days each child attended school in term one and in term four were calculated. A paired samples t-test was conducted to test the hypothesis that the percentage of days children attend school would be greater in term 4 than in term 1. As expected, the percentage of days children attended school was greater in term 4 (M = 92.25, SD = 9.21) than in term 1 (M= 86.3, SD= 14.62), t(25)= -1.711, p= .0495 (one tailed).

Discussion.

Children's attendance did improve between terms one and terms four. However without comparative data (eg with the averages for year 3/4 classes in the state), we cannot suggest this result is an outcome of the TIC intervention. It is noteworthy however that the outreach worker and teacher both identified regular attendance by individual children who had previously had difficulties in sustaining school attendance.

Sociogram data

Children were asked by their teacher to 'name three people in the class who are important to you,' in Terms 2, 3 and 4. Table 1 records data from participants from Year 2 and Table 2 presents data from Year 3 research participants. The tables indicate how many classmates nominated each child in each term, and how many of these nominees mutually chose each other. Given that children were asked to nominate three others, the maximum possible number of mutual choice is three. To aid interpretation, symbols have been placed beside each name to indicate the direction of change over time. The 'equal' sign indicates no change. The 'minus' sign indicates a decline in the child's social network over time. The 'plus' sign denotes an increase in the child's social network over time, with two plus signs used to indicate the greatest positive changes.

Table 1: Year 2 sociometric data

Pseudonym	Term 2 chosen	Term 2 Mutual	Term 3 chosen	Term 3 Mutual	Term4 chosen	Term 4 Mutual
Fred =	1	0	1	0	1	0
John -	7	1	5	3	3	1
Sue -	3	0	Absent	-	0	0
Dean =	2	1	1	0	2	0
Steve +	0	0	1	1	1	1
Giles ++	3	0	5	2	4	3
Luke ++	1	0	2	1	7	3
Kev +	1	1	2	1	3	2
Tom =	0	0	0	0	1	0
Totals	18/9	3	17/9	8	22/9	10

Table 1 shows that the overall direction of change for Year Two participants was positive. Four of the nine Year Two children experienced positive change over the year, three children showed little change and two experienced a decline in networks over the year. In Term 2 the nine participants were chosen 18 times by other classmates, rising to 22 times by Term 4. Although this is a modest change in the number of times the children were chosen, the biggest difference is in the number of mutual relationships, which increased from three to ten. The two children who experienced the most positive change shifted from having no mutual relationships in Term 2 to the maximum of three mutual relationships by the end of the year. Three children had a friendship with a classmate at the start of Term 2, rising to five children with at least one friend in the class by Term 4. The increase in mutual relationships is evidence of more friendships being developed between children in the class.

Table 2: Year 3 sociometric data

Pseudonym	Term 2 chosen	Term 2 Mutual	Term 3 chosen	Term 3 Mutual	Term4 chosen	Term 4 Mutual
Ally +	0	0	1	0	2	1
Val +	2	0	1(absent)	0	3	1

Charles ++	**2**	**0**	**2**	**1**	**5**	**3**
Anne ++	**2**	**0**	**6**	**2**	**4**	**2**
Jill +	**1**	**1**	**2**	**2**	**3**	**2**
Bill +	**Not at school yet**	**-**	**2**	**0**	**2**	**2**
Sandra -	**5**	**3**	**2**	**2**	**1**	**1**
Helen ++	**1**	**0**	**4**	**3**	**3**	**2**
Tanya +	**2**	**0**	**4**	**2**	**4**	**1**
Vicki -	**2**	**1**	**1**	**0**	**1**	**0**
Totals	**17/9**	**5**	**25/10**	**12**	**28/10**	**15**
Year 2/3 TOTALS	**35/18**	**8**	**42/19**	**20**	**50/19**	**25**

Table 2 shows that again the overall direction of change was positive. Eight of the ten Year 3 students experienced positive changes in their social relationships and two showed a decline in their social network. In Term 2 nine participants received 17 nominations by their classmates, rising to 28 nominations for ten children in Term 4. As with Year 2 students, there was an impressive gain in the number of mutual relationships developed across the year, rising from 5 to 15. Three of the ten Year 3 children had a mutual relationship at the start of Term 2, rising to nine out of ten by Term 4.

When the totals for Year 2 and 3 students are combined, the number of mutual relationships increases from 8 to 25. Across the class, six of the 19 participants had a mutual relationship in Term 2 rising to 14 with at least one mutual relationship by Term 4.

Discussion

The data show that the number of mutual friendships had increased by just over 200 per cent over the three terms of intervention activities. It is however concerning that five participants finished the year with no mutual relationships in the class, and most of these did not have any mutual relationships during the year. The data suggests that year 3 students were more successful in improving their social relationships than Year 2 students. This may be a feature of their age and development and longer experience in the school environment.

Numbers of feeling words before and after Kimochis intervention

Before the *Kimochis* intervention, the children produced between 4 and 11 feeling words. After the intervention the children produced between 5 and 22 feeling words.

A paired samples *t*-test was conducted to test whether children would score higher on the number of feelings words after the *Kimochis* intervention than they did before. As expected, children provided significantly more feelings words after the *Kimochis* intervention (M= 11.33, SD= 4.94) than before (M = 6.75, SD = 2.22), $t(11) = -3.298$, $p = .004$ (one tailed), showing that the intervention significantly improved their knowledge of feeling words.

Discussion

As the children produced significantly more feelings words after the *Kimochis* intervention we can infer that the *Kimochis* interventions improved the children's emotional literacy, as measured by number of feeling words recalled. However the intervention appears to have been more effective for some children than for others.

In the terms 3 and 4 interviews, the class teacher noted that after the *Kimochis* implementation children were more able to discuss their feelings and resolve interpersonal conflict through discussion than previously.

What is important for the children at school

In Term 4 the children were individually asked by the outreach worker 'What is important to you at school?' The question sought to provide insights about what the children valued at school. Twenty-five anonymous responses were recorded and are summarised in Table 3.

Table 3: What is Important to the Children At School

Important to Child	Number	Per Cent
Specific Curricular activities	8	33
Play and Sport Activities	7	28
Friends	6	25
'Makes me feel brave'	2	8
Shady Trees	1	4
'Not getting into trouble'	1	4
Total	25	100

The most common single response was 'friends', which was nominated by six children. Eight children nominated various academic activities. Two liked maths, two liked science, two liked reading, one liked painting and the other liked writing. Sport and play activities were named by seven children. Two liked the playground, two liked football, and other single nominations were variously the sports-shed, the sandpit and basketball. One child liked the shady trees at the school. Two children said school made them feel brave and one child liked 'not getting into trouble'.

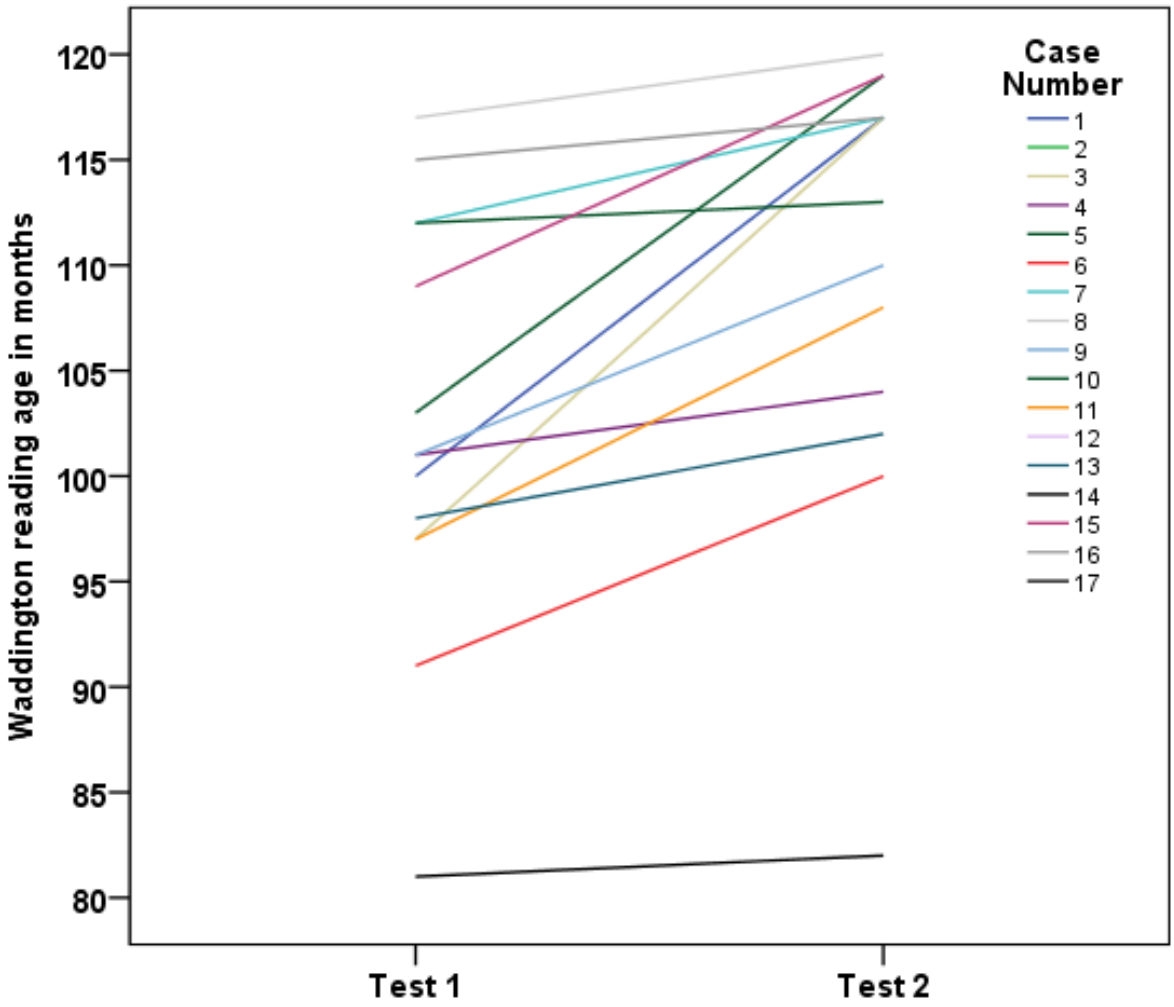
Discussion

The children's responses reveal that classroom based activities, play and sport activities and friends were the three most highly valued aspects of school. It is interesting that two children said that feeling 'brave' was important to them at school. 'Brave' is a word prominent in both the *Kimochi*s resource and *Play is the Way* activities, with emphases on trying new things and being willing to take a risk. It's use by children in the class is evidence of their awareness and use of a feelings vocabulary.

Children's Reading Achievement

Using Waddington's Reading Test, children's reading ages in term one ranged from 81 months to 117 months, and in term 4 ranged from 82 months to 120 months. Data for individual children's reading ages from the Waddington's Reading Test are displayed in Figure 1 below.

Figure 1. Line graph showing changes in individual children's reading ages across the year.



A paired samples t-test was conducted to test the hypothesis that children's reading ages increased on average across the school year. As expected, children's reading ages, as measured by the Waddington's Reading Test, were significantly higher in term four (M=110.36, SD=10.57) than in term one (M=102.43, SD=9.91), t (13) = -4.723, p<.001 (one tailed).

A Pearson Correlation was conducted to test the hypothesis that there is a positive relationship between individual children's reading ages in term one and in term four. As predicted, individuals' reading ages in term one were found to be significantly positively related to reading ages in term four, r(12) = .81, p<.001 (one tailed).

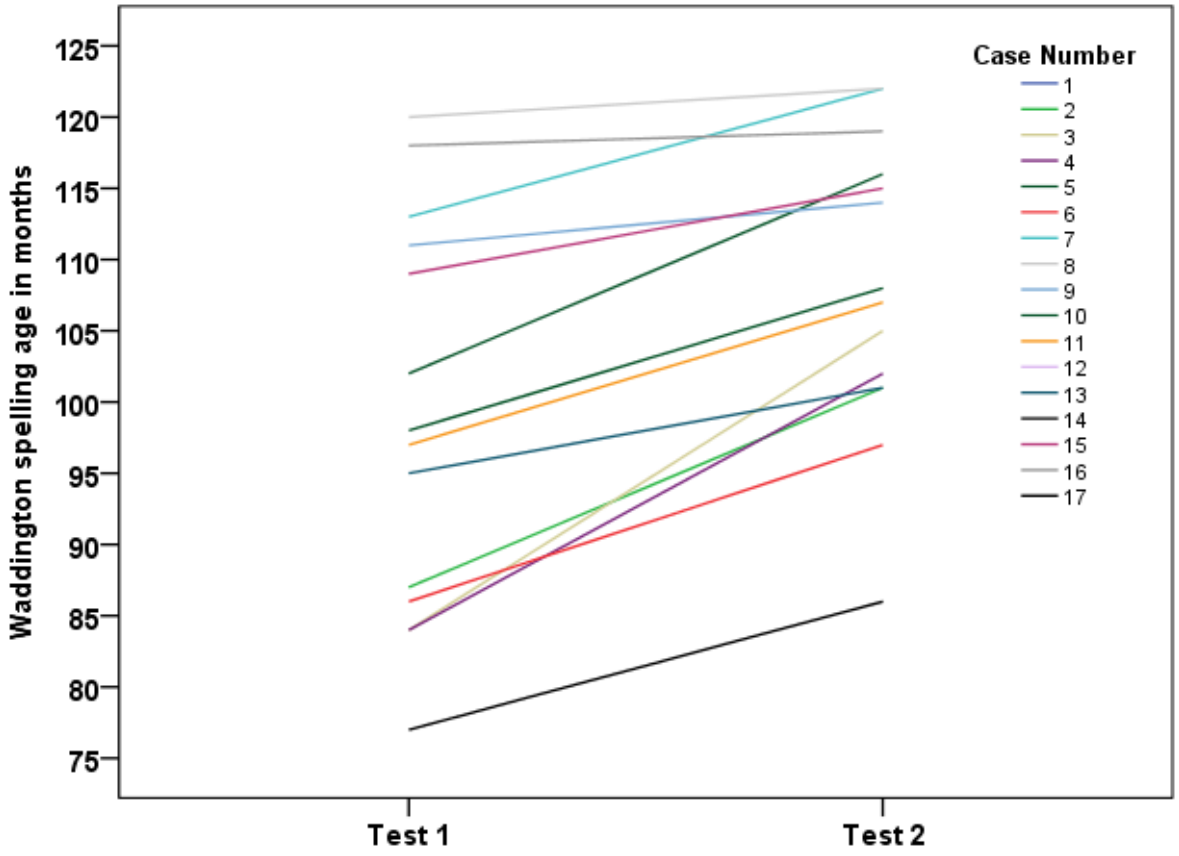
Discrepancy scores for the reading age data were computed by calculating the number of months each child's score differed from the expected reading age for that child's chronological age, as provided in Waddington's standardised conversion table. Discrepancy reading age scores ranged from -18 months to +22 months in term one, and from -27 months to +24 months in term four.

A paired samples t-test was conducted to explore whether children's discrepancy scores for the Waddington's Reading Test changed across the school year. Children's discrepancy scores were neither significantly higher nor lower on the Waddington's Reading Test in term four (M=7.29, SD=13.9) than in term one (M=9.36, SD=11.69), t (13) =1.234, p=.239.

Children's Spelling Achievement

Using Waddington's Spelling Test, children's spelling ages in term one ranged from 84 months to 120 months, and in term four ranged from 86 months to 122 months. Data for individual children's spelling ages from the Waddington's Spelling Test are displayed in Figure 2 below.

Figure 2. Line graph showing changes in individual children's spelling ages across the year.



A paired samples t-test was conducted to test the hypothesis that children's spelling ages increased on average across the school year. As expected, children's spelling ages, as measured by the Waddington's Spelling Test, were significantly higher in term four (M=108.21, SD=10.42) than in term one (M=98.64, SD=13.92, t (13) = -6.132, p<.001 (one tailed).

A Pearson Correlation was conducted to test the hypothesis that there is a positive relationship between individual children's spelling ages in term one and in term four. As predicted, individuals' spelling ages in term one were found to be significantly positively related to spelling ages in term four, r(12) = .93, p<.001 (one tailed).

Discrepancy scores for the spelling age data were computed by calculating the number of months each child's score differed from the expected spelling age for that child's chronological age, as provided in Waddington's standardised conversion table. Discrepancy spelling age scores ranged from -22 months to +21 months in term one, and from -23 months to +20 months in term four.

A paired samples t-test was conducted to explore whether children's discrepancy scores for the Waddington's Reading Test changed across the school year. As expected, children's discrepancy

scores were neither significantly higher nor lower on the Waddington's Spelling Test in term four (M=5.36, SD=12.11) than in term one (M=5.07, SD=12.53), t (13) = -.162, p=.874.

Discussion

Results on the children's academic achievement across the year as measured by Waddington's Reading and Spelling Tests, indicate that whilst individual children's progress varied, all children made some reading and spelling progress.

The results for the t-tests of difference between reading and spelling discrepancy scores indicate that the focus on the children's social and emotional development did not adversely impact on the reading and spelling learning outcomes of the class as a whole.

The increase in the range of discrepancy scores, indicates that while some children are forging ahead, others are falling further behind age-mates in their literacy learning. Whilst this result is disappointing and of tremendous concern, it is unsurprising international findings of widening differences in academic achievements as children progress through school (Arnold & Doctoroff 2003; Siraj-Blatchford, Mayo, Melhuish, Taggart, Sammons & Sylva 2011). Results for South Australia also show mean reading score differences between children of parents with high education levels (Bachelor degree or above) and children of parents who had not completed high school increased from year three to year five (National Assessment Program Literacy and Numeracy Achievement 2012, p. 9 and p.73). Such widening trajectories have been explained by Hart and Risley (1995) who found that the number of words and how they were used in interactions between toddler-aged children and their parents, were the best predictors of not only early language development, but also academic competence in the school years. The strong correlations between individual children's scores in terms one and two strengthen an argument that individual children are following trajectories largely set through language input before school entry.

We have no evidence however that the TIC interventions improve academic outcomes. However we argue that improved attendance along with emotional readiness to learn would set the stage for learning over the next years. We also recommend that TIC be combined with the school's engagement with families in the preschool years to prevent 'the early catastrophe' (Hart & Risley 2003, p. 110) of poor language development, and reading remediation where needed.

Conclusion

The data thus far provide promising indicators of positive change in participating children's social relationships at school and their ability to identify their own and other's feelings. Given that social withdrawal, lack of trust and inability to identify feelings are some common consequences of chronic stress and trauma, these positive changes can be recognised as indicators of increasing well-being for children in the classroom.

The selected resources, *Play is the Way* and *Kimochis*, provided effective tools to promoting improved social relationships and a wider vocabulary of feelings words which children used to relate to their own and other's experiences. A whole of school approach and assistance with implementation of the resources proved important to successfully embedding the programmes in classroom activities.

The teacher's strategies of forming and sustaining individual relationships with children in the class, of leading and modelling a sense of community and revealing and modelling his own management of his feelings, enabled children to develop a sense of trust, of being valued and able to contribute to

their classroom community. Again these strategies addressed some of the negative consequences of chronic stress and trauma which include difficulty trusting others, low self-esteem and a sense of loss of control.

A limitation of the research design was the absence of a 'control' class in the school against which to compare outcomes. This was not possible as the school had a single Year 2/3 class and comparison with a Year 2/3 class at another school would be limited by variations between the schools and their communities. This project should therefore be read as a case study of a series of classroom-based interventions which could inform further research.

Given the complexity of contemporary classrooms and the widespread incidence of chronic stress and trauma in children's lives, inclusive classroom-based interventions involving daily routines and activities offer an effective avenue for supporting children's social and emotional development and recovery. The potential benefits flow to individual children and their families, teachers, school staff and the wider community as children change from being isolated, unhappy and 'in trouble' to becoming valued members of the communities which they help to create.

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