Beyond Teacher Praise: Evaluating Tootling as an Inclusive Intervention for Academically Engaged Behaviour in Aotearoa New Zealand Primary Classrooms.

by

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Abstract

This thesis reports on two single case experimental studies investigating the effects of a peer-mediated behaviour intervention, known as “Tootling ”, on student behaviour in Aotearoa New Zealand primary schools. Tootling involves students recognising prosocial behaviours performed by their peers and reporting these events as “tootles” which are then read aloud to the class by the teacher. The studies aimed to evaluate whether Tootling increased academically engaged behaviour (AEB) at both, class-wide level, and for individual target students who have shown high rates of disruptive behaviours. Secondary questions examined whether Tootling influenced teacher-delivered praise and reprimands, teacher indices of happiness (IoH), and patterns in tootle submissions, including the focus of tootles on prosocial behaviours and school values. The intervention was implemented within the Positive Behaviour for Learning (PB4L) framework, supporting alignment with the school’s values-based systems.

This research sought to address several gaps in the literature by examining the effects of Tootling across two culturally inclusive classroom settings in Aotearoa New Zealand. Study 1, conducted in a Year 0–1 classroom, with four target students, employed an A-B research design due to contextual factors. Study 2, conducted in a Year 5–6 classroom with three target students, used a multiple treatment single-case design to examine Tootling alone and in combination with a values-specific focus (respect, responsibility, resilience). Data on AEB, teacher praise and reprimands, IoH, and student tootle submissions were collected using direct observation and integrity measures.

Results demonstrated consistent increases in class-wide AEB across both classrooms, with the largest gains observed for target students identified as having low initial rates of academic engagement. Teacher praise and IoH showed variable but generally positive effects. Patterns of tootling submissions highlighted that students engaged actively in recording and acknowledging prosocial behaviours, linked to school values. The values-specific conditions in Study 2 also produced increases in tootles on the targeted value (respect, responsibility and resilience).

Overall, findings suggest that Tootling is a practical, effective, and socially valid whole-class intervention, with strong potential for integration within PB4L frameworks in Aotearoa New Zealand schools.

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Introduction

In March 2024, the *Education Review Office – Te Tari Arotake Mātauranga (*ERO) released an evaluation report on the state of behaviour in Aotearoa New Zealand schools (ERO, 2024b). The report revealed that rates of challenging behaviour in Aotearoa New Zealand classrooms have been consistently the highest in the OECD for the past two decades (OECD, 2023). Teachers reported a worsening trend, with 50% of teachers indicating that they had witnessed student disruptive behaviour during every lesson. When examining student behaviour globally, data from the National Center for Education Statistics (NCES) found 32% of U.S. teachers reported that student misbehaviour interfered with their teaching (Aloe et al., 2014; NCES, 2023). Similar observations were discussed by Aloe et al. (2014). The ERO report further identified strong links between high rates of challenging behaviour and lower levels of student-engagement, academic achievement, and enjoyment of school. Key findings also highlighted links with increased teacher burnout, and negative life outcomes for students who had been excluded due to challenging behaviours (ERO, 2024b).

Impact on the Student

Student academic achievement is increasingly being impacted by student disruptive behaviours. Approximately 27-28% of all 15-year-old students surveyed in both Aotearoa New Zealand and Australia reported difficulties concentrating in mathematics class due to noise and disruptive behaviours (OECD, 2023; ER0, 2024a). In addition, 47% of Aotearoa New Zealand teachers stated that they spent at least 40-50 minutes each day responding to challenging behaviours, acknowledging that this time was taken away from student learning (ERO, 2024a). Consequently, 75% of Aotearoa New Zealand teachers believe that their students' academic progress is being negatively affected due to these actions (ERO, 2024b). Data from Programme for International Student Assessment (PISA) 2022 show a consistent decline in mathematics, reading and science achievement over the past 20 years, corresponding with rising rates of challenging behaviours (ERO, 2024b; OECD, 2023). A clear correlation was observed, with students in the most well-behaved

mathematics classes achieving significantly higher scores than their peers, while students in the most disruptive classes achieved the lowest outcomes (OECD, 2023).

Additionally, 58% of Aotearoa New Zealand teachers reported that disruptive classroom environments could negatively affect student enjoyment of school (ERO, 2024a, b). Principals similarly observed a link between reduced school enjoyment and increased rates of absenteeism. High levels of absenteeism, in turn, have been associated with lower academic achievement OECD (2023). Although no specific data is given, ERO (2024a, b) emphasised the importance of enhancing students' sense of belonging, while building strong relationships, in improving overall student behaviour.

On occasion, a student's challenging behaviour may escalate to the point where the principal may need to issue, at minimum, a stand-down. This results in the student being either removed from class, or from the school entirely, for an extended period of time, and sometimes permanently. (Ministry of Education [MoE], 2024). ERO (2024b) identified several long-term consequences associated with these disciplinary actions. Students who experienced three or more stand-downs were found to be significantly less likely to achieve NCEA Level 2, a key qualification in Year 12, compared to their counterparts (22% versus 73%). Higher rates of unemployment, low-income, Emergency Department admissions, and offending were also linked to stand-downs, with risks increasing when the first stand-down occurred at a younger age (ERO, 2024b).

Impact on the Teacher

Aloe et al. (2014) categorised teacher burnout into three dimensions: emotional exhaustion, depersonalisation, and personal accomplishment. They conducted a multi-variate meta-analysis to explore the relationship between student misbehaviour and these dimensions. Student misbehaviour was found to have the largest effect on the teacher burnout dimension of emotional exhaustion, but also showed a significant positive relationship with depersonalisation, and a negative relationship with personal accomplishment. Meaning that as misbehaviour increased, teachers' sense of personal accomplishment decreased. ERO (2024b) supported these observations, reporting

that challenging student behaviours negatively impact teachers' mental- and physical-health. The majority of surveyed teachers indicated that managing students' challenging behaviours was one of the principal stressors in their role. Furthermore, teacher burnout is identified as a key factor contributing to high rates of teacher attrition (Kollerová et al., 2023; Skaalvik et al, 2021), with ERO (2024b) reporting that 50% of teachers stated that dealing with challenging behaviour considerably impacted their intention to leave the profession.

Literature Review

Evolution of Behaviour Management

How to manage challenging student behaviour has been the topic of discussion by educators for over two millennia (Harris, 1928). In Ancient Greece, Aristophanes praised teachers who flogged their misbehaving pupils (Compayre, 1885); while Plato countered that a mind forced to learn against their will would never retain the knowledge, instead, proposing that students must be taught gently (Harris, 1928). A combination of corporal punishment and shame-based, punitive systems were regularly utilized by educators for most of recorded history, with corporal punishment only beginning to fall out of favour in the mid Twentieth century (Barclay, 1977; Mirams, 1955; Travers, 1980). However, corporal punishment remained legally permitted in Aotearoa New Zealand into the 1980s (Human Rights Commission, 1985) and is still lawful today in 19 states in the United States of America (National Education Association, 2024).

Shame-based disciplinary practises have evolved over the centuries. Historically it was common to force "misbehaving" students to wear a "dunce cap", stand isolated in a corner, or endure public verbal ridicule (Stearns & Stearns, 2016; Travers, 1980). Although less overt today, some teachers still employ forms of shame-based discipline. For example, a common practise in the United Kingdom is to use a "behaviour ladder", whereby students' names are publicly posted on a scale from Green (exceptional behaviour, resulting in ClassDojo points) down to red (worse behaviour, resulting in incidents logged onto the school management system) (Downsell Primary School, 2024). Depending on a student's behaviour, throughout the day, their name is moved up or

down the ladder. Although this system incorporates an element of positive reinforcement, the public posting of students' misbehaviours may negatively impact their peer perception.

Positive Behavioural Support Frameworks

PBS, PBIS and PB4L-SW

In 2011, the New Zealand Government introduced the Positive Behaviour for Learning (PB4L) initiative. A collection of frameworks, programmes, and resources designed to support whānau and schools in improving the behaviour and well-being of children and young adults (MOE, n.d.-b). The PB4L "suite" developed by the MoE (n.d.-e) includes: PB4l – School-Wide (PB4L-SW); PB4L – Restorative Practice; and Incredible Years programmes, which assist both parents and teachers to reduce challenging behaviours and promote self-control and social skills in children aged three to eight years (Moe, n.d.-b, d).

PB4L-SW is based on the internationally successful Positive Behavioral Interventions and Supports (PBIS) framework, first developed in the United States during the mid-1990s (Elder & Prochnow, 2016; MoE, 2015a). PBIS itself traces its origins to Positive Behavior Support (PBS), which emerged approximately a decade earlier. All three frameworks were developed as proactive responses to the negative consequences of shame-based and punitive behaviour management systems, emphasising the promotion of positive behaviours through environmental, systemic, and instructional changes (Boyd et al., 2015; Hieneman et al., 2005; Sugai et al., 2000; MoE, 2015a). Central to the success of these frameworks is their grounding in Applied Behaviour Analysis (ABA) practises, which focus on understanding the functional relationship between behaviour and environmental events. They aim to teach prosocial behaviours and decrease maladaptive behaviours through assessment-based, empirically validated strategies (Elder & Prochnow, 2016; Skinner, 1968).

Building on this foundation, PB4L-SW provides a structured, three-tiered framework to support all students (Savage et al., 2011). The primary tier targets the entire student population, teaching and reinforcing behavioural expectations through consistent school-wide initiatives (MoE, 2015a). Approximately 15% of students who do not respond adequately to primary interventions

receive secondary tier supports, typically involving small-group instruction targeting specific social skills or behavioural competencies (Lane et al., 2013; MoE, 2015b). Finally, tertiary tier interventions are reserved for approximately 1–5% of students with the most significant behavioural challenges. These supports are highly individualised and are informed by functional behaviour assessments (FBAs) (Lane et al., 2013; MoE, 2015b). Importantly, PB4L-SW is not a categorical system, nor does it rely on diagnostic labelling. Instead, movement between tiers is based on responsiveness to prior interventions. For example, Tier 3 supports are provided when students do not respond adequately to Tier 1 and Tier 2. This structure is designed to ensure that most students remain in Tier 1 most of the time, with the need for Tier 2 or Tier 3 support being typically transient (Savage et al., 2011; MoE, 2015a).

Values-Based Approaches

An integral component of PB4L-SW's success in Aotearoa New Zealand is its recognition of the importance of cultural responsiveness (MoE, 2015a, b). PB4L initiatives such as Restorative Practice emphasise relational approaches rooted in values of dignity, equality, *mana* (authority, prestige, and spiritual power recognised by others), and potential (MoE, 2011). Culturally responsive practices involve incorporating Kaupapa Māori principles such as *Manaakitanga* (hospitality, kindness, and respect), *Whanaungatanga* (relationships), *Kotahitanga* (unity, togetherness), *Aumangea* (resilience and determination), and *Ako* (reciprocal teaching and learning) into classroom practices (Bishop & Berryman, 2009; Macfarlane et al., 2007; MoE, 2007, n.d.-a, e). These principles aim to foster whanau-type relationships and strengthen connections within the education setting and wider community, enhancing both behavioural and academic outcomes (MoE, 2025).

Many schools create their own school-values, tailored to the needs of their students and reflective of the values prioritised by their whānau (families) (MoE, n.d.-b, -e). These school-values become an integral part of their school culture, often represented through visual materials such as posters, reinforcements, and mascots which reflect their school's identity. For example, Te Awamutu Primary School, a large urban primary school, has created "Manaaki", a school guardian mascot

around which they base their positive behaviour programme (Te Awamutu Primary School [TAPS], 2025). Students are awarded "Manaaki high-flyers" for being caught demonstrating school values. Visual representations throughout the school prominently feature Manaaki, and, with values displayed in both English and Te Reo Māori to continue to promote inclusivity and bi-cultural practices (TAPS, 2025). Another example of a school embedding their school values and virtues into everyday practices is Marotiri School, a small rural primary school. They celebrate their Rock-SOLID learners, linking to the local volcanic landscape (Marotiri School, n.d.). In their school grounds, they have erected five boulders, each etched with one of their core school values, allowing students to physically interact with, and reflect on, their values daily during play.

Building a Positive Classroom Culture

Fostering a positive and strong classroom culture is just as essential as nurturing a school-wide culture. A classroom where every student feels included, valued, supported to be their authentic self, encouraged to take risks and unafraid of failure is considered an inclusive space (MoE, 2025a). In Aotearoa New Zealand, teachers are encouraged to build strong relationships with each child and their whānau, value the individual strengths and backgrounds of every student, plan for everyone to participate, aim for success, and ensure a respectful environment (MoE, 2025b). Both the United Kingdom and Aotearoa New Zealand preschool curriculums have objectives based around fostering positive relationships (Aoki, 2024). The United Kingdom's Department of Education (2024) focuses on developing positive friendships at the Early Years Foundation Stage, while Aotearoa New Zeeland's Te Whāriki focuses on developing empathy, "having regard" for friends, and strengthening social skills (MoE, 2017). Although the New Zealand Curriculum [NZC] (MoE, 2007) does not specifically demand the development of social skills as a learning objective, they do encourage students to develop key competencies, including "relating to others" and "participating and contributing". Not only is a positive classroom environment essential for children to thrive and learn, but it is just as important for the teacher. Studies have found that poor classroom climate negatively

affect teacher well-being, increase emotional exhaustion, decrease self-esteem, and develop negative attitudes about students (Whitefield et al., 2024).

Classroom climate is understood as the perceived social-emotional quality of the classroom environment (Doll & Dooley, 2021). Empirical evidence supports the theory that a positive classroom climate will affect students' sense of belonging, self-efficacy, academic outcomes and behaviour (Bishop & Berryman, 2009; MoE, 2015a). McMahon et al. (2009) undertook a longitudinal study on 149 fourth and fifth graders, examining class climate and sense of belonging in relation to their confidence in different school subjects. Results showed a strong positive correlation between both classroom climate and sense of belonging on self-efficacy in several school subjects, noting a stronger effect from sense of belonging (McMahon et al., 2009). Similarly, an investigation undertaken by Erasmus et al. (2022) found a strong relationship between a positive classroom climate, and higher levels of Emotional Intelligence. Additionally, they observed that Emotional Intelligence correlated negatively with Friction, Competitiveness, and Difficulty, while Satisfaction and Cohesiveness correlated positively (Erasmus et al., 2022), suggesting that a positive classroom climate would show high levels of happiness and togetherness. Both variables are promoted through PB4L-SW. Barth et al., (2024) observed that peers were found to strongly influence their classmates' behaviours. Results from their longitudinal study, which examined 65 classes, across 17 schools, found that students who were placed in a class with lower-academic outcomes, and/or high rates of disruptive behaviour, had a higher likelihood of developing corresponding academic or behavioural outcomes over time. Although these studies have shown strong relationships between classroom climate and personal behaviours, self-confidence, emotional intelligence etc., two meta-analyses undertaken by Erdam and Kaya (2023) and Korpershoek et al. (2019) both found only small positive effects between classroom climate and academic outcomes.

Measuring Classroom Climate

There are a multitude of assessments used to measure classroom climate. The My Classroom Inventory (MCI; 38-items) and its short form adaption (MCI-SF; 25-items) measure five

aspects of classroom environment: “satisfaction within the class”, “peer friction”, “peer competitiveness”, “difficulty of the work”, and “class cohesiveness”. Students responded “yes” or “no” to each item, with higher total scores indicating a more positive classroom climate (Erasmus et al., 2022; McMahon et al., 2009; Sink & Spencer, 2005). The MCI developed from the earlier Learning Environment Inventory (LEI), which was aimed at measuring high-school students’ perception of their schooling environment (Fraser et al, 1982). It measures 15 climate dimensions, including the five measured in the MCI, additionally it measures “Diversity”, “formality”, “speed” (subject progression), “material environment”, “favouritism”, “goal direction”, “apathy”, “democracy”, “clique-ness”, and “disorganisation”. Students respond on a 4-point Likert scale, ranging from “strongly disagree” to “strongly agree” (Fraser et al., 1982).

An interesting alternative to quantitative measures, is a creative qualitative form involving students drawing pictorial representations of their classroom (Farmer et al., 2018; Kuzle et al., 2023; Zee et al., 2020). For example, Farmer et al. (2018) prompted 439 second- to fifth-grade students to imagine they had a camera and took a photo of their classroom on a typical day, and to draw this scene. On the back of the piece of paper, all students were encouraged to write (or dictate) a description of what was happening in the picture. Farmer et al. (2018) developed quantitative codes and performed both inductive qualitative- and quantitative analyses to analyse the pictures. The researchers examined the centricity (i.e. teacher-, student-, community-centric), affect (positive, negative or neutral), focus (academic, non-academic, behavioural, etc.), and engagement (active vs. passive). They found that most pictures showed positive or neutral affect, with positive affect pictures depicting academic-centric representation, whereas neutral affect were correlated with an object-focus. Farmer et al. (2018) noted that unlike interviews or surveys, a drawing assessment required only pencil and paper and can be completed by all students simultaneously. Making it a more feasible and time-efficient option in the classroom setting. Limitations included that not all students understood the concept of “typical day”, instead they often drew a memorable (either negative or positive) moment in class. Additionally, Farmer et al. (2018) found that, depending on

the child's drawing ability, some students' pictures were affected by a time-limit. Overall, they found this drawing task a useful tool to assist teachers in examining their students' perception of classroom climate.

The perception of student happiness has been widely recognised as a meaningful indicator of positive classroom climate. Several tools have been developed to assess this, including the Oxford Happiness Questionnaire (Hills & Argyle,2002), Subjective Happiness Scale (Lyubomirsky & Lepper, 1999) and School Children's Happiness Inventory (Telef, 2014), each of which has been applied in educational settings to measure student emotional well-being and satisfaction.

Indices of Happiness (IoH) were first developed by Green and Reid (1996) to evaluate the perceived effectiveness or appeal of different objects, events or environments for individuals with multiple disabilities. They created an operational definition of happiness and unhappiness based on non-verbal cues, such as "any facial expression or vocalization typically considered to be an indicator of happiness (or unhappiness) among people without disabilities" (Green & Reid, 1996, p.69).

To assess IoH, investigators typically employed A-B or ABAB reversal designs, within which they measured individuals' behavioural responses (e.g., smiling, laughing, or other operationally defined indicators) to specific stimuli (Green & Reid, 1996; Ivancic et al., 1997; Lancioni et al., 2005). Green and Reid (1996) noted that some individuals with disorders such as autism spectrum disorder (ASD), do not always display typical mood indicators. Nonetheless, IoH proved to be effective in predicting the individuals' perception of events or environments.

Building on this, Agarwal and Raney (2023) conducted a study involving three autistic preschoolers. Teachers and parents first completed an IoH questionnaire to define each child's happiness and unhappiness indicators and to specify situations in which those behaviours were most likely to occur. The researchers then conducted informal observations to operationally define each student's unique indices of happiness and unhappiness. Agarwal and Raney (2023) then created individualised "happy" and "unhappy" sessions, (based on results from the IoH-questionnaire) to validate the mood indicators. Finally, "choice comparison" sessions were

conducted as a secondary validation. During these sessions students were presented with pictures of their individual happy and unhappy situations. Following the student's selection, they were given access to their choice for 5-minutes. Interobserver agreement procedures were used to ensure treatment reliability. All three participants showed higher rates of happiness, and lower rates of unhappiness during their "happy" sessions, indicating that IoH assessment was effective in observing child happiness. This process demonstrated that IoH procedures could be individualised for young autistic learners, highlighting its adaptability across diverse populations.

To date, there have been no published studies applying direct observation of IoH in general education classroom settings. Although not designed as a classroom climate measure, IoH merits mention here due to its focus on observable affective responding, and its potential relevance to the social-emotional dimensions of classroom climate. Its procedures are also comparatively low-intrusion and time-efficient, features that make it an attractive addition to existing measures. This shared focus on affective behaviours also underpins IoH's application as a tool for assessing social validity.

Evidence-Based Positive Behaviour Interventions

Behaviour-Specific Praise

Behaviour-specific praise (BSP) is an evidence-based strategy grounded in the principles of Applied Behaviour Analysis (ABA), in which praise is delivered contingently, clearly identifying the specific behaviour being reinforced (Brophy, 1981). By explicitly describing the desired behaviour (e.g. "Thank you for raising your hand before speaking"), BSP strengthens the functional relationship between the student's action and positive reinforcement. This then increases the likelihood of behaviour repetition and reduces uncertainty around expectations (Brophy, 1981; Ennis et al., 2020). Within the ABA framework, BSP can be understood as a form of Differential Reinforcement of Alternative Behaviour (DRA), whereby appropriate, alternative behaviours are systematically reinforced to replace problem behaviours (Becker et al., 1967; Royer et al., 2019).

Early foundational studies by Becker et al. (1967) and Thomas et al. (1968) demonstrated that contingent teacher praise significantly reduced disruptive behaviours and increased on-task or "academically engaged" behaviour (AEB). These studies provided some of the earliest empirical support for the use of praise as a tool for behaviour management. Subsequent research has consistently supported these findings. For example, Sutherland et al. (2000) found that increasing the frequency of BSP improved AEB in students with emotional and behavioural disorders (EBD), while Fields (2012) concluded that balancing rates of praise and correction statements was beneficial in reducing defiant behaviours in students with oppositional defiant disorders (ODD). This focus on balance is echoed in wider literature, which highlights the importance of maintaining a favourable praise-to-reprimand ratio. Research has shown that student engagement is not only influenced by the level of praise alone, but also by its comparative use relative to corrective statements (Reinke et al., 2007; Sutherland et al., 2000), with reviews recommending a minimum ratio of 4:1 to support positive classroom climates (Simonsen et al., 2008). Additionally, BSP has been linked with improving prosocial behaviours, academic outcomes and peer perception (Brophy, 1981; Van Houten et al., 1973). Chalk and Bizo (2007) demonstrated enhanced classroom engagement and enjoyment when BSP was implemented during numeracy classes, while Van Houten et al. (1975) were the first to examine the effects of BSP on student academic performance, and peer interactions, finding that BSP positively affected both variables. Wilson and Glynn (1983) investigated whether specific praise of a specific learning behaviour would increase the rate of that behaviour occurring. They provided students with a word list when setting writing tasks, offering praise when students independently used these lists. Results highlighted the effectiveness of specific praise in promoting independent learning behaviours.

Reinke et al. (2007) further showed that providing teachers with visual performance feedback led to increased rates of BSP and corresponding improvements in student behaviour. Comprehensive reviews by Royer et al. (2019) and Ennis et al. (2020) examined BSP research undertaken during the past 40-50 years, and confirm BSP's effectiveness across age groups, settings,

and populations, making it a key tool for improving classroom climate, promoting academic engagement, and reducing disruptive behaviours. As noted in a 2025 editorial overview, fidelity, functional analysis, and context remain key to effective BSP implementation, particularly when exploring peer- versus teacher-delivered formats (Royer & Ennis, 2025).

Peer-Mediated Interventions (PMI)

Peer-Mediated Interventions (PMI) are a category of strategies in which students are trained to act as "agents of change" to help improve the academic, behavioural, and social outcomes of their peers (Davis, 1995; Kohler & Strain, 1990). Examples of PMIs include peer-tutoring, peer-mentoring, peer-modelling, peer-behaviour monitoring, and peer-reinforcing (Brown et al., 1999; Kaya et al., 2013). PMIs have also been associated with reductions in teacher workload, and increases in student self-regulation, self-management, and academic engagement (Dufrene et al., 2005). PMIs align with the proactive focus of positive behaviour frameworks such as PB4L, as they encourage the use of evidence-based strategies to improve classroom management, without overburdening the teacher (Lane et al., 2013). A typical classroom can be a very busy environment, and teachers often report that they feel that they do not have enough time to attend to every student, often resulting in high levels of challenging behaviour (ERO, 2024a). PMIs help address this issue, by utilising the readily available resource of peers, who can prompt appropriate behaviour and reinforce desirable actions, when teachers are otherwise occupied (Harjusola-Webb et al., 2012; Kaya et al., 2013). Trained peer mediators might act as discriminative stimuli, signalling to students that reinforcement will be available for appropriate responses (Kaya et al., 2013).

Extensive evidence supports the implementation of PMIs to improve classroom behaviour across age ranges, student needs and educational settings (Beaulieu et al., 2013; Dart et al., 2014; Kaya et al., 2013; Ryan et al., 2004; Sinclair et al., 2019). PMIs also support Bandura's (1965) Social Learning Theory, where they propose that students are more likely to imitate behaviours they observe being reinforced in others, making peer modelling a powerful tool for shaping classroom behaviours (Bandura et al., 1963).

Although not specifically a PMI, peer-mediated BSP has been demonstrated to be effective in reducing problem behaviours and increase prosocial and on-task behaviours (Aoki, 2024; Jones et al. 2000). Solomon and Wahler (1973) conducted an ABAB reversal design to examine the effect of "peer therapists", who ignored problem behaviours, and praised desired on-task behaviours. Results showed that peers effectively reinforced desirable behaviours, and problem behaviours decreased significantly during intervention phases. Jones et al. (2000) extended this research by examining the effect of peer-mediated BSP on socially rejected students. Peer praise was found to improve cooperation and acceptance amongst the group.

Group Contingencies

Group contingencies are evidence-based behavioural strategies in which behavioural expectations are set, and a shared consequence (usually a preferred reward) is delivered based on the behaviour of one or more group members (Cooper et al., 2020; Litow & Pumroy, 1975). Repeated reinforcement strengthens motivation and increases the likelihood of recurrence (Skinner, 1953). These contingencies are especially effective in classrooms, where teachers must simultaneously monitor multiple students (Denune et al., 2015) and can target behaviours such as academically engaged behaviour (AEB), compliance, academic performance, or prosocial conduct (Korpershoek et al., 2016; Little et al., 2015). Their simplicity makes them easy to integrate into general and special education settings (Gresham & Gresham, 1982; Joslyn et al., 2019). There are three main types: independent, dependent, and interdependent (Litow & Pumroy, 1975).

Independent Group Contingencies. Here, the same criteria apply to all students, but each earns rewards based on their own behaviour (Harlacher, 2015). This promotes individual accountability while maintaining a class-wide system (Cooper et al., 2020). While effective, it may foster competitive climates (Little et al., 2015) and lacks the peer influence seen in other formats (Gresham & Gresham, 1982).

Dependent Group Contingencies. Rewards are given to the whole group based on the behaviour of one or a few selected students (Gresham & Gresham, 1982; Harlacher, 2015). This

model can increase peer encouragement and social modelling (Litow & Pumroy, 1975) but must be used carefully to avoid peer resentment.

Interdependent Group Contingencies. Reinforcement is contingent on all group members meeting the behavioural criteria, encouraging collaboration and accountability (Gresham & Gresham, 1982; Harlacher, 2015). Peer monitoring enhances stimulus control and promotes prosocial behaviour (Barrish et al., 1969; Maggin et al., 2017). Though highly engaging (Denune et al., 2015), interdependent group contingencies require clear expectations and consistent reinforcement to remain fair and effective.

Group contingencies can be implemented as standalone interventions (Ling et al., 2011; Maggin et al., 2017) or alongside others, such as Tootling (Barrish et al., 1969; Eaves et al., 2021; Skinner et al., 2000), to enhance behavioural outcomes.

Positive Peer Reporting (PPR)

Positive Peer-Reporting (PPR) is a well-established PMI designed to improve social standing and prosocial interactions of peer-rejected students, through structured peer-praise (Murphy & Zlomke, 2014). Over the past 50 years, PPR has consistently been shown to be effective across a range of age groups, educational settings, and target behaviours (Murphy & Zlomke, 2014; Sherman, 2012). PPR involves students publicly praising a targeted peer's appropriate behaviour during designated observation and reporting times (Moroz & Jones, 2007). Students are trained how to deliver positive praise, including looking at them, smiling, and offering honest and genuine praise (Moroz & Jones, 2002; Morrison & Jones, 2007). To encourage participation, a group contingency is frequently incorporated, whereby either the group or individual reporters receive reinforcement when reporting criteria are met (Moroz & Jones, 2002; Murphy & Zlomke, 2014).

The first documented peer-reporting intervention was conducted by Grieger et al. (1976) who encouraged Kindergarten students to share which of their peers had done something "nice" that day. They found a positive relationship between peer-praise, and rates of cooperative play, alongside a decrease in aggressive peer interactions. Ervin et al. (1996) penned the name "Positive

Peer Reporting" and successfully developed an intervention for a socially rejected girl in a residential care setting. Notably, they were also the first to utilise an interdependent contingency alongside PPR, awarding points towards group rewards for each accurate peer report (Murphy & Zlomke, 2014).

Following Ervin et al.'s (1996) success, several researchers applied PPR to other alternative education settings, continuing to focus on improving social-standing and interactions of peer-rejected children and youth (Bowers et al., 2000, 2008; Jones et al., 2000; Robinson, 1998). Moroz and Jones (2002) extended this work into a general education classroom setting, targeting three socially withdrawn students. Each morning a 'star' was 'randomly' selected for peers to observe and praise, ensuring that the target student was selected on Day 1. All three targeted students improved social interactions during recess.

Morrison and Jones (2007) extended research by implementing PPR as a class-wide intervention, using a carnival wheel and number system to select a peer to report on. Their results confirmed improvements in social interactions and overall classroom culture. Bowers et al. (2008) broadened the research to include students with disabilities in mainstream classes, with results indicating that PPR significantly improved the social status of peer-rejected students. Libster (2009) focused on socially neglected students (different from rejected), also within general education, and reported similar increases in social preference and peer recognition. Most recently, Neddenriep (2021) presented a comprehensive case study, reinforcing PPR's value as an adaptable tool in multi-tiered systems of support such as PB4L. Together, these studies suggest that PPR is a versatile and empirically supported intervention that improves peer acceptance, increases prosocial behaviour, and supports inclusive classroom environments.

Tootling

Developed by Skinner et al. (2000), Tootling is a modified class-wide version of PPR, designed to increase prosocial and classroom-appropriate behaviours. The name is a portmanteau of "Tooting your own horn" and "tattling", reflecting the positive focus of the intervention (Choundira, 2022;

Lum et al., 2017). Students are explicitly trained how to observe and privately report peers' prosocial behaviours throughout the day, submitting these reports (tootles) into an allocated box. At the end of the day, a random selection of tootles is read aloud, recipients are praised, and the class's progress toward a predetermined group goal is publicly displayed (Cihak et al., 2009; Lambert 2014). Over the past 25 years, Tootling has demonstrated an effectiveness in increasing prosocial and decreasing disruptive behaviour (DB) across a range of education settings and age levels.

Components of Tootling

Tootling is comprised of three core components (peer reporting, public posting, and group contingency) which together form the foundation of a flexible, evidence-based intervention that supports prosocial behaviour and reduces classroom disruptions across settings and age groups (Goss, 2019; Salinas, 2021; Morris, 2017). While only the first two components appeared in early iterations (Skinner et al., 2000, Cashwell et al., 2001), later research has established group contingency, as essential for maximising effectiveness (Lambert et al., 2015; McHugh et al., 2016). Despite this, implementation remains inconsistent. Some researchers isolated the components to evaluate their individual effects (e.g., Alstead, 2022). Studies using all three components tend to report the strongest and most sustained improvements in prosocial behaviour and engagement, highlighting their value. Each component is discussed below, with attention to its theoretical basis and function.

Peer Reporting. Positive peer reporting (PPR) is an integral component of Tootling, though it differs in how it is implemented. Unlike PPR's public sharing of peer reports during a set time, Tootling allows students to privately submit written or digital reports, throughout the day (Agosta, 2009; Dillon, 2016). Adaptions have improved accessibility for diverse learners, including coloured tokens to symbolise prosocial behaviours (Miller, 2017), pre-printed tootle slips with peer names and prosocial behaviours with pictorial cues to choose from (Enright, 2023), or digital formats such as ClassDojo, or Padlet (Dillon et al., 2019: Salinas, 2021). Additionally, students are encouraged to tootle on a range of peers, rather than a designated student (Skinner et al., 2000), fostering

inclusivity and a stronger classroom climate (Steeves, 2017). Peer reinforcement in both PPR and Tootling has consistently been linked to increases in appropriate behaviours and decreases in problem behaviours (Collins et al., 2020).

Public Posting. The second core component is public posting, which provides a visual representation of class progress towards the group goal (Skinner et al., 2000). This visual feedback acts as a discriminative stimulus, strengthening the link between prosocial behaviours and praise (McHugh et al., 2016, O'Handley et al., 2020). Visual progress trackers vary across studies, from tallying totals on the whiteboard (Thoele & Sayeski, 2024) to a ladder display with an icon climbing towards a goal (Cashwell et al., 2001). These displays increase engagement and support positive behaviours.

Interdependent Group Contingency. The final core component is the use of an interdependent group contingency, where students work together towards a shared goal, promoting peer-accountability (Skinner et al., 2000). Additionally, these contingencies increase teacher buy-in, by addressing multiple behaviours simultaneously (Denune, 2015). Criteria vary across studies: using a fixed daily goal (McHugh et al., 2016), a randomised criterion (Tran, 2024), or establishing cumulative goals over time (Lum et al., 2019). Interdependent contingencies have been shown to increase tootling rates and prosocial behaviour while fostering a positive classroom climate (Agosta, 2009; Alstead, 2022).

Foundational Studies

Skinner et al. (2000) developed the first Tootling study to promote and reinforce student awareness and demonstration of prosocial behaviours. An ABAB reversal design was used in a fourth-grade classroom. Students were trained to observe their peers' prosocial behaviour, distinguish between examples and non-examples, and accurately record their observations on index cards (tootles). During Baseline, students were encouraged to submit completed tootles into a "tootle box" on the teacher's desk. The primary researcher tallied daily tootle submissions each afternoon. In the Intervention phase, the class was informed of a collective goal of 100 tootles, to be

achieved collaboratively in order to earn an extra 30-minute recess. Progress was tracked using a cardboard ladder, with an icon moving up a rung for each additional tootle. Upon reaching the goal, students were granted their reward, and a new criterion of 150 tootles was set with a new incentive.

Results showed increased tootle submissions during the intervention phases. However, key limitations included no measurement of actual prosocial behaviour change (only reporting); no assessment of social validity, generalisation, or maintenance; and no formal treatment integrity checks. Nonetheless, the teacher continued the intervention after the study concluded, suggesting perceived utility and ease of implementation.

The following year, Cashwell et al. (2001) replicated Skinner et al.'s (2000) study in a second-grade classroom. Their findings further supported the proposition that the use of an interdependent group contingency and public progress display increased the frequency of tootle submissions. Although the studies were nearly identical in design, the Cashwell replication was conducted with a younger cohort and introduced a slightly modified reinforcement structure, offering a 20-minute recess as the initial reward and a field trip upon achieving a second tootle goal. These findings strengthened the generalisability of the intervention across age groups and reinforcement types.

Building on Skinner et al. (2000) and Cashwell et al. (2001), Shelton (2002) investigated whether students could generalise observations of prosocial behaviours beyond the intervention and examined the effects on peer perception. Using a pretest/post-test design with third- and fourth-graders, Shelton employed the Prosocial/Antisocial Attention and Recognition Measure (PAARM) and the Peer Perception Scale (PPS). While prior research suggested improvements in peer perception through positive peer reporting, Shelton found only slight, statistically non-significant increases Consistent with Ingram and Bering (2010), antisocial behaviours were more readily recognised than prosocial ones.

A fourth early contribution came from Agosta (2009), who used an A–B quasi-experimental design to compare Tootling with and without an interdependent group contingency across two second–third grade classes. Both groups received training, but only the experimental group received

a collective goal and reward. While the number of tootles increased under the contingency condition, teacher ratings on the Student Protective Factors Screening Scale (SPFSS) revealed no significant gains in prosocial behaviour. However, students in the reward condition reported greater school connectedness and motivation.

Collectively, these foundational studies established the core features of Tootling (peer reporting, public posting, and group reinforcement, unless otherwise specified), as low-cost, feasible components that could be implemented with minimal teacher time. With this basic structure in place, subsequent research shifted focus to evaluating Tootling's behavioural effects in real-world classrooms.

Improving Student Classroom Behaviour

Upper Primary School Setting. Following this initial work, researchers began focusing on Tootling's effects on observable classroom behaviours, specifically, reducing disruptive behaviour (DB) and increasing academically engaged behaviour (AEB). These studies were typically conducted in upper primary and middle school settings.

Cihak et al. (2009) conducted the first peer-reviewed study examining the effect of Tootling on disruptive behaviour (DB) in a 3rd-grade inclusive classroom, which included four students with special educational needs (SEN). Using an ABAB reversal design, the study compared DB rates for the whole class, SEN students, and non-SEN students. During baseline, the teacher followed their usual behaviour management routine. Before the intervention began, students were trained to identify examples and non-examples of prosocial behaviour and to record these "tootles" on index cards. During intervention phases, the Tootling procedure was introduced, and the class worked toward a shared goal of 75 tootles to earn a 20-minute extra play session. The teacher recorded instances of DB using tally marks on a paper bracelet. Across both intervention phases, DB decreased among all groups. High social validity and treatment integrity scores suggested the intervention was feasible and acceptable. However, the authors noted that relying on the teacher as the sole data collector

could limit data accuracy, prompting later studies to use trained observers and interobserver agreement procedures.

Lambert (2014) extended this research by examining the impact of Tootling on both class-wide and individual disruptive and appropriate behaviour in three sixth- and seventh-grade classrooms. Using an ABAB reversal design, one target student was nominated per class, each displaying high levels of DB. The intervention phase involved pairing Tootling with an initial interdependent goal of 60 tootles. They were the first researchers to use direct observation, which occurred three times weekly, with interobserver agreement (IOA) collected for 25% of sessions. Results showed reductions in DB and increases in appropriate behaviours at both levels, though implementation issues, such as inconsistent reinforcement, were noted.

In a subsequent study, Lambert et al. (2015) shifted to focus solely on class-wide DB and appropriate behaviour, using a multiple baseline ABAB design across two fourth- and fifth- grade classrooms, omitting the individual student component. Results showed consistent decreases in DB and increases in appropriate behaviours across all phases, with moderate to strong effect sizes. Importantly, behaviour changes were maintained at follow-up two weeks later, the first study to look at maintenance. Both teachers rated the intervention as socially valid.

As technology-enhanced teaching programmes increased, researchers began exploring digital adaptions of Tootling to support positive student behaviour and decrease DB (Dillon, 2016; Dillon et al., 2019, Morris, 2024). ClassDojo emerged as a globally used platform for delivering such interventions, offering real-time feedback, public progress tracking, and accessibility across school and home settings.

Dillon's (2016) PhD thesis was the first to successfully trial digital Tootling using ClassDojo, with findings later published in a peer-reviewed article by Dillon et al. (2019). This was the first to target academically engaged behaviour (AEB) alongside DB at the upper primary level. An ABAB reversal design was implemented across three 5th-grade classes (two incorporating multiple baseline elements). Students were trained on ClassDojo and allowed to submit tootles at the end of each

session, with a 5-seconds time allowance per tootle. Results showed substantial decreases in DB and increases in AEB. Social validity assessment found the intervention to have strong acceptability, moderate feasibility, and moderate to strong in time-effectiveness.

Chaffee et al. (2020) extended the Tootling literature by evaluating the effectiveness of a paper-based format in increasing AEB and reducing DB in two sixth-grade classrooms. An ABAB design was used, followed by a maintenance phase in which the Tootling procedure continued, but the interdependent group contingency was removed. This allowed researchers to assess whether behaviour improvements could be sustained without external rewards. Results indicated moderate-to-large increases in AEB and moderate reductions in DB. Although findings were somewhat less distinct than in earlier studies, behaviour gains were maintained across both classrooms during the maintenance phase. The authors hypothesised that this effect reflected an "entrapment" process, where students internalised reinforcement and began responding to natural contingencies, such as peer and teacher praise.

Collectively these studies confirm that Tootling is a feasible and effective intervention for reducing disruptive behaviours and increasing appropriate and academically engaged behaviours in upper primary and middle school classrooms. Intervention improvements, such as using trained observers, measuring interobserver agreement, collecting follow-up data, and reporting effect sizes have strengthened its evidence. Notably, sustained effects following reward removal support its long-term effectiveness in authentic classroom settings.

Lower Primary and Kindergarten settings. Following its success in upper primary classrooms, Tootling was adapted for lower primary and early childhood settings. These studies explored whether younger children could reliably participate in Tootling and similarly benefit.

McHugh et al. (2016) were among the first to explore Tootling's effect on student behaviour in the lower primary classrooms, replicating and extended Lambert et al.'s (2015) work. Using an ABAB design with multiple baseline elements, they directly observed academically engaged behaviour (AEB) and disruptive behaviour (DB) at both class-wide and individual levels, across three

second- and third-grade general education classes. A low daily tootle criterion (25-30) supported achievability and consistent reinforcement. Results showed moderate-to large improvements in AEB and reductions in DB, maintained across phases. While teacher influences was a limitation, daily goals may enhance feasibility and classroom collaboration, especially when paired with clear expectations and visual prompts.

Building on this, Miller (2017) extended and adapted Tootling for a preschool setting, by integrating it with Positive Peer Reporting (PPR) components. Due to limited writing abilities, students were explicitly taught to verbally report peers' prosocial behaviours to the teacher, who provided coloured-coded tokens representing different prosocial behaviours (e.g. red for "taking turns), which were then placed on the corresponding tootle tower. The intervention used an ABAB reversal design to measure class-wide DB and AEB during circle time, as well as the frequency of tootles and tattles. Results indicated positive treatment effects for both DB and AEB, a 50% reduction in tattling, and moderate increases in prosocial behaviour. One child, however, exhibited a 15% increase in DB. Social validity measures showed the teacher found Tootling feasible and enjoyable, supporting its use in early learning settings.

Kirkpatrick et al. (2019) broadened research by using a modified Tootling intervention in an after-school programme for at-risk third graders. A randomised interdependent contingency was put in place, contingent on the number of students being tootled on (rather than the number of submissions). Using an ABAB withdrawal design, the authors found decreases in negative peer interactions class-wide and across all four individual target students.

Wright et al. (2021) were the first of several to focus on using Tootling to increase recently taught social skills, later extended by Crewdson et al. (2022, 2023). In an after-school program, first-grade students were explicitly taught the social skill of complimenting. Using an ABAB reversal design data were collected during small-group maths activities. Students were taught to play the "Catching Compliments game", where they used modified tootle slips to circle the name of the peer observed giving a compliment. An interdependent group contingency was linked to the number of

tootles submitted. Results showed an immediate increase in rates of students complimenting. Wright et al., (2022) built on their previous research, extending the focus to three explicitly taught social skills: complimenting, encouragement, and thanking, using a multiple baseline design. Students selected the observed social skill, when tootling. An unknown random group contingency criterion changed daily. Increases were seen as each social skill reinforcement was introduced.

Crewdson et al. (2022) adopted a similar approach, using an ABAB reversal design to examine whether compliments and encouragements increased following explicit teaching of these social skills. As with Wright et al. (2021, 2022), they used a modified tootle slip. Researchers compared the number of submitted “encouragements” and “compliments” to the number of observed instances of the two behaviours. Positive treatment effects were observed. Crewdson et al. (2023) observed whether the rates of compliments and encouragement generalised across three activities requiring differing degrees of social interactions: bingo (control), Lego (parallel play), and Yeti-Spaghetti (cooperative play). An interdependent contingency was contingent on number of submissions of each skill, with a random daily criterion implemented. Rates of both skills were highest with the Yeti-Spaghetti game, and lowest during Bingo. Overall, Tootling has been shown to increase the rate of recently taught social skills.

Morris (2024) extended Dillon et al.’s (2019) research by implementing a Tootling via ClassDojo intervention in a third-grade classroom, using an ABAB reversal design. The study aimed to replicate and extend earlier findings within a younger cohort, focusing on both AEB and DB. Students were trained to tootle via ClassDojo, which they were allowed to do at the end of each session. Results observed positive treatment effects on both AEB and DB, supporting the feasibility of Tootling via ClassDojo for younger students.

These studies demonstrate that, with developmentally appropriate scaffolding such as simplified slips, visual cues, and modelling Tootling can be effectively implemented in early education settings. Despite challenges like emerging literacy skills, the intervention supports behaviour and prosocial development.

Other Educational Settings. Lum et al. (2017) extended the Tootling literature into a high-school setting. To increase buy-in, students renamed the intervention to the more age-appropriate "Shout-outs". Using an ABAB design, the study showed moderate increases in academically engaged behaviour (AEB), and moderate-to-large decreases in disruptive behaviour (DB). Lum et al. (2019) replicated this, adding a randomised independent group contingency (the first to do so): three "shout-outs" were rewarded, alongside two additional reporters. Results found very large positive treatment effects on both class-wide AEB, and DB across all three classes.

Tootling's adaptability has also been examined in special education (SEN) contexts, which often require tailored behavioural support strategies. Although Cihak (2009) had touched on the topic of SEN students, in the context of a general-education setting, Lipscomb et al. (2018) were the first to investigate Tootling in a (post-secondary) SEN setting. They used an alternating treatment design to compare ClassDojo alone (teacher-delivered points) with Tootling-via-ClassDojo (peer-delivered points, during designated "Tootle time"). Class-wide and individual rates of problem behaviour were recorded. Both conditions were effective, though, class-wide data showed minimal difference between them. At the individual level, ClassDojo-alone produced moderate-to-large effects for six students, while Tootling-via-ClassDojo was more effective for the remaining four students.

Research on Tootling's accessibility and effectiveness for SEN students has expanded in recent years. Salinas (2021) implemented a digital version of Tootling via Padlet across three SEN classes, one at each schooling level from elementary to high school. One targeted student with an Emotional Behaviour Disorder (EBD) was selected from each class. Using an ABAB reversal design, strong treatment effects were observed in AEB and DB at both class-wide and individual levels.

Hilt-Panahon and Alstead (2023) conducted several case studies examining Tootling's effect on neurodivergent students, Emotional Behaviour Disorder, or in specialised classes. Results showed generally positive treatment effects on AEB, prosocial behaviours, and reductions in DB,

particularly when pre-printed tootle slips were used. These slips required students to circle their own name, a peer's name, and the prosocial behaviour from a pre-defined list.

Ray (2019) evaluated Tootling in three SEN classrooms (second- to third grades) using an A-B design, with pre-printed tootle slips. Results showed large improvements in AEB and reductions in DB, although prosocial behaviour improvements were modest, and tootle submission rates were lower than in general education settings. Only two of the three groups met their goals. Ray et al. (2024) extended this work using a multiple-baseline design across three SEN classrooms (Grades 2–5), again using pre-filled slips to reduce writing demands. Results indicated strong gains in on-task behaviour and reductions in DB, but minimal change in prosocial behaviour—mirroring the earlier study. This replication highlights Tootling's viability in SEN settings, particularly for improving engagement and reducing disruption, despite mixed outcomes for peer interactions. Beyond improving classroom behaviour, Tootling also promotes prosocial development and a sense of unity, extending its usefulness across different developmental settings and contributing to holistic learning and wellbeing.

Across these varied settings, Tootling has shown consistent effectiveness in reducing disruptive behaviour and increasing academically engaged behaviour. Age-appropriate adaptations (e.g. simplified slips, digital tools, and visual prompts) have supported its success from early childhood through to secondary and SEN contexts. This evidence positions Tootling as a versatile, scalable intervention for improving behaviour and classroom climate.

Tootling and Teacher Behaviours

While Tootling primarily centres on peer-delivered praise, it also includes teacher-delivered praise, with the classroom teacher reading students' tootles aloud and publicly reinforcing prosocial behaviour (Skinner et al., 2000). To rule out possible confounds, some studies have examined whether observed improvements could instead be attributed to increases in teacher praise (Chaffee et al., 2020; Lambert, 2014). Recent research, however, suggests that Tootling may also prompt broader increases in teacher-delivered praise beyond the structured components of the intervention.

Powell (2020) was the first to examine teacher praise, in addition to student behaviours. They implemented a multiple-baseline design across a Year 1 and two Year 5/6 classes in an Aotearoa New Zealand primary school. They used pre-printed tootle slips, adapting them to meet the developmental needs for each year level. A pre-determined group contingency was implemented. AEB and DB showed positive treatment effects, however, there was no significant change in rates of teacher praise. Both, teachers and students rated the intervention acceptable.

Choundira (2022) also investigated teacher praise, alongside student AEB. They conducted a series of A-B designs across two inclusive Year 2-3 classes in a PB4L-SW school. Six target students, at-risk for EBD were selected across the classes. Modified pre-printed tootle slips aligning with their school's 'MANA' values, were used. A secret, randomly selected interdependent contingency was implemented, revealing the criterion at the end of each day. Results showed increases in AEB across both classes, and for five of the six targeted students. There were very slight, non-significant increases in teacher praise in both classes. Both teachers and students found the intervention socially acceptable.

Enright (2023) built on these previous studies, investigating tootling's effect on teacher praise and stress, and student AEB, and instruction-following behaviour. They conducted an A-B-A-B-C-D reversal design, across three Year 3 classes in primary school. One target student and two comparison peers were selected from each class. Three pre-printed tootle slips were issued to each child daily. A randomly selected interdependent contingency was implemented. Results showed class-wide and target-student increases in instruction-following, while AEB increased across both classes, and in two of the target students. Similar to Choundira (2022) and Powell (2020), no significant change was observed in teacher praise, however slightly lower rates were observed during withdrawal phases. As reported earlier, teacher-experienced time-management and behaviour-management stressors decreased. Observations showed that students enjoyed tootling and got along better.

Lum et al. (2017) noted in their investigation that a teacher had observed their stress levels lowering during intervention phases. Miller (2017) was the first researcher to examine the effect Tootling had on teacher stress, finding reductions in Teacher Stress Inventory scores, confirming the positive effect Tootling can have on teacher well-being. Enright (2023) strengthened this evidence by examining the different aspects of teacher stress, finding reductions in both behaviour-management and time-management stressors. Enright (2023) did see some increases in some stressors; however, they noted that these could have been due to external factors in the wider school environment.

While Tootling does not appear to directly increase teacher praise, findings suggest potential indirect benefits, including reduced teacher stress and improved classroom climate. Further research is needed to explore how Tootling may influence broader teacher behaviours over time, or to rule out teacher praise as a possible confound for the effectiveness of Tootling.

Evaluating the Active Components of Tootling.

Researchers often noted in their limitations that although Tootling had well-establish positive treatment effects on student behaviour, it would be beneficial to understand which component was the most effective (Murphy & Zlomke, 2014).

Writing Component. Derieux (2019) used an alternating treatment design (ATD) across three high-school classes to compare Tootling, a comparison writing condition, and a control. Tootling followed the typical format; the comparison condition required students to note two things they had learnt; the control mirrored the comparison condition, however, removing the interdependent contingency. Results showed increased AEB in the Tootling condition for two students, with one responding better to the comparison writing condition. All students demonstrated notable reductions in DB, with Tootling more effective for DB than AEB.

While modified tootle slips support developmental accessibility, no study has yet compared their effectiveness with traditional slips for changing behaviour or increasing submissions. Whitefield et al. (2024) compared traditional blank tootle slips with pre-printed “formalised” slips and an

interdependent control (students noted something they had learnt or enjoyed). A multiple baseline ATD was used across three third- to -fifth grade classes. An interdependent group contingency was implemented in all conditions. In the Tootling conditions students earned group rewards, whereas in the control condition, students only received teacher praise. All conditions showed positive effects on AEB and DB, with formalised Tootling producing the strongest outcomes. Two classes had large-to-very large effects across conditions, while the third showed large AEB and moderate DB improvements. Social validity was rated moderately to highly acceptable.

Interdependent Group Contingency Component. Foundational studies showed that including a group contingency increased tootle submissions (Cashwell, et al., 2001; Skinner et al., 2000), however few have examined its impact on student behaviour. Goss. (2019) explored the effects of Tootling without goals or external rewards on the negative behaviours of six-to-nine-year-olds in a Montessori school. Students were reminded of classroom expectations, and read books promoting prosocial behaviour, before beginning Tootling. During the A-B design, students self-reported prosocial behaviours (either theirs or a peer's) and submitted the tootle. They then placed a flower on a tree picture to track prosocial behaviours and reinforce Montessori values. The teacher saw minimal effect on negative behaviours.

Wright (2019) tested a mystery contingency's impact on class-wide AEB and DB in three high-school classes, using an ABAB reversal design. Tootling used pre-printed tootle slip, and student leaders who reminded peers of the goal, counted tootles, and randomly selected and read five aloud. If the goal was met, a mystery card determined whether a reward, or praise (2:1 ratio) was issued. If rewarded, a second envelope was drawn from to select the reward. Positive treatment effects on both AEB and DB were seen in two classrooms, while the third classroom's data was inconclusive. The intervention was found to be acceptable by both teachers and students.

Tran (2024) contributed to this topic by comparing three reward criteria: total tootles, total submitters, or total recipients, in a ninth-grade class, using an alternating treatment design. Each day, a criterion was randomly selected and implemented alongside the standard Tootling procedure.

All conditions reduced DB, with the Recipients condition producing the most consistent effects. Changes in DB were modest overall. Social validity ratings were moderate from both students and teacher.

Public Posting Component. While most Tootling interventions publicly tracked group progress, Harry et al. (2022) investigated whether publicly posting submitted tootles influenced student behaviour. They conducted an A/B/B+C design across four high-school classes, comparing standard Tootling, with a Tootling + public-posting (of tootles) condition. In the latter, after counting tootles and updating progress trackers, all tootles were posted onto a hallway bulletin board. An interdependent contingency was used in both phases. Both conditions improved AEB, DB, and passive off-task (POT), but no significant difference was observed between conditions. Social validity data indicated both conditions were rated as effective and useful.

Praise Component. Sherman (2012) was the first to examine Tootling's effects at the individual level. Four eight-to-eleven-year-olds, identified for high levels of DB and peer-rejection, participated in a study which implemented a multiple-baseline design. Two treatment pairs were created, one pair received Positive Peer Reporting (PPR) alone first, then PPR + Tootling, the other pair experienced the reverse. During PPR, students publicly praised a randomly selected "star of the day" (twice weekly, this was the target student). In the combined condition, a "star of the class" was selected, and peers could either publicly (PPR), or privately (Tootle) report on them. Both conditions used an interdependent group contingency. Results showed behavioural improvements in both interventions, with no statistical significant differences between them. Improvements generalised to playground settings, and teachers noted that offering public or private reporting supported shy and outgoing students.

Steeves (2017) compared Tootling with a Gratitude intervention, across nine third- and fourth-grade classrooms, using a quasi-experimental, repeated measures design. Three classes served as control, three implemented Tootling, and three implemented Gratitude practices (e.g. sharing gratitude during morning meetings, teacher thank-you notes). Both interventions positively

affected classroom behaviour, though no statistical significant differences were found in student wellness. Teacher-student relationships improved slightly more in the Gratitude classes.

All Core Components. Alstead (2022) conducted a detailed A-AB-A-AB-ABC-AB-ABC-ABCD-ABC-ABCD reversal design, to isolate the impact of each Tootling component. The phases were: (A) basic tootling (writing and collection of tootles); (B) A interdependent contingency (set goal); (C) B+ public positing of progress; and (D) C+ specific verbal feedback and praise. Results showed DB consistently decreased and AEB increased with each added component. The most substantial change occurred after adding the interdependent contingency, indicating it was the most impactful standalone component. However, the full combination was the most effective, warranting more research.

Teacher- vs. Student-Led Component. Wright et al. (2019) included student leadership in Tootling, however, no research to date has compared the effect of student-led with teacher-led interventions. Thoele and Sayeski (2024) addressed this gap, by using an alternating treatment design across three four- and fifth-grade classes, with five at-risk students. Depending on ability, students used either blank or pre-printed “shout-out” slips. During student-led sessions, a randomly selected student conducted the procedure. A set interdependent contingency and colour-coded progress tracker (green for student-led, red for teacher-led) were used. Both conditions improved AEB and reduced DB, with student-led preferred 100% of the time. Teachers and students both favoured student-led implementation.

Together, these studies contribute to a more nuanced understanding of how Tootling works and how it can be best adapted for diverse learners, educational contexts, and implementation styles. For practitioners, this research reinforces the importance of selecting formats and reinforcement structures that align with student needs and classroom culture.

Gaps in the Literature

There has recently been an increase in tootling studies examining its various components and their impact across a range of educational settings, student behaviours, and teacher outcomes.

However, several important areas remain underexplored. First, the majority of studies included in this review were conducted in the United States. Further investigation is needed to establish tootling's effectiveness across broader populations and educational contexts. Although Choundira (2022) examined Tootling through an Aotearoa New Zealand lens, there is limited research on how cultural values may shape its implementation and impact. For instance, in collectivist cultures such as Aotearoa New Zealand, where standing out is often discouraged, public peer recognition may have complex social consequences. It remains unclear whether students would copy the praised behaviour to preserve group harmony or distance themselves from it to avoid individual attention.

In addition, although several studies have investigated the core elements of Tootling, such as the written component, public posting, and interdependent contingencies, very few have explicitly investigated how the praise component can be manipulated to increase or decrease specific student behaviours or Tootling participation. This is particularly relevant for schools using values-based frameworks, such as PB4L, where reinforcement of targeted behaviours is aligned with school values. Similarly, while Tootling is known to promote prosocial behaviour, few studies have assessed its effects on teacher-level variables such as praise, reprimands, or indices of happiness, all of which may play a role in intervention maintenance.

Finally, research is limited on the patterns of student participation within Tootling, including how variables like submission type, and behaviour focus shape engagement. Understanding these patterns is essential for adapting the intervention to ensure it is inclusive and fair. In addition, much of the existing Tootling literature has relied on single-case experimental designs. While these provide strong evidence of functional relationships, systematic replications across diverse contexts and populations are required to establish the external validity and generalisability of the findings.

Current Study

The present study seeks to address several of the identified gaps in the literature by examining the effects of Tootling across two culturally inclusive classroom settings in Aotearoa New Zealand, a Year 0–1 class and a Year 5–6 class. Specifically, this study evaluates the impact of Tootling

on class-wide and individual student academically engaged behaviour (AEB), teacher praise and reprimands, teacher Indices of Happiness IoH), and the social validity of the intervention. It also investigates how a values-specific focus affects the frequency and topic of tootles, and explores patterns in Tootling submissions by gender, submission type, and prosocial behaviour and school value focus. The intervention was implemented within the Positive Behaviour for Learning (PB4L) framework, aligning Tootling with the schools' existing values-based behavioural systems.

Research Questions

1. Does Tootling increase academically engaged behaviour (AEB) at both the class-wide and target student levels?
2. Does the Tootling intervention promote inclusive student participation in the submission and receipt of tootles?
3. Does a values-specific focus increase Tootling on a targeted school value?
4. Does the Tooling Intervention increase teacher praise statements and decrease teacher reprimands?
5. Is the Tootling intervention socially valid?

Methods

Ethical Approval and Recruitment

Ethical approval for this investigation was granted by the University of Waikato's Department of Art, Law, Psychology, and Social Studies Human Research Ethics Committee (FS2021-30). The primary researcher approached the principal of a local primary school via phone call, followed up with an email containing an information sheet (Appendix A). Permission to undertake the research was obtained from the school's principal. The investigation was advertised in an email to the staff, which included the teacher information sheet, and consent form (Appendices B and C, respectively) and a poster (which was additionally displayed in the staffroom; Appendix D). The parents/guardians of each child in the participating class were sent an information sheet (Appendix E). Additionally, a consent form was given to the parents of target students (Appendix F), to be returned within 10 days. If no reply was received, an additional consent form was sent home. Passive consent was obtained from the remainder of the students by way of offering the parents the "withholding consent" form (Appendix G). If a "withholding consent" form was returned within ten days, no data was collected on that child. No child returned a "withholding consent" form.

Participants and Setting

The investigation was conducted in an inclusive general education primary school, that caters to Year 0 to 6 students, The school was the largest school in a rural Waikato town, with a roll of approximately 600 students. The school served a diverse student population, with 31% identifying as Māori, 2% as Pasifika, 5% as South-East Asian, 3% as Indian, 3% as African, 53% as New Zealand European, and 3% classified as "other." The gender split was almost balanced, with 51% of students identifying as male, and 49% as female. The school holds an Equity Index number of 466 (MoE, 2024a). EQI numbers range from 344-569, with higher numbers indicating lower socio-economic status. Schools with higher EQI receive more government funding (MoE, 2024a). An EQI number of 466 indicates that the majority of the participating school's intake are living at a moderate social economic level.

Study 1

Classroom A

To avoid confusion across classrooms, all target student identifiers include a classroom letter (A or B) followed by a student number (e.g., A-TS1 = Jaxon in Classroom A; B-TS1 = Harper in Classroom B). Pseudonyms were assigned to all target students and are used throughout this thesis to ensure confidentiality. Classroom A was a general education Year 0-1 class, consisting of 18 five- and six-year-old students: 8 boys and 9 girls. 59% of the students identified as NZ European, 30% identified as Māori, and the remaining 11% identified as Indian. The teacher was a 38-year-old female of NZ European descent with over 15 years teaching experience.

Target Student 1 (A-TS1, Referred to as "Jaxon"). Jaxon was a 5-year-old male of New Zealand European descent. He was nominated by his teacher due to daily disruptive behaviours, a low level of compliance, and inappropriate physical behaviours (e.g. punching and kicking other children). The teacher had submitted a referral for assistance with his behaviour.

Target student 2 (A-TS2, Hereafter Referred to as "Amanda"). Amanda was a 5-year-old female of New Zealand European descent nominated due to low levels of compliance, and high levels of disruptive and off-task behaviours.

Target Student 3 (A-TS3, Hereafter Referred to as "Aarav"). Aarav was a 5-year-old male of Indian descent, nominated due to high levels of disruptive behaviour and dishonesty, and low levels of compliance.

Target Student 4 (A-TS4, Hereafter Referred to as "Aihe"). Aihe was a 6-year-old female of Māori descent nominated due to low levels of compliance, high rates of disruptive and off-task behaviours.

Experimental Design

This study was initially intended to follow a single-subject A-B-A-B reversal design, comprising a baseline phase, implementation of the Tootling intervention, withdrawal of the intervention, and a reimplementation phase. A follow-up phase was also planned, 2–4 weeks after

the final intervention, to assess maintenance effects. The primary outcome was student academically engaged behaviour (AEB), with secondary outcomes consisting of teacher-delivered praise, and teacher-reported indices of happiness. However, due to teacher illness and a subsequent staffing change, only the baseline and first intervention phases were completed. The design was therefore adapted into an A-B design. Follow-up observations were not conducted, as the new classroom teacher chose not to participate in the study.

Materials

Teacher Interview. A structured interview with the teacher was developed to identify classroom values, behaviour expectations, and definitions of on-task (Academically engaged behaviour – AEB) and off-task behaviour (Appendix H). The interview also included prompts regarding group contingency planning and reward preferences to be used in later intervention implementation.

Data Collection. Structured data collection sheets were developed for student AEB, teacher praise and reprimand behaviour, and teacher Indices of happiness.

Student AEB Recording Sheet. Student data collection sheets were adapted from one developed by Choundira (2022). A clear definition of academically engaged behaviour (AEB) was included at the top of each sheet to ensure consistent scoring. Examples and non-examples were listed to assist observers, such as *"Sitting quietly at a table, attending to set independent task"* and *"Non-task related talking with peers",* respectively. The full list of definitions, examples, and non-examples is available in the Dependent Variables section and Appendix I. Each sheet included a student code key (e.g., A-Target Student 1 = A-TS1) and was divided into 120 labelled intervals. Each interval contained a tick box for AEB occurrence and space for observer notes.

Rates of Teacher Praise and Reprimand Statements Data Collection. This sheet was used to record the frequency of behaviour-specific praise (BSP), non-specific praise (NSP), and reprimands during observation sessions. The sheet included three separate columns for each praise and reprimand type. A definition of BSP was provided at the top of the sheet, along with examples and

non-examples to assist with scoring (e.g., “I like the way you’re sitting quietly”). NSP (e.g., “Well done!”) and reprimands (e.g., “Stop that now!”) were also defined, with examples and non-examples provided. Each column was further subdivided to distinguish between individual- and group-directed statements. A space to record observation notes, sub-totals and overall totals for each form of praise and reprimand was included, along with a space to calculate the rates per minute. Full definitions and coding criteria are presented in the Dependent Variables section and Appendix J.

Indices of Happiness (IoH) Recording Sheet. Definitions for Smiling, Approving, and Neutral behaviours were provided at the top of the sheet. The data collection section was divided into 20 numbered intervals. Spaces were provided to record the total number of instances for each behaviour, as well as the percentage of intervals in which each occurred (See Appendix K).

Observation equipment

Timer. The *Interval Timer* app was downloaded onto the primary researcher’s iPhone SE. The app was set to vibrate at the end of each observation interval to signal data reporting times.

Stop-Watch. A stopwatch app on the iPhone SE was set to indicate the end each 30-minute observation session.

Cameras. The primary researcher used three cameras to record observation sessions. An EOS 70D DSLR served as the primary recording device, while a JVC Everio camcorder and a Flip Camera were used as secondary cameras. All cameras were mounted on tripods.

Tootling. The following resources were created to support the implementation of the Tootling intervention.

Teacher Tootling Script. A script was developed to support the teacher-led training on the Tootling intervention (Appendix L). The script defined Tootling, introduced the relevant materials (Tootle tickets, box, and progress chart), and provided examples and non-examples of prosocial behaviours. It also provided guidance for modelling, role-playing and explaining the interdependent component, as well as space for incorporating student voted-upon reward options. The teacher used this script during student training.

Tootle Slips. Each table was supplied with pre-printed, coloured paper slips (105 mm × 150 mm; see Appendix M). To accommodate students with emerging literacy skills, a modified version of the standard tootling ticket format (e.g., Skinner et al., 2000) was developed. At the top of each ticket was a space for the student's name. Tickets were colour-coded by table group (pink, blue, yellow, and green), and each set featured printed photographs of the corresponding group members to assist students who were not yet confident in spelling peers' names. Beneath the photos were four target prosocial behaviours, accompanied by visual representations: "used their listening bodies," "helped someone," "did their work quietly," and "used their kind words". Each table had access to a complete set of tickets, enabling students to tootle any classmate's positive behaviour.

Tootle Box. A tissue box, covered in colourful paper was positioned at the front of the classroom. Students had access to place the completed tootles in the box.

Tootle Progress Chart. A laminated A3 sized progress chart was positioned beside the teacher's chair (see Appendix N). The chart featured a colourful rocket ship, with numbers 1-10 ascending vertically from the boosters to the rocket's tip. A yellow smiley face marker was used to track the class's collective tootle submissions by moving up each numbered level. Surrounding the rocket were 10 numbered yellow stars, each representing the successful submission of 10 tootles.

Integrity Checklists.

Treatment Integrity. A 14-item checklist adapted from Enright (2023) was used to assess whether the primary researcher appropriately trained the participant teacher to implement the Tootling intervention (see Appendix O). A 13-item student-training training integrity checklist, adapted from Powell (2020), was used to ensure the teacher delivered all critical components of the intervention during student training (see Appendix P).

Training Integrity. A 10-item daily checklist adapted from Enright (2023) was provided to the teacher, to ensure adherence to all steps of the Tootling intervention during intervention phase (Appendix Q). A modified 8-item version, adapted from the teacher version, was used by the primary researcher to monitor implementation fidelity during each session (Appendix R).

Social Validity

Teacher Rating. A modified version of the Behaviour Intervention Rating Scale (BIRS; Von Brock & Elliott, 1987) was used to assess teacher perceptions of the intervention (see Appendix S). The 24-item scale used a 6-point Likert response format (1 = strongly disagree to 6 = strongly agree) and was adapted to explicitly reference Tootling. The BIRS assessed three dimensions of social validity: acceptability, effectiveness, and time of effect, with reported coefficient alphas of .97, .92, and .87, respectively. The scale demonstrated strong internal consistency (α = .92) and evidence of content and construct validity (Turco & Elliott, 1986). Sample items included "Tootling quickly improved the children's behaviour" and "I would be willing to use Tootling in the class again."

Student Rating. A modified version of the Children's Intervention Rating Profile (CIRP; Elliott, 1986) was used to assess students' perceptions of the intervention (see Appendix T). The 7-item questionnaire used a visual 5-point Likert scale ( = strongly disagree to  = strongly agree), adapted from Powell (2020) to improve accessibility for younger students. Modifications included the use of emojis in place of traditional smiley faces and a simplified response scale to enhance clarity for Year 0–1 participants. The CIRP has demonstrated strong internal reliability (α = .86) (Turco & Elliott, 1986), and similar visual modifications have been employed in previous studies (Enright, 2023; Mitchell et al., 2015).

Dependent Variables

Student AEB. The dependent variable for both target students and their comparison peers was academically engaged behaviours (AEB). AEB was operationally defined as: "Actively participating in ongoing, sustained, engagement in teacher-set task (independent, group, or whole class) and attending to teacher's instructions". Examples included: Following instructions within five-seconds of being issued and actively participating during class mat-time or assigned group activities (answering questions when prompted; attending to the speaker; taking turns). Non-Examples included: Non-task related movement around the classroom; and non-task related talking with peers.

Teacher Behaviour. Two secondary dependent variables were recorded for teacher behaviour a) Rates of Teacher praise and reprimand, and b) instances of Teacher Indices of Happiness.

Rates of Teacher Praise and Reprimand. Teacher-delivered praise and reprimands were categorised as either behaviour-specific praise (BSP), non-specific praise (NSP), or reprimand.

- BSP referred to a verbal comment that explicitly identified a target behaviour (e.g. "Johnny, I like the way you are sitting quietly"). Non-examples included general approval, without behaviour-specification (e.g. "good, Johnny").
- NSP included verbal or gestural approval lacking a specific behaviour referenced (e.g. "Good work", or 'thumbs up' gesture). Non-examples included specific praise or corrective feedback (e.g. "I like the way Sophia is using her listening body" or "sit up properly" (with a stern tone).
- Reprimands were defined as a verbal or gestural expressions of disapproval (e.g. "Stop that!". Non-examples included praise statements (e.g. "I like the way you are sitting still").

Each instance of praise and reprimand was also categorised by direction.

- Individual-directed praise or reprimand were addressed to a named student, or while direct eye-contact was made (e.g. "Johnny, I like the way you are working quietly", or "Good, Mary"). Non-examples included generalised statements.
- Group-directed statements were delivered to the whole class (e.g. "Good work", "I like how quiet it is"). Non-examples included praise addressed to specific students.

Instances of teacher indices of happiness: Data was collected on three teacher behaviours associated with observable happiness indicators: smiling, approving, and neutral expressions.

- Smiling was defined as an upward curvature of the mouth, with or without showing teeth.
- Approving included positive verbal statements and affirmative gestures (e.g. nodding).
- Neutral referred to the absence of smiling, approving behaviours, or negative facial expressions.

Independent Variable

The Tootling intervention implemented in this study was adapted from Enright (2023) and included the use of modified tootle slips for positive peer reporting and public posting. Each student wrote their own and a peer's name on the slip, then selected a prosocial behaviour by circling it. Each option was paired with a visual representation to support students still developing literacy skills. As with prior studies, an interdependent group contingency was implemented to motivate participation. Unlike Enright's (2023) procedure, the contingency criterion in this study was not randomised; instead, a set goal was employed, as used in earlier studies (Cashwell et al., 2001; Cihak et al., 2009; Sherman, 2012).

While earlier studies often used large tootle targets (e.g., 40–100 tootles across multiple days), this study implemented a smaller daily criterion (10 tootles) to enhance immediacy of reinforcement. This was a factor shown to improve outcomes, particularly for younger students (McHugh et al., 2016). The daily goal allowed students to experience regular success and build motivation to work toward larger goals later in the intervention (Lambert, 2014). A reward was provided upon meeting the daily criterion, with additional reinforcement delivered after achieving the goal for five and ten consecutive days. At the end of each day, the teacher read aloud a selection of completed tootles to the class, promoting prosocial behaviour through public recognition.

Data Collection

All observations were video recorded to support accurate data collection. Due to a visual impairment, the primary researcher was unable to reliably observe student and teacher behaviours in real-time. An EOS70D DSLR camera served as the primary recording device, positioned to capture the target students' learning areas. A JVC Everio camcorder provided a secondary classroom perspective to ensure target student behaviour was consistently captured. A Flip camera was occasionally used to record additional footage, such as teacher behaviour or moments when a target student frequently moved out of frame. Data were primarily scored using footage from the EOS70D,

unless the student was not clearly visible, in which case recordings from the secondary cameras were used for confirmation.

Student Behaviour (AEB). Observations were conducted 2–4 times per week across 12 school weeks, including a two-week term break. Two additional two-week gaps occurred between Sessions 6 and 7, and Sessions 11 and 12, due to teacher illness. Each session lasted 30 minutes, with data collected using the MTS procedure previously described during the middle 20 minutes (excluding the first and final five minutes). Session times were selected in consultation with the classroom teacher and targeted periods of increased off-task behaviour (typically after morning tea during literacy instruction). Times involving a regular relief teacher were excluded.

Each target student (TS) was observed 20 times per session. Comparison student (CS) data were collected across 60 intervals, with a different CS selected for each designated observation. When small groups including both TSs and CSs were visible, CS observations followed a clockwise rotation within the group.

Teacher Behaviour.

Praise and Reprimand. Data on teacher-delivered praise and reprimands were collected during the same 20-minute video-recorded sessions used for student AEB. Using an event recording method, the observer tallied each instance of individual- and group-directed BSP, NSP, and reprimand.

Indices of Happiness. Ten-minute observations were conducted at the beginning of the same sessions, across at least 30% of each study phase, for a total of four sessions.

Integrity Checklists. Both Procedural and Treatment integrity were calculated by dividing the number of steps performed by the teacher, by the number of outlined steps on the relevant integrity checklist and multiplying this total by 100.

Observation Methods

Student AEB. Student AEB was measured using a 10-second **momentary time sampling** (MTS) procedure, conducted across 20-minute sessions (120 total intervals). A vibrating interval

timer app signalled the end of each interval. Observers recorded data on four target students (TS1–TS4), each of whom was observed during 20 intervals per session. When cued by the timer, the observer recorded a ✓ if the student was engaged in AEB, an ✗ if they were off-task, or a – if the student was not visible in the video footage. Intervals marked as – were excluded from percentage calculations. Comparison student (CS) data were collected using the same method. CSs were not pre-assigned identifiers. Instead, during CS intervals, the observer began with a randomly selected non-target peer and cycled clockwise through other students. In small-group settings, observers followed a clockwise sequence within the visible group. All CSs had passive consent; thus, no students were excluded.

Rates of Teacher Praise and Reprimand. Teacher praise and reprimands were observed using an event recording method, during the same 20-minute observation session. Each instance was tallied according to the six categories:

- Individual-directed behaviour-specific praise
- Group-directed behaviour-specific praise
- Individual-focused non-specific praise
- Group-directed non-specific praise
- Individual-directed reprimand
- Group-directed reprimand

Instances of Teacher Indices of Happiness (IoH). Teacher IoH behaviours were observed using a 10-second partial interval recording method, with each 10-second observation followed by a 5-second recording period. Data were collected during the same session, over a 10-minute period, resulting in a total of 40 intervals. The primary researcher observed (via video) the teacher during each interval, recording whether smiling, approval, or neutral behaviours occurred. If a target behaviour was observed at any point during the interval, a ✓ was marked beside the relevant category. If the behaviour did not occur, an ✗ was recorded.

Procedure

Teacher Interview. An initial interview was conducted with the classroom teacher to inform the implementation of the intervention (see Appendix H). The teacher clarified her classroom expectations, values, and definitions of on-task (AEB) and off-task behaviour. She also identified students to be included as target students and discussed the rationale for their selection. In addition, the teacher nominated a time of day when off-task behaviour was most prevalent, which informed the scheduling of observation sessions. All questions and concerns raised by the teacher were addressed during this meeting.

Preliminary Observation. The primary researcher visited the classroom for four 30-minute sessions, over a two-week period. These visits allowed the researcher to become familiar with the classroom routines and layout, while also enabling students to acclimate to their presence. During this time the cameras were introduced, however, no footage was recorded, as consent had not been obtained.

Baseline. During the baseline phase, the primary researcher conducted three to four 30-minute classroom observations per week. The classroom teacher continued using their usual behaviour management practices, and no elements of the Tootling intervention were introduced. Student academically engaged behaviour (AEB), teacher-delivered praise and reprimands were measured throughout. Teacher Indices of Happiness (IoH) were measured once during this phase, during Session 3.

Teacher Training. The primary researcher conducted a training session with the classroom teacher one afternoon to introduce the Tootling intervention. An integrity checklist was followed to ensure all components of the training were covered (see Appendix L). The researcher modelled examples and non-examples of tootles, after which the teacher practised generating their own to ensure understanding. Questions were answered and clarifications provided as needed. During this session, the teacher was also introduced to the procedures for student training and data collection to ensure procedural consistency.

Student Training. The following day, the classroom teacher led a student training session using a scripted guide provided by the researcher (see Appendix L). The teacher introduced the Tootle challenge, explained how it worked, and modelled how to complete the tootle tickets. The four pro-social behaviours were introduced using visual representations, and students practised matching behaviours to the correct pictures in a game-like format. Role-play was used to model a scenario in which a student engaged in a prosocial behaviour, and the class completed a tootle card together on the board. Each student then completed an individual tootle ticket, which the teacher checked for accuracy.

The teacher introduced the daily Tootle rocket ship progress chart and explained the class goal of earning 10 tootles per day to receive a group reward. Students brainstormed teacher-approved reward options and voted on their preference, selecting a Danny Go YouTube dance video. At the teacher's request (as discussed during the initial interview), a tiered reward system was implemented. If the class met the daily goal for five days, they would earn a second reward (15 minutes of free choice time in the classroom). A final reward of an ice block was offered if all 10 stars surrounding the progress rocket were earned.

Tootling Intervention. The Tootling intervention was implemented as described in the Independent Variables section. The intervention remained in place for four weeks, with no deviations from the planned procedures. Each morning, the teacher reminded students of the Tootling goal (10 tootles per day), clarified expectations, and addressed any student questions. Students were allowed to complete up to two tootles per day, outside of mat time, and submitted them to the Tootle box. At the end of each day, the teacher reviewed and verified the tootles for accuracy, then updated the class progress chart accordingly. When the goal was reached, the class received their selected group reward. Rewards for reaching longer-term goals (five and ten days of success) were delivered as planned. A second intervention phase with an increased goal was scheduled but did not occur due to teacher illness.

Social Validity

Teacher BIRS. Following the intervention, the classroom teacher completed the Modified Behaviour Intervention Rating Scale (BIRS) independently and returned it to the primary researcher (see Appendix S).

Student CIRP. Students were offered the opportunity to participate voluntarily in the modified Children's Intervention Rating Profile (CIRP), completed anonymously during class time (See Appendix T). Those who chose not to participate continued with their regular classroom activities. Due to the students' young age and varying reading abilities, the primary researcher read each item aloud to 1–2 participants at a time, explaining the available response options using the adapted emoji-based Likert scale described in the Materials section.

Interobserver Agreement

Interobserver Agreement (IOA) was calculated to assess the reliability of observational data collected by the primary researcher and a trained secondary observer (Burton, 2018). The secondary observer was a Master of Applied Psychology student under the same thesis supervisor. IOA data were collected for 20–30% of sessions in each phase, consistent with recommendations to sample at least 20% of sessions per phase (Burton, 2018; Cooper et al., 2020).

The trained observer was provided with randomly ordered video recordings to ensure blinding to condition and reduce bias. Prior to formal IOA data collection, the primary researcher conducted a structured training session. This included a review of the data collection sheets and operational definitions, guided practice using 2–3 videos, and collaborative scoring with discussion of ambiguities (e.g., AEB, praise, or IoH marking decisions). Modelling, joint marking, and clarification were used to ensure consistency. During the IOA process, the observer remained in contact with the researcher for clarification, including one follow-up in-person session.

IOA was collected for three sessions on student AEB and teacher-delivered praise and reprimands (20% of baseline and 28.5% of intervention sessions). IOA for teacher IoH was collected

during one intervention session. A criterion of ≥80% agreement was set for IOA validity; any session falling below this threshold triggered review and retraining.

Interval-by-interval IOA was used for AEB and teacher Indices of happiness. This was calculated by dividing the number of agreements by the total number of agreements plus disagreements, multiplied by 100 (Cooper et al., 2020). For Teacher praise and reprimand, total count IOA was used, calculated by dividing the smaller count by the larger count, multiplied by 100.

Table 1

Mean IOA Scores for Student and Teacher Behaviour in Classroom A

Type of Behaviour	**Mean IOA scores % (range)**				
Student AEB	**TS1**	**TS2**	**TS3**	**TS4**	**Peers**
Baseline	90 (no range)	95 (no range)	95 (no range)	90 (no range)	97.5 (95–100)
Tootling	97.5 (95–100)	95 (90–100)	87.5 (80–95)	95 (90–100)	85 (no range)
Across AB	95	95	90	93	91.25
Teacher A	**BSP**	**NSP**	**Reprimand**	**IoH Smiling**	**IoH Approving**
Baseline	80 (no range)	75 (no range)	81 (no range)		
Tootling	100 (no range)	87.5 (75–100)	82 (81–83)	90	80
Across AB	93	83	82		

Note. AEB = Academically Engaged Behaviour. BSP = Behaviour-Specific Praise. NSP = Non-Specific Praise; IoH = Indices of Happiness

IOA data was collected for three of the 12 total sessions in Classroom A. One baseline session (20%) and two intervention sessions (28.6%), with an overall IOA taken for 25% across both phases, meeting the recommendation that at least 20% of observation should have IOA calculated (Kennedy, 2005).

Table 1 shows the mean IOA scores (and ranges) for student AEB, teacher praise and reprimand, and teacher IoH, across both phases. Overall, IOA for student AEB and teacher Indices of Happiness met or exceeded the 80% acceptability threshold, indicating adequate interobserver agreement for this behaviour. Although the overall IOA for teacher praise and reprimands were above the 80% acceptability threshold, individual sessions fell below it (IOA sessions 1 and 3). In both sessions, discrepancies of one to two recorded instances occurred; however, due to low

frequency of these behaviours, such small differences substantially reduced the IOA percentage. For example, in IOA session 3, the primary researcher recorded four instances of NSP, whereas the secondary observer noted only three, resulting in a IOA of 75%.

Data Analysis

Visual Analysis. Following each observation session, raw data were entered into a Microsoft Excel spreadsheet, and visual analysis was conducted to evaluate level, trend, and variability within and between conditions (Cooper et al., 2020). This analysis guided decisions around the timing of intervention introduction and was used to assess whether a functional relationship existed between the independent and dependent variables (Kratochwill et al., 2010).

For academically engaged behaviour (AEB), the percentage of intervals with on-task behaviour was calculated by dividing the number of intervals in which the student was on-task by the total number of intervals where the student was present (i.e., visible in the video footage), then multiplying by 100.

Teacher-delivered praise and reprimands were tallied and converted into rates per minute by dividing the total frequency of each behaviour type by the session length (20 minutes).

Teacher Indices of Happiness (IoH) were calculated by dividing the number of intervals in which each target behaviour occurred by the total number of observed intervals and multiplying by 100 to yield a percentage occurrence.

Effect Size Calculations. Effect size was calculated to determine the magnitude of the Tootling intervention's impact on student academically engaged behaviour (AEB) and teacher-delivered praise and reprimands (Field, 2017). Several effect size methods have been used in prior Tootling research, including Non-overlap of All Pairs (NAP; Parker & Vannest, 2009) and Baseline Corrected Tau (BC-Tau; Tarlow, 2017). NAP provides a non-overlap score between phases but does not adjust for data trends. BC-Tau offers more advanced correction options for baseline trends and uneven phase lengths. However, as no significant baseline trends were detected in this study, the simpler Tau-U method without baseline correction was selected. This aligns with several recent

Tootling studies (e.g., Lum et al., 2019; Powell, 2020; Enright, 2023) and supports conservative, non-parametric effect size estimation.

Tau-U evaluates non-overlap between baseline and intervention phases and adjusts for baseline trend only if required (Parker et al., 2011). Effect sizes were calculated using an online Tau-U calculator developed by Vannest et al. (2020). Interpretation followed Cooper et al.'s (2020) guidelines: +0.20 = small effect, +0.50 = moderate effect, and +0.80 or above = large effect. Negative scores indicated a reduction in the target behaviour during the intervention.

Study 2

Participants and Setting

Classroom B. Classroom B was a general education Year 5-6 class within the same primary school as in Study 1. It consisted of 26, 9- to 11-year-old students; 12 female and 14 males. 46% of students identified as NZ European, 23% identified as Māori, 8% of students identified as either African or SE Asian, and 5% identified as either Indian, Pasifika, or other European. The teacher was a 22-year-old female of NZ European descent. This was her third term teaching, as a beginning teacher.

Target Student 1 (B-TS1, Hereafter Referred to as "Harper). Harper was a 9-year-old female of NZ European descent. She was nominated due to a high rate of off-task behaviours, and high levels in both disruptive, and anti-social behaviours.

Target Student 2 (B-TS2, Hereafter Referred to as "Hanish"). Hanish was a 10-year-old male of Indian descent. He was nominated due to high levels of disruptive, off-task behaviours.

Target Student 3 (B-TS3, Hereafter Referred to as "Ryder"). Ryder was a 10-year-old male of NZ European descent. He was nominated due to high rates of off-task behaviour.

Research Design

Study 2 was a replication of Study 1, with the following differences:

It employed a multiple-treatment single-case design, which followed an A–B–B+C–B+D–B+E–A–B+E sequence, comprised of the following phases:

- **A**: Baseline

- **B**: Tootling
- **B+C**: Tootling + Respect focus
- **B+D**: Tootling + Resilience focus
- **B+E**: Tootling + Responsibility focus
- **A**: Withdrawal phase (return to baseline)
- **B+E**: Reintroduction of Tootling

Three to four weeks following the final intervention phase, two to three follow-up observations were conducted to assess maintenance effects.

Materials

Teacher Interview. The structured interview followed the same format as in Study 1, with an additional focus on how Teacher B expected the four school values to be demonstrated (See Appendix U).

Data Collection.

Student AEB. Study 1's data collection forms were adapted to observe three target students (TS) and three comparison students (CS; see Appendix V).

Tootling.

Teacher Tootling Script. Study 1's script was adapted to incorporate the values-specific focus component (See Appendix W). Students discussed examples and non-examples of the four school values.

Tootle Slips. Pre-printed (90mm x 105mm) slips were available on each table (See Appendix X). Each slip included spaces for the student's and their peer's names, a tick-box section featuring the official school emblems for the four (Take Responsibility – Haepapa; Act Respectfully – Whakaute; Building Positive Relationships – Whakawhanaungatanga; Show Resilience – Aumangea), and a set of three pre-determined behaviours under each value. These behaviours were developed alongside the classroom teacher to encourage student buy-in, particularly for students reluctant to write. Students could tick one of the suggested behaviours or write their own. A correctly

completed tootle ticket included the student's name, their peer's name, one selected school value, and one selected or written behaviour.

Tootle Box. A white plastic lidded box (180mm x 140mm) was set on an accessible shelf beside the teacher's workstation.

Tootle Progress Chart. An A3-sized laminated chart was displayed on the whiteboard, featuring a colourful number grid (1-60, arranged in rows of 10) and six rows of five yellow stars (See Appendixx Y). The chart featured a movable smiley face progress indicator, which tracked the daily number of tootles. When the class goal was met, a sticker could be placed on one of the stars to mark progress.

Integrity Checklists.

Training Integrity. A 13-item checklist (adapted from Study 1) was used to ensure the primary researcher appropriately trained the classroom teacher to implement the Tootling intervention (see Appendix Z). A 10-item training integrity checklist, also adapted from Study 1, was used to confirm that the teacher accurately delivered the student training session (see Appendix AA).

Treatment Integrity. A 10-item daily checklist (Appendix AB) was provided to the teacher to ensure fidelity during the initial Tootling phase. Three additional 12-item checklists were developed for each modified intervention condition: Tootling + Respect (Appendix AD), Tootling + Resilience (Appendix AF), and Tootling + Responsibility (Appendix AH).

The primary researcher used parallel 10-item checklists to monitor teacher adherence during each intervention condition: Tootling (Appendix AC), Tootling + Respect (Appendix AE), Tootling + Resilience (Appendix AG), and Tootling + Responsibility (Appendix AI).

During the withdrawal phase, both the teacher and primary researcher completed a shared 3-item checklist to confirm that all intervention-related materials were removed (Appendix AJ).

Dependent Variables

Student Behaviours. The primary and secondary dependent variables were the same as in Study 1. An additional secondary dependent variable was the frequency of daily tootle submissions, categorised by school value.

Daily Values-Focused Tootles. Each day, the teacher collected correctly completed tootles (as defined during teacher training) and placed them into a zip-lock bag labelled with that day's date. The daily total was recorded on the corresponding integrity checklist (see Appendices AB, AD, AF, AH). The primary researcher later analysed these tootles by categorising them according to the school value selected. A digital tracker was used to monitor who submitted and who received tootles (Appendix A). A tootle was considered valid if it included: the name of the student submitting the tootle, the name of the peer being tootled, one selected school value, and either one corresponding pre-printed behaviour ticked or one written behaviour aligned with the chosen value.

Independent Variables

As in Study 1, Tootling was the independent variable, with four variants.

Tootling-Alone. This phase followed the same positive peer reporting structure as in Study 1, incorporating public posting and an interdependent group contingency. Unlike the fixed criterion in Study 1, the daily reward threshold was randomly determined by a student each morning, using laminated tiles numbered 20–60. At day's end, the total number of correctly completed tootles was counted. If the class met or exceeded the randomly selected "secret" goal, a sticker was placed over a star on the class progress chart. Whole-class rewards were earned upon reaching six and twelve stars, at which point the chart was reset. If the criterion was not met, the remaining total was carried over and added to the following day's tally. A selection of Tootles were read out each afternoon, and praise issued.

Tootling + Respect Focus. This phase extended the Tootling-alone intervention by incorporating explicit instruction and praise related to the school value *Acting Respectfully – Whakaute*. On the first day of the phase, the teacher delivered a values lesson, co-constructing with

students what respectful behaviour looked like in the classroom. Across the following two weeks, the teacher delivered praise specifically for observed respectful behaviours. At the end of each day, only tootles referencing the Respect value were read aloud to the class, although all correctly completed tootles (regardless of value) contributed to the group reward system.

Tootling + Resilience Focus. This phase mirrored the structure of the previous condition, with a focus on *Showing Resilience – Aumangea*.

Tootling + Responsibility Focus. The final intervention condition focused on *Taking Responsibility – Haepapa*, following the same pattern as previous phases.

Observation Methods

Observation procedures for academically engaged behaviour (AEB), teacher-delivered praise and reprimands, and teacher indices of happiness (IoH) were consistent with those used in Study 1. Dissimilar to Study 1, in this study three target students (TS1–TS3) and three comparison students were included in each session. All data collection definitions, coding procedures, and recording systems were identical to those previously described in Study 1.

Data Collection

All observations were video recorded using the same three-camera setup as described in Study 1.

Student AEB. Observations were conducted 4–5 times per week over a 14-week period (12 school weeks plus a 2-week term break). Two follow-up maintenance sessions were completed 4–5 weeks after the final intervention phase. Session times were selected using the same criteria and schedule as in Study 1: observations occurred directly after morning tea during the class's literacy block (reading and/or writing), and sessions involving a relief teacher were excluded. A total of three target students were observed; absences occurred as follows: TS1 (once), TS2 (seven times), and TS3 (five times).

Procedure

Initial Interview. The teacher interview procedure mirrored that of Study 1, with additional discussion of how the four school values were expected to be demonstrated in the classroom.

Preliminary Observation. Following the same format as in Study 1, the primary researcher observed the class three times during one week prior to baseline.

Baseline. The baseline phase followed the same procedures as in Study 1, with observations conducted during the middle Literacy block.

Teacher Training. The teacher training procedure mirrored that of Study 1 and was conducted after the final baseline observation. As part of Study 2's focus, the teacher also described behaviours that exemplified the four school values.

Student Training. Student training followed a scripted session (Appendix W), as in Study 1, with adaptations to incorporate the school's values. The teacher introduced the Tootling challenge, modelled ticket completion, reviewed the school value emblems, and engaged students in identifying behaviours aligned with each value. Students participated in a game-like matching task and role-played prosocial behaviours before independently completing sample tootle tickets for teacher review. The class then reviewed the Tootle progress chart and collectively selected group rewards: a Kahoot! session for achieving six goals, and an extended PE game for reaching twelve.

Tootling-Alone Intervention. Following student training, the Tootling intervention was implemented. Each table received a wooden holder containing up to eight tootle tickets. Students were encouraged to submit up to two tootles per day recognising peers demonstrating the school values. Each morning, a randomly selected student drew the secret daily goal (ranging from 20 to 60) from a bag of laminated tiles. This target remained hidden from both students and the teacher until the end of the day. At day's end, the teacher reviewed and discarded any incomplete tootles, counted the valid entries with the class, and revealed whether the goal had been met. If successful, a sticker was added to the class progress chart. Upon achieving six daily goals, the class received a chosen reward (a Kahoot! game); after 12, a larger reward was issued (a half teaching block of PE).

Any tootles submitted beyond the goal were carried over to the next day. To reinforce prosocial behaviour, the teacher read aloud 3–4 selected tootles daily, providing praise or feedback.

Tootling + Respect Focus. This phase continued the Tootling-alone intervention, with an added emphasis on the school value *Acting Respectfully – Whakaute*. Students submitted tootles as in the previous phase. At day's end, the teacher selected a few Respect-related tootles to read aloud and invited several students to share the tootles they had written.

Tootling + Resilience Focus. This phase followed the same procedure as the Respect Praise condition, with the value focus shifted to Showing Resilience – Aumangea.

Tootling + Responsibility Focus. This final values-based phase replicated previous procedures, with the emphasis on Taking Responsibility – Haepapa.

Withdrawal. During the withdrawal phase, all Tootling materials (tootle cards, box, and progress chart) were removed from the classroom.

Re-implementation Tootling-Alone. Following the withdrawal phase, the Tootling-alone condition was reinstated. All materials were reintroduced, and the intervention proceeded for two weeks (eight sessions). No systematic fading procedures were implemented. At the conclusion of data collection, the teacher was given the option to continue the intervention at her discretion, including ongoing use of tootle cards and public tootle readings. The teacher elected to continue with the Tootling alone condition, independently.

Follow Up. Two follow up sessions were observed four weeks following the final observed session, to examine whether effects were maintained under teacher-implemented conditions.

Social Validity

Teacher BIRS. The teacher completed the same Modified Behaviour Intervention Rating Scale (BIRS) as described in Study 1 (see Appendix R).

Student Rating. Students were invited to anonymously complete the same modified CIRP used in Study 1 (see Appendix AL), with the only change being the use of a visual smiley face 6-point

Likert scale instead of 5 (ranging from Strongly disagree (), to strongly agree (). All other administration procedures remained consistent.

Interobserver Agreement

Interobserver agreement (IOA) procedures, observer training, calculation methods, and agreement criteria were identical to those used in Study 1. IOA data were collected for 11 of the 41 sessions (27%, range = 20–33%) across all phases, meeting the recommended ≤ 20% sampling criteria. This included one baseline session (33%), and one to two sessions (20–33%) from each intervention phase.

Table 2

Mean IOA Scores for Student and Teacher Behaviour in Classroom B

Type of Behaviour	**Mean IOA scores % (range)**				
Student AEB	**TS1**	**TS2**	**TS3**	**Comparison Students**	
Baseline	90 (no range)	90 (no range)	85 (no range)	80 (no range)	
Tootling-Alone	90 (no range)	90 (no range)	90 (no range)	73 (no range)	
Tootling + Respect	93 (90–95)	95 (90–100)	85 (no range)	74 (68–80)	
Tootling + Resilience	90 (85–95)	93 (85–100)	93 (90–95)	74 (70–78)	
Tootling + Responsibility	95 (no range)	93 (90–95)	88 (80–95)	73 (no range)	
Baseline	88 (85–90)	95 (90–100)	88 (80–95)	74 (68–80)	
Return to Tootling	100 (no range)	95 (no range)	80 (no range)	87 (no range)	
Across phases	92	93	87	76	
Teacher A	**BSP**	**NSP**	**Reprimand**	**IoH Smiling**	**IoH Approving**
Baseline	100 (no range)	83 (no range)	80 (no range)	85 (no range)	80 (no range)
Tootling-Alone	100 (no range)	100 (no range)	82 (no range)		
Tootling + Respect	100 (no range)	93 (86–100)	90 (80–100)		
Tootling + Resilience	100 (no range)	92 (83–100)	90 (80–100)		
Tootling + Responsibility	95 (89–100)	88 (75–100)	83 (75–91)	90 (85–95)	85 (80–90)
Baseline	100 (no range)	87 (86–87)	100 (no range)	95	95
Return to Tootling	100 (no range)	100 (no range)	100 (no range)	95	100
Across phases	**99**	**92**	**89**	**93**	**93**

Note. AEB = Academically engaged behaviour; BSP = Behaviour-Specific Praise; NSP = Non-Specific Praise; IoH = Indices of Happiness.

Overall IOA for all teacher praise, reprimand, and Indices of Happiness behaviours exceeded the 80% threshold for acceptable Interobserver agreement. Overall IOA for AEB of all four target students also exceeded the acceptability criteria. However, IOA for comparison student AEB data frequently fell below the acceptability criteria. This was due to the inconsistent manner in which comparison student data were collected, as discussed further in the limitation section of this thesis. Although the mean IOA for comparison student AEB across phases (76%) was slightly below the threshold, average AEB scores did meet or exceed the 80% agreement.

Data Analysis

Visual Analysis. Visual analysis procedures mirrored those described in Study 1.

Effect Size Calculations. Effect size was calculated using the same Tau-U method and criteria outlined in Study 1.

Results

Measures of Integrity

Training Integrity.

During all teacher- and student-training sessions, both Classroom A and Classroom B's training integrity scores were 100%.

Treatment Integrity

Classroom A. Five teacher-rated treatment integrity checklists were completed, resulting in an average score of 100%. Researcher-rated treatment integrity checklists completed during observation sessions, differed from those checked by the teacher. During all seven observed treatment sessions, the tootle box was accessible (100%); and there were 4+ tootle tickets of each colour available on each table (100%). The progress chart was visible every session (100%), however, on only four occasions had it been updated (57%). During every observation, the researcher saw students actively submitting tootles, and the tootle box was full to over-flowing. The researcher was not present during the designated tootle counting, and reward issuing time, therefore they cannot confirm whether these steps reliably occurred. The Researcher-rated treatment integrity suggests a lower score of treatment integrity, with a mean score of 60% of the observable criteria.

Classroom B. The teacher was diligent and completed the treatment-integrity checklists on 38 of the observed sessions (90.5%) (excluding Days 11, 22, 39 and 40). Teacher-rated treatment-integrity for the initial Tootling phase, was calculated to have a mean score of 97.6%, aligning with researcher-rated integrity scores. During this phase, she missed reading out the tootles on Day 7. During all values-specific focus intervention phases, the teacher recorded 100% integrity in completing Steps 1-5, and 7-10. The teacher self-reported issuing values-specific praise (Step 6) on only 50% of the days; however, research integrity records indicated the occurred only 0–2 instances per condition, based on the 20 minute observation windows, compared to the full school day. The teacher read aloud values-specific tootles (Step 11) or asked students to share their tootles (Step 12) during 81.8% of these intervention dates.

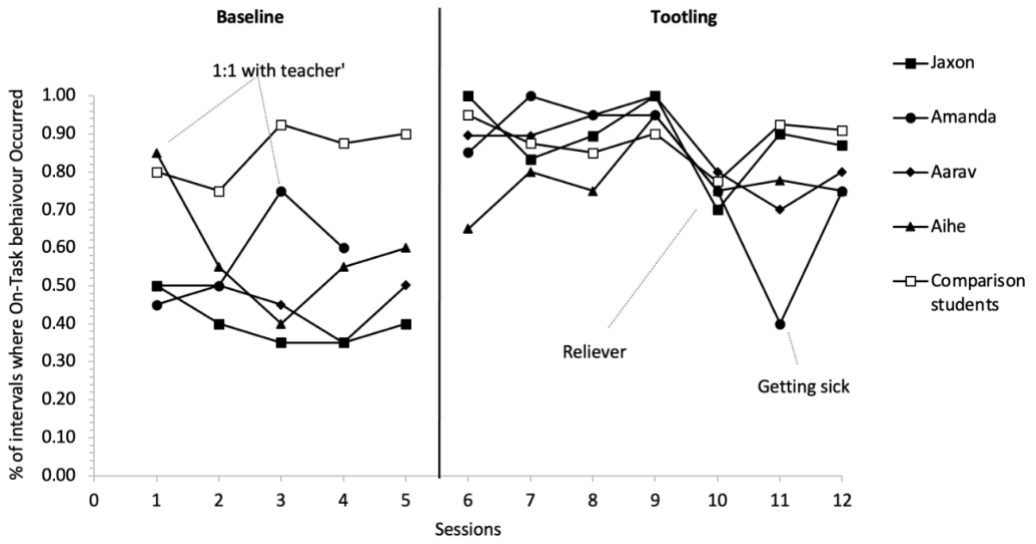
Student Behaviour

Academically Engaged Behaviours (AEB)

Classroom A. Academically engaged behaviour (AEB) was the primary dependent variable measured In Study 1. Figure 1 illustrates the percentage of AEB demonstrated by all target students and their peers (Comparison students) during each observed session, across both conditions in Classroom A. Visual analysis of Figure 1 revealed that Comparison students maintained consistently high levels of AEB across both baseline and intervention phases (*M* = 87%, range = 75-98%). This limited change may reflect a ceiling effect, whereby already high levels of AEB limited the potential for further observable improvement. However, a functional relationship could not be established due to the implementation of an A-B design.

Figure 1

Percentage of Academically Engaged Behaviours for Target Students and Comparison Students Across Conditions in Classroom A



Jaxon. During the baseline phase, Jaxon demonstrated consistently low and stable levels of academically engaged behaviour (AEB), with a mean of *M* = 40% (range = 35-50%). His data exhibited minimal variability and no discernible trend across the five baseline sessions. Upon implementation of the Tootling intervention, Jaxon's AEB increased sharply in Session 6 and

remained high and stable throughout the intervention phase, averaging *M* = 82% (range = 70–100%). The only exception was a brief dip to 70% in Session 11, which coincided with the presence of a relieving teacher. The level change was immediate and sustained, with no overlap between baseline and intervention data.

Amanda. Amanda's baseline AEB showed moderate variability, with a mean of *M* = 58% (range = 45 - 75%). Her highest score occurred during a one-on-one teaching session (Session 3), while the remaining sessions fell between 45% and 60%. Following the introduction of Tootling, Amanda's AEB increased, with a mean of *M* = 81% (range = 40-100%). A positive upward trend was observed early in the intervention, although it temporary dipped in Session 10, when a reliever was present, followed by a further decrease in Session 11 (40%), which preceded her absence due to illness. Despite these two atypical data points, Amanda's data displayed a clear level change and low overlap between phases.

Aarav. Aarav exhibited low and stable baseline AEB, with a mean of *M* = 46%, with little variability or trend within the baseline phase (range = 35-50%). Following the introduction of Tootling, his AEB rose sharply in Session 6 (from 50% to 89%) and remained consistently high across the intervention phase (*M* = 86%, range = 70-100%). A brief dip occurred during Sessions 10 and 11, possibly due the presence of a reliever on Session 10 (80% and 70%, respectively), before rebounding on Session 12. His intervention data were otherwise stable and markedly higher than baseline. The visual analysis shows a strong, sustained phase change with no overlapping data points.

Aihe. Aihe's baseline AEB showed some variability (*M* = 59%, range = 40% to 85%), however when disregarding Session 1's data (85%), which was taken while she was working one-on-one with the teacher, her baseline AEB levels were similar to the other target students (*M* = 53%, range = 40-60%). After the introduction of Tootling, Aihe's AEB levels increased slightly from 60% to 65%. This upward trend continued, resulting in *M* = 78% (range = 65-95%), though notable variability persisted, indicating some fluctuation in response rates. Despite this, a clear level change was evident, with low levels of overlap between phases.

Effect Size. Mean AEB values, ranges, and corresponding Tau-U values are presented in Table 3. These data summarise the phase-level changes between conditions for each student and the comparison group. As baseline trends were not present, no correction was applied. Data from a reliever-taught session (Session 11) were excluded from analysis for all participants, to avoid a potential confound (see Tables 3).

Table 3

Mean Ratings and Tau-U Scores for the Academically Engaged Behaviour (AEB) of Target Students and Comparison Students Across Conditions in Classroom A

	Comparison Students		Jaxon		Amanda		Aarav		Aihe	
	Mean (Range) %	Tau-U	Mean (Range) %	Tau-U	Mean (Range) %	Tau-U	Mean (Range) %	Tau-U	Mean (Range) %	Tau-U
Baseline	85 (75–93)	0.43	40 [35–50]	1.00**	58 [45–75)	1.00**	46 (35–50)	1.00**	59 (40–85)	1.00**
Tootling	88 (78–98)		82 (70–100)		81 (40–100)		86 (70–100)		78 (65–95)	

** Very large

Tau-U analysis for the Comparison students showed minimal change between phases (Tau-U = 0.43). In contrast, Jaxon's and Aarav's data each demonstrated very large effect sizes (Tau-U = 1.00). To avoid further potential confounds, two additional sessions were excluded from Amanda's analysis: Session 3, when she received one-to-one teacher support, and Session 11, when she was becoming ill. Amanda's Tau-U score also indicated a very large effect size (Tau-U = 1.00). For Aihe, data from Session 1 (when she received individual teacher support) was excluded, resulting in a Tau-U score of 1.00, also reflecting a very large effect size.

Classroom B. Academically engaged behaviour (AEB) was the primary dependent variable measured in Study 2. Figure 2 displays session-by-session percentage for each target student and the comparison group across all seven phases: Baseline, Tootling-alone, Tootling with Respect focus,

Tootling with Resilience focus, and Tootling with Responsibility focus, followed by Withdrawal, and Return to Tootling phases and a follow-up session.

Visual analysis revealed that Comparison students' AEB increased between baseline and the initial Tootling phase and remained consistently high across all subsequent phases. The average AEB rose from *M* = 67% (range = 52-77%) during baseline to 92% (range = 88-95%) during the first Tootling-alone phase. Performance remained high across each intervention phase, with means consistently above 85%. During Return to Baseline, mean AEB dipped to *M* = 75 (range = 58–85%), before increasing to *M*= 86% (range = 68–98%) upon reimplementation of the intervention, and remained high during the follow up session.

Harper. Harper demonstrated stable, low-level AEB across all baseline sessions (*M* = 34%, range = 28 - 40%). With the introduction of Tootling-alone, her AEB increased substantially to *M* = 69% (range = 57-78%). During each subsequent intervention phase, Harper's AEB remained stable or increased further (range = 45-95%), reaching *M* = 76% during the final Tootling-alone phase. Her data showed low variability, minimal overlap across phases, and evidence of maintenance during the follow-up session.

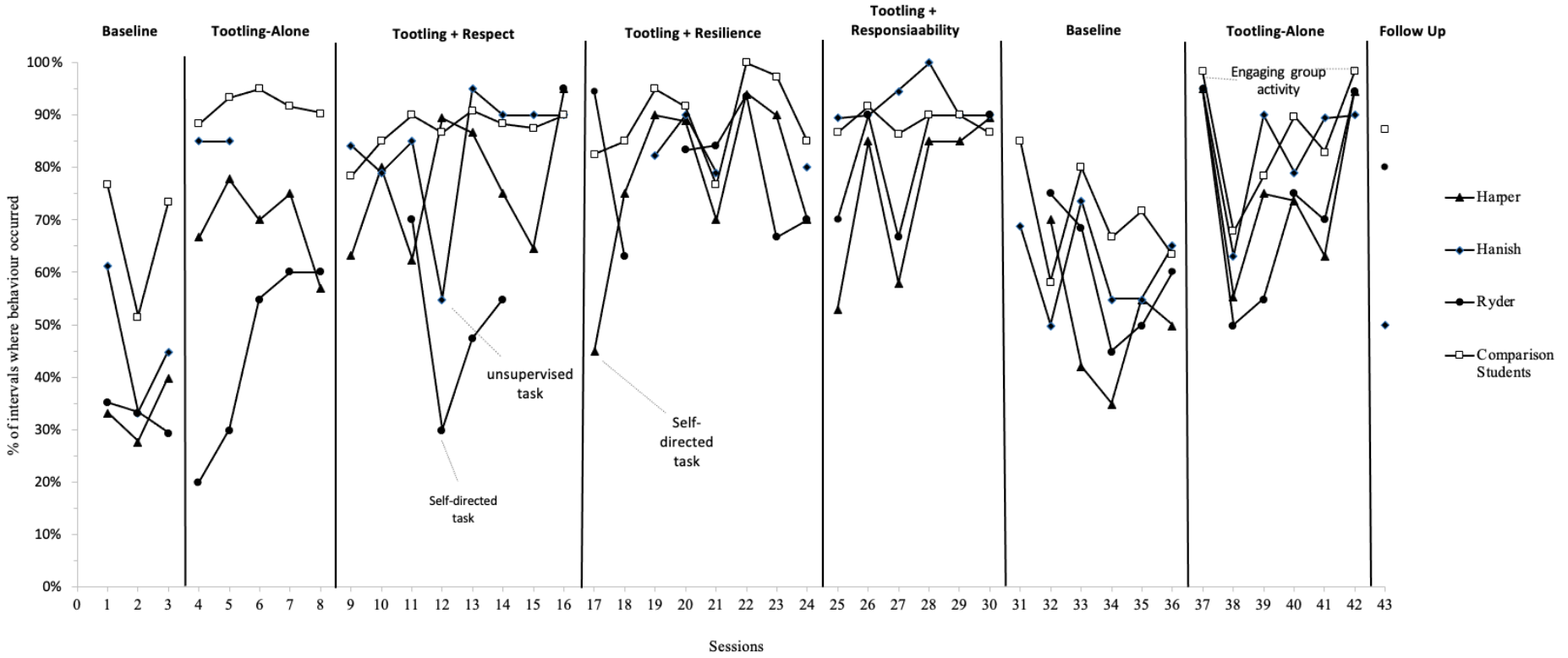
Hanish. Hanish's AEB at baseline was moderate (*M* = 46%, range = 33-61%) but showed some fluctuation. Upon introduction of Tootling-alone, his engagement increased sharply to *M* = 85% (range = 85-85%) and remained consistently high across all intervention phases (*M* = 84–92%, range = 55-100%). His AEB returned to above 80% in the Return to Tootling phase and follow-up. His data suggest a strong response to intervention and maintenance of AEB during the follow up session.

Ryder. Ryder demonstrated the lowest baseline AEB among all participants, with an average of 33% (range = 29-35%). Visual analysis showed that his AEB increased following the introduction of Tootling-alone (*M* = 45%, range = 20-60%) and continued to improve during subsequent phases (*M* = 59–89%). His data showed more variability than the other target students, with dips corresponding to task types (e.g., unsupervised or non-preferred tasks). Despite this variability, Ryder's levels of

AEB displayed a gradual upward trend over time, with increasing stability in the final intervention and follow-up sessions (*M* = 80%).

Figure 2

Percentage of Academically Engaged Behaviours for Target Students and Comparison Students Across Conditions in Classroom B



Effect Size. Table 4 presents mean AEB values and ranges across each phase for all target and comparison students in Classroom B, along with uncorrected Tau-U values comparing baseline to the initial Tootling-alone phase. Tau-U analyses for the comparison students, Harper and Hanish all indicated very large effects between baseline and the initial Tootling-alone phase (Tau-U = 1.00). Although not formally reported, subsequent phases continued to yield large-to-very large effect sizes. Ryder demonstrated a moderate effect between baseline and the initial Tootling-alone phase (Tau-U = 0.33).

Table 4

Mean Ratings and Tau-U Scores for the Academically Engaged Behaviour of Target Students and Comparison Students Across Conditions, in Classroom B

Phase	Comparison Students (CS)		Harper		Hanish		Ryder	
	Mean (Range) %	Tau-U	Mean (Range) %	Tau-U	Mean (Range) %	Tau-U	Mean (Range) %	Tau-U
Baseline	67 (52–77)		34% (28–40)		46 (33–61)		33 (29–35)	
Tootling-Alone	92 (88–95)	1.00**	69 (57–78)	1.00**	85 (85–85)	1.00**	45 (20–60)	0.33
Tootling + Respect	87 (78–91)		77 (63–95)		84 (55–95)		59 (30–95)	
Tootling + Resilience	89 (77–100)		78 (45–94)		83 (79–90)		79 (63–94)	
Tootling + Responsibility	89 (86–92)		76 (53–89)		92 (89–100)		89 (67–90)	
Withdrawal	75 (58–85)		58 (35–70)		66 (45–75)		66 (45–75)	
Tootling-Alone	86 (68–98)		76 (56–95)		84 (63–95)		86 (50–95)	
Follow up	87				50		80	

Note. Respect, Resilience and Responsibility conditions refer to the values-specific focus. ** Very large effect size.

Tootle Submission Patterns

This section explores patterns in student tootling behaviour across both classrooms, including submission rates, tootle formats, behaviours recognised, and individual participation.

Classroom A. Tootling patterns observed in Classroom A are presented in Table 5. Levels of participation varied across all students. Amanda submitted a relatively high number of tootles (*n* = 10) placing her among the top tootle submitters in the class (Comparison student range = 1-11). Aihe also submitted tootles at a higher-than-average rate (*n* = 8), followed by Jaxon (*n* = 5), and Aarav (*n* = 4). All four target students submitted tootles at or above the mean submission rate of their peers (*M* = 4). Among the comparison students, the highest number of submissions was 11, while seven students submitted only one or two tootles, indicating that all four target students were within the top 10 contributors in the classroom.

In contrast, analysis of tootle recipients showed that all four target students received fewer tootles than the comparisons student average (comparison peers *M* = 6; range = 1–12). Amanda and Aarav each received two tootles, while Jaxon and Aihe received only one across the entire intervention period.

Three of the four target students submitted tootles about all four prosocial behaviours, while Aarav submitted tootles about only two ("Did their work quietly" and "Used their kind words"). Their peers submitted across all four prosocial behaviours with relative consistency (*M* = 1-3 per behaviour). "Did their work quietly" was the most frequently reported behaviour for Amanda, Aarav, Aihe and the Comparison students, while "Helped someone" was the least frequently reported by Comparison students and three of the four target students (excluding Aihe).

Table 5
Tootles Submitted and Received by Target and Comparison Students in Classroom A

Pseudonym	Used their listening bodies	Helped someone	Did their work quietly	Used their kind words	Total submitted	Total received
Jaxon	2	1	1	1	5	1
Amanda	2	1	4	3	10	2
Aarav	0	0	3	1	4	2
Aihe	1	2	4	1	8	1
Comparison students						
M	2	1	3	2	4	6
Range	(0-3)	(0-2)	(0-6)	(0-3)	(1-11)	(1-12)

Classroom B. Classroom B students could submit tootles using either a tick box format, or written responses, allowing more detailed analysis of submission format, values recognised, and patterns of submission and receipt, as shown in Table 6.

Submission rates varied widely, with the comparison students submitting between 0 and 58 tootles (*M*= 22). Harper was the third highest overall submitter (*n* = 51), while Hanish was also within the top 10 (*n* = 29), both submitting tootles above the peer average. Ryder submitted a modest number (*n* = 9), thought still more than some of his peers.

All target students showed a preference for the tick-box format, consistent with Comparison students (Tick-box: *M* = 17, range = 0–50; Written: *M* = 4, range = 0–18). Harper submitted exclusively via tick-box, while Ryder reported eight of his nine tootle via this format). Hanish submitted 20 tick-box tootles and nine written submissions (one of highest counts in that format). His written tootles included the most detailed descriptions of behaviours in the class.

Patterns of reciprocal recognition also varied. Harper submitted 51 tootles but received 21, reflecting strong participation in the Tootling intervention. Ryder submitted and received a modest number (*n* = 9, and *n* = 8, respectively), showing lower engagement, but similar reciprocity. Hanish submitted 29 and received 26, reflecting a relatively balanced exchange. Comparison students submitted and received tootles at a similar rate to Hanish. On average, students submitted 20 tootles (range = 0–58) and received 21 tootles (range = 6–33).

Table 6

Tootles Submitted and Received by Target and Comparison Students in Classroom B

Student	Ticked	Written	Total submitted	Received
Harper	51	0	51	21
Hanish	20	9	29	26
Ryder	8	1	9	8
Comparison Students				
M	17	4	20	21
(range)	(0–50)	(0–18)	(0–58)	(6–33)

Number of Tootles for Each School Value Across Phases in Classroom B

Daily tootle slips submitted by students in Classroom B were sorted by school value and recorded for each session. As shown in Figure 3 and Table 7, during the initial Tootling-alone phase, average daily tootles for each value were comparable (Respect: *M* = 3.60, range = 1–6; Resilience: *M* = 3.60, range = 2–5; Responsibility: *M* = 3.80, range = 2–7). Upon the introduction of the Tootling + Respect focus phase (i.e. when Respect was the explicitly targeted value), Respect related tootles increased to a mean of 7.14 (range = 1–11), while other values remained low. This pattern continued: Resilience tootles peaked during the Tootling + Resilience focus phase (*M* = 10.70, range = 5–21), and Responsibility-related tootles increased sharply during the Tootling + Responsibility focus phase (*M* = 10.63, range = 7–18), with other values remaining relatively low.

Figure 3

Number of Tootles Submitted for Each School Value Across Tootling and Value-Focus Conditions in Classroom B

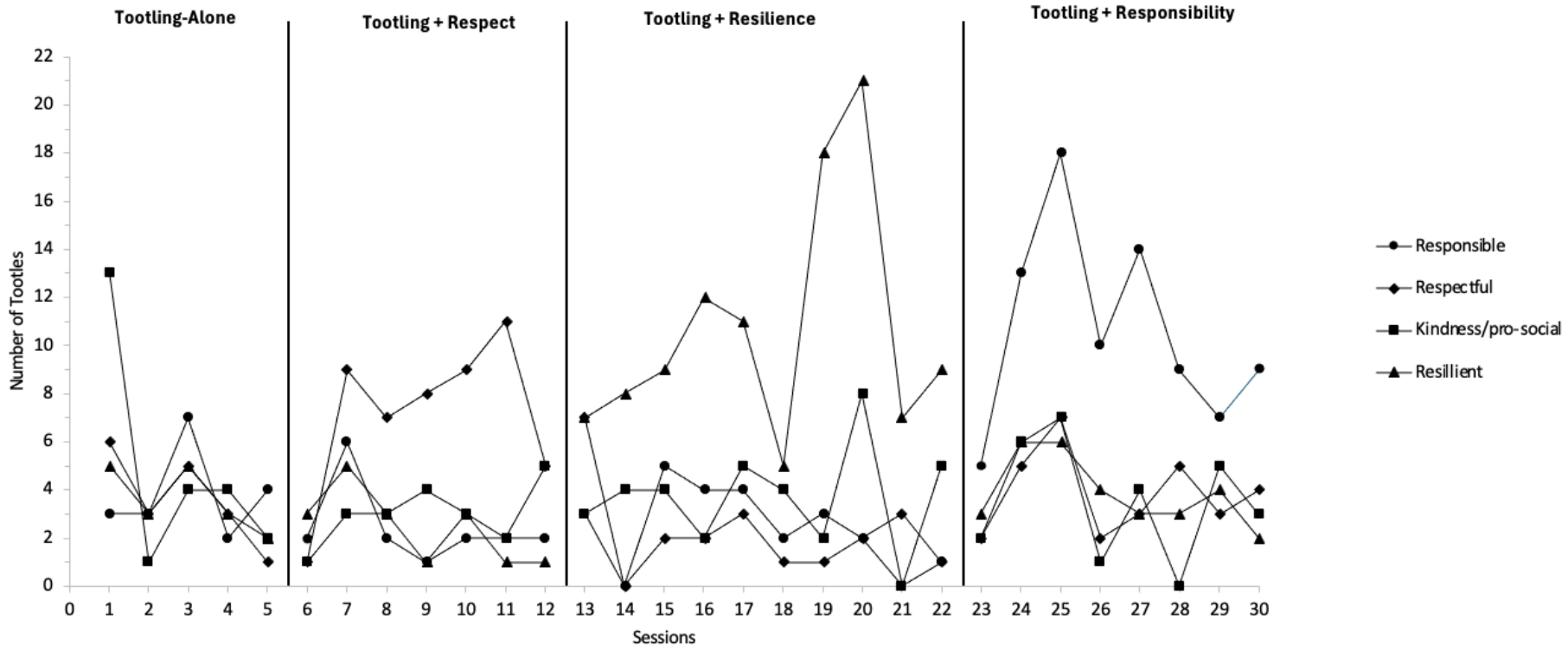


Table 7

Mean and Range of Daily Tootles Submitted for Each School Value Across Tootling and Value-Specific Focus Conditions in Classroom B

	Respect	Resilience	Responsibility
	M **(range)**	***M*** **(range)**	***M*** **(range)**
Phase	**%**	**%**	**%**
Tootling-Alone	3.60	3.60	3.80
	(1–6)	(2–5)	(2–7)
Tootling + Respect	7.14	2.43	2.43
	(1–11)	(1–5)	(1–6)
Tootling + Resilience	2.20	10.70	2.40
	(0–7)	(5–21)	(0–5)
Tootling + Responsibility	3.88	3.88	10.63
	(2–7)	(2–6)	(7–18)

Teacher Behaviours

Teacher Praise and Reprimands

Teacher A. Figure 4 and Table 8 illustrate combined rates of Behaviour-Specific Praise (BSP), Non-Specific Praise (NSP), and reprimands per minute across baseline and intervention phases. Overall, BSP remained relatively stable (*M* = 0.31 to 0.26), while NSP showed a more pronounced reduction (*M* = 0.39 to 0.14). Reprimands, the most frequently observed teacher response, also decreased (*M* = 2.88 to 2.12).

Figure 4

Rates of Teacher-Delivered Behaviour-Specific Praise (BSP), Non-Specific Praise (NSP), and Reprimands per Minute Across Conditions in Classroom A

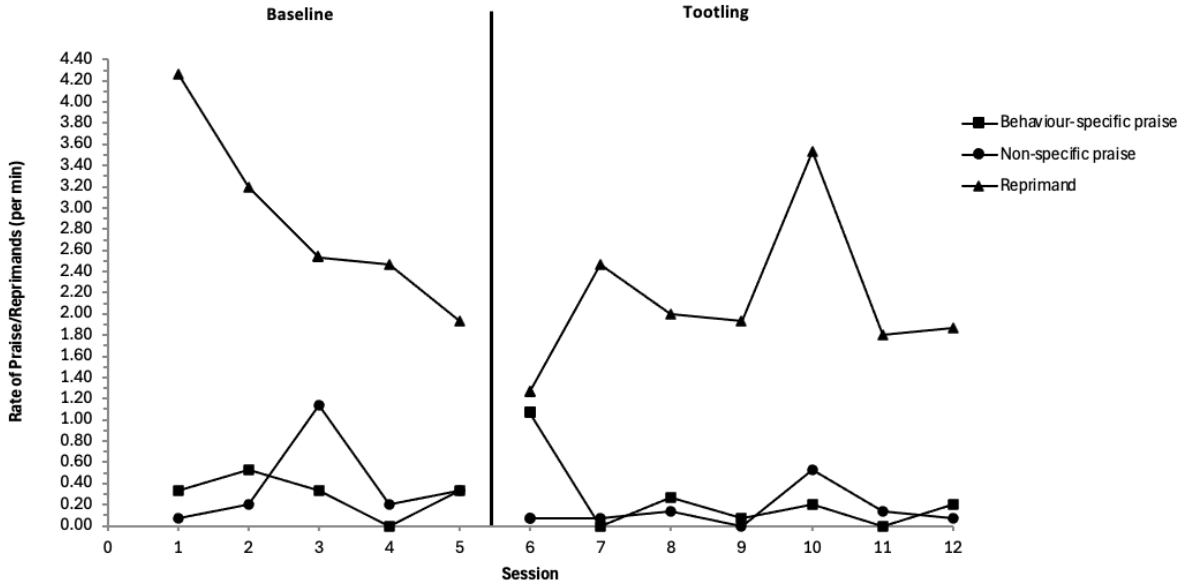


Table 8

Mean and Range of Teacher-Delivered Praise and Reprimands per Minute Across Conditions in Classroom A

	Baseline	Intervention
Response Type	*M* (range)	*M* (range)
BSP	0.31 (0.00–0.53)	0.26 (0.00–1.07)
NSP	0.39 (0.00–0.87)	0.14 (0.00–0.53)
Reprimand	2.88 (0.53–2.33)	2.12 (0.33–2.33)

Note. BSP = Behaviour-Specific Praise; NSP = Non-Specific Praise. Values are presented as rate per minute.

Teacher B. As shown in Figure 5 and Table 9, Teacher B delivered low but relatively stable levels of BSP across phases, including baseline, four value-specific intervention phases, and follow-

up, peaking during the Responsibility focus phase (*M* = 0.27). NSP increased sharply during the initial Tootling-alone phase (*M* = 0.53) before declining across later conditions. Reprimands followed a steady downward trend from baseline (*M* = 0.73) to the Return to Tootling phase (*M* = 0.18).

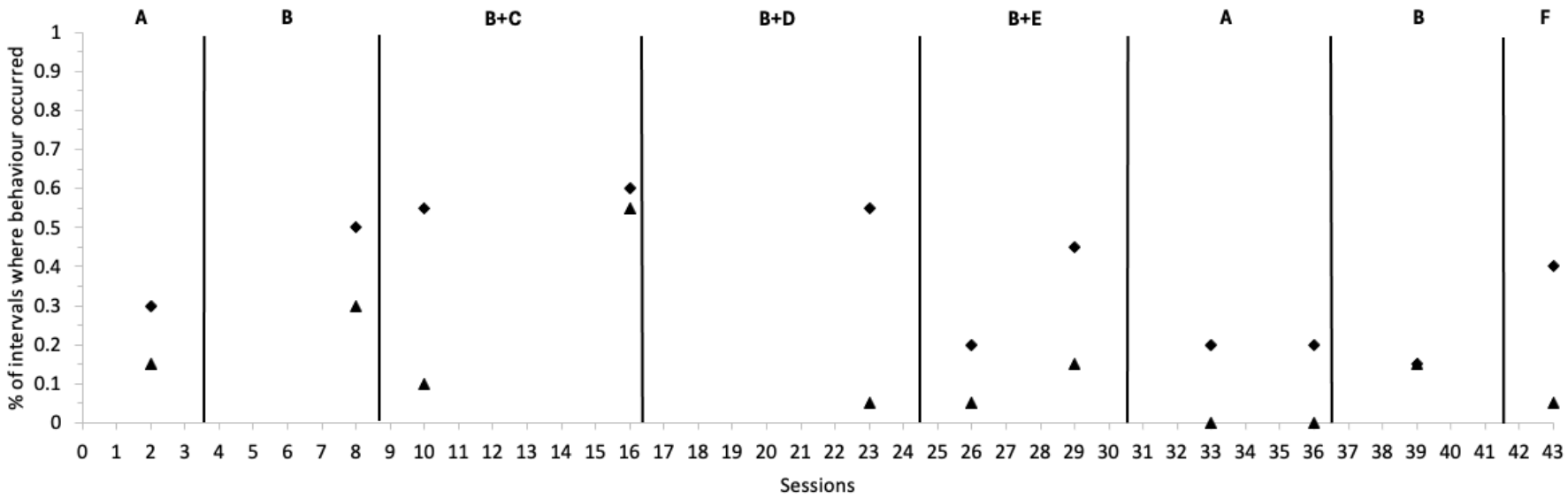
Table 9

Mean and Range of Behaviour-Specific Praise (BSP) per Minute Across Conditions in Classroom B

	BSP	NSP	Reprimands
Phase	*M* (range	*M* (range)	*M* (range)
Baseline	0.11 (0.00-0.20)	0.40 (0.00-0.53)	0.73 (0.07-1.00)
Tootling-Alone	0.08 (0.00-0.13)	0.53 (0.00-1.07)	0.45 (0.00-0.47)
Tootling + Respect	0.07 (0.00-0.20)	0.44 (0.00-0.80)	0.37 (0.00-0.40)
Tootling + Resilience	0.13 (0.00-0.73)	0.43 (0.00-0.80)	0.37 (0.00-0.47)
Tootling + Responsibility	0.27 (0.00-0.60)	0.36 (0.00-0.53)	0.32 (0.00-0.40)
Return to Tootling-Alone	0.15 (0.00-0.33)	0.32 (0.00-0.47)	0.18 (0.00-0.33)

Figure 5

Instances of Teacher-Delivered Behaviour-Specific Praise, Non-Specific Praise, and Reprimand Across Conditions in Classroom B



A: Baseline
B: Tootling-Alone
B+C: Toolting + Respect
B+D: Tootling + Resilience
B+E: Toolting + Responsibiiltiy
A2: Withdrawal
B2: Toolting-Alone
F: Follow up

Teacher Happiness

Teacher A. Teacher A's Indices of Happiness (IoH) were similar across conditions, with combined scores of 25% during baseline and 26% during the intervention phase, suggesting the Tootling intervention had minimal impact on her observable affect (See Table 10). Smiling and Approving gestures varied across both phases. During baseline, Smiling occurred in 10% of intervals, and Approving gestures in 40%. Both behaviours initially declined following intervention implementation (Smiling 0%, Approving 15%), but Smiling subsequently trended upward (*M* = 25%, [range = 0%–60%]). Approving gestures dipped temporarily to 10%, before rising to 55% by the final observed session. Given the probe data (one baseline and three intervention sessions), no formal trend analysis or statistical testing was conducted.

Table 10

Mean Rates of Indices of Happiness (IoH) – Smiling and Approving by Teacher A Across Conditions

Indices of Happiness	***M***
Baseline	
Smiling	10%
Approving	40%
Combined IoH	25%
intervention	
Smiling	25%
Approving	27%
Combined IoH	26%

Teacher B. Similar patterns were observed for Teacher B. As shown in Table 11, baseline data indicated low to moderate levels of smiling (*M* = 15%) and Approving gestures (*M* = 30%), with a combined IoH of *M* = 14%. Following the introduction of the initial intervention phase, both IoH indicators increased (Smiling *M*= 30%, Approving *M* = 50%). Approving gestures remained relatively high and stable for the first four intervention phases (*M* = 48%, range = 20–60%). During Withdrawal phase, Approving declined to *M* = 20%, decreasing further with the reintroduction of Tootling, before rebounding to 40% during the follow up session. Smiling remained low throughout the first four

intervention phases (*M* = 20%, range = 5–30%), while remaining higher than baseline. Smiling decreased to 0% during withdrawal, while increasing with the reintroduction of Tootling (15%). During the follow up session, Smiling had decreased to 5%. While Smiling and Approving gestures fluctuated across phases, an overall increase in positive affect was observed relative to baseline (Combined IoH *M* = 34% during intervention phases vs. 14% at baseline). However, the small number of sessions (1–2 per phase) limited the ability to conduct statistical analysis.

Table 11

Mean Rates of Indices of Happiness (IoH) – Smiling and Approving by Teacher B Across Conditions

Indices of Happiness	*M*
Baseline/Withdrawal	
Smiling	8%
Approving	23%
Combined IoH	14%
Interventions B – B+E	
Smiling	20%
Approving	48%
Combined IoH	34%

Social Validity

Teacher Ratings

Teacher A. No data was collected from Teacher A, as they left the teaching role before the Behaviour Intervention Rating Scale (BIRS) was completed or returned.

Teacher B. The Behaviour Intervention Rating Scale (BIRS) was completed by Teacher B to assess the acceptability and perceived effectiveness of the Tootling intervention. The majority of responses (21 out of 24 items) were rated as either “Agree” (5) or “Strongly Agree” (6), indicating high overall satisfaction. Items relating to classroom-wide impact (e.g., “Most teachers would find Tootling suitable for improving general classroom behaviour”) and rapid student improvement (e.g., “Tootling quickly improved the children’s behaviour”) received especially high ratings. While the teacher agreed that Tootling was a beneficial and appropriate strategy, a slightly lower rating was

provided for confidence in long-term maintenance of behaviour change (Item 19 = 4). These results suggest that Teacher B viewed Tootling as a highly acceptable and effective classroom intervention, with some minor reservations regarding maintenance.

Student Ratings

Classroom A. Students' perceptions of the Tootling intervention in Classroom A were assessed using the Modified Children's Intervention Rating Profile (CIRP). Thirteen students completed the seven-item scale using a 6-point visual smiley-face Likert scale. Reverse scoring was applied to negatively worded items (Items 2–4), such that higher scores reflected more positive perceptions. As shown in Table 12, students generally held favourable views of the intervention. The highest-rated items were Item 3 ("Tootling caused problems with my friends," reversed; *M* = 5.15, SD = 1.86) and Item 4 ("There are better ways than Tootling to help kids behave," reversed; *M* = 4.85, SD = 1.86), suggesting students did not perceive Tootling as socially disruptive or less effective than alternative behaviour management interventions. Students also agreed that Tootling was fair (*M* = 3.92) and not difficult to use (Item 2 reversed; *M* = 3.92). While ratings for enjoyment (*M* = 3.69) and perceived academic benefit (*M* = 4.38) were moderate, the data reflect overall acceptability and feasibility of the intervention from the students in Classroom A.

Table 12

Classroom A Student's Modified Children's Intervention Rating Profile (CIRP) Scores and Averages

students	Item 1	Item 2 (R)	Item 3 (R)	Item 4 (R)	Item 5	Item 6	Item 7
A1	6	6	6	1	3	6	6
A2	5	5	3	3	6	5	5
A3	5	6	6	6	1	5	6
A4	1	1	2	2	1	6	6
A5	6	6	6	6	6	6	6
A6	3	6	6	6	5	6	6
A7	2	6	6	1	6	6	3
A8	5	6	3	1	3	6	3
A9	3	6	6	2	2	6	2
A10	6	6	1	6	3	6	6
A11	6	1	6	6	3	6	6
A12	2	6	6	5	3	5	2
A13	1	6	6	1	2	5	3
M	**3.92**	**5.15**	**4.85**	**3.54**	**3.38**	**5.69**	**4.62**

Note. R denotes reverse scored items.

Classroom B. Nineteen students in Classroom B completed the Modified CIRP following the Tootling intervention. Item-level means were consistently high across the seven items, ranging from *M* = 3.95 to *M* = 5.68 (see Table 13). The highest-rated items were Item 1 ("Tootling is fair"; *M* = 5.68) and Item 6 ("I liked Tootling"; *M* = 5.58), indicating strong social validity and enjoyment of the intervention. Similar to Classroom A, two of the highest scoring items were reverse scored (Item 2, "Tootling was too hard for me," *M* = 5.37; and Item 3, "Tootling caused problems with my friends," *M* = 5.37), suggesting students found the intervention easy to understand and non-disruptive to peer relationships. Although slightly lower, ratings on Item 7 ("I think Tootling helped me do better in school"; *M* = 3.95) still reflected moderate perceived benefit. Overall, responses suggest a high level of student acceptance and satisfaction with the Tootling programme.

Table 13

Classroom B Student's Modified Children's Intervention Rating Profile (CIRP) Scores and Averages

students	**Item 1**	**Item 2 (R)**	**Item 3 (R)**	**Item 4 (R)**	**Item 5**	**Item 6**	**Item 7**
B1	6	5	3	6	5	5	4
B2	6	6	6	5	4	6	1
B3	4	6	6	3	6	6	4
B4	5	6	5	4	6	5	4
B5	6	6	5	5	4	6	4
B6	6	6	6	4	4	6	6
B7	5	2	4	6	5	4	5
B8	6	6	6	6	6	6	6
B9	6	6	6	4	5	6	4
B10	6	6	5	4	6	6	5
B11	6	6	6	6	5	6	3
B12	6	6	4	4	5	6	4
B13	6	3	6	6	3	4	1
B14	6	3	6	3	3	6	3
B15	6	6	5	4	6	6	6
B16	5	6	6	4	5	5	2
B17	6	6	6	1	6	6	6
B18	5	5	6	5	4	6	4
B19	6	6	5	3	5	5	3
M	**5.68**	**5.37**	**5.37**	**4.37**	**4.89**	**5.58**	**3.95**

Note. R denotes reverse scored items

Discussion

The purpose of this study was to evaluate the effects of the Tootling intervention on class-wide and target student academically engaged behaviour (AEB), teacher praise and reprimand statements, teacher Indices of Happiness, tootle patterns, and social validity within lower and upper primary school classrooms. Overall, the intervention produced substantial improvements in class-wide and individual target students' AEB levels, with high social validity ratings from teachers and students. Small to moderate effects were observed on teacher praise and reprimand statements, and Indices of Happiness across both classes. The following section discusses these findings in relation to each of the study's Research Questions, with reference to the existing literature and implications for practice.

Research Question 1: Does Tootling increase academically engaged behaviour (AEB) at both the class-wide and target student levels?

AEB increased in both classrooms. In classroom A (Year 0–1) class-wide increases were modest, while target students improved substantially. In Classroom B (Year 5–6), class-wide and target students gains were substantial and sustained.

Research Question 2: Does the Tootling intervention promote inclusive student participation in the submission and receipt of tootles?

The majority of students submitted tootles, and all received recognition from their peers at least once, confirming inclusivity of the Tootling intervention.

Research Question 3: Does a values-specific focus increase Tootling on a targeted school value?

Tootles recognising the targeted value (Respect, Resilience, or Responsibility) increased. when paired with a values-specific focus.

Research Question 4: Does the Tooling Intervention increase teacher praise statements and decrease teacher reprimands?

Teacher praise did not increase consistently in either classroom, while reprimands decreased in both, with clearer reductions in Classroom B.

Research Question 5: Is the Tootling Intervention Socially Valid?

Teacher B strongly endorsed the Tootling intervention, while student feedback was generally favourable, with younger students noting fairness concerns. Teacher A did not complete the BIRS due to leaving the teaching role.

Across all five research questions the findings can be integrated to show that Tootling can function as an effective, flexible, and socially valid class-wide intervention. Effects on AEB varied by context, with improvements most evident for students with lower initial academic engagement (i.e. in Classroom A), and were robust and sustained, especially in Classroom B (RQ1). Participation data confirmed the inclusivity of Tootling, though peer recognition patterns reflected natural classroom dynamics (RQ2). When paired with a values-specific focus, Tootling also supported stronger alignment with school-wide priorities, such as PB4L-SW (RQ3). Teacher praise did not increase consistently, indicating that the effects were peer-driven rather than teacher-mediated (RQ4). Finally, both teacher and student ratings highlighted strong social validity, reinforcing Tootling's practicality in real-world classrooms, with tentative signs of benefit on teacher affect (RQ5). Because no materials-only phase was conducted, a more cautious interpretation is that Tootling remained effective under variable treatment integrity.

Overall effectiveness of Tootling on Academically Engaged Behaviour (AEB)

Across both Classrooms, Tootling was associated with increased academically engaged behaviour (AEB), though outcomes differed depending on the baseline levels and classroom context.

Class-wide

In Classroom A (Year 0–1), class-wide AEB improvements were modest. Although mean engagement increased slightly during Tootling, consistently high baseline levels among comparison students left little room for measurable change, which may suggest a ceiling effect, reflected in a small effect size. A similar pattern was mirrored by Miller (2017), who implemented Tootling with four- to five-year-old students, and found AEB levels consistently above 80% across all phases, limiting observable change and producing small to moderate effect sizes. In contrast, Powell (2020)

found stronger effects in classrooms with lower baseline engagement, paralleling the more substantial intervention effects for target students in the present study.

Consistent with this, Classroom B (Year 5–6) data showed an immediate and substantial increase in AEB at the class-wide level, following the introduction of the Tootling intervention, remaining above 85% across all phases and follow up sessions. Unlike Classroom A, initial engagement was much lower, leaving greater capacity for observable change. The final intervention phase spanned the end of term, a two-week break, and the start of the next term. AEB briefly declined during the final week of term, potentially due to end-of-term fatigue or less structured routines. Engagement rebounded once structured routines were resumed at the start of the next term. Importantly, the teacher chose to continue Tootling following the investigation, and follow-up data collected four weeks later showed sustained high levels of AEB, suggesting consistent effects when the intervention was maintained.

Taken together, these findings suggest that class-wide effects of Tootling are most apparent in settings where baseline AEB is lower than the desired level, leaving room for observable change. In contrast, when engagement is already high, the potential for measurable improvements at the class-wide level is limited.

Target students

In Classroom A, four target students were nominated by the classroom teacher due to their consistently low or variable baseline AEB levels, which indicated a clear need for intervention and potential at risk of poor academic outcomes. In contrast, the comparison students' AEB was consistently high. All four showed substantial improvements following the introduction of the Tootling intervention, with very large effect sizes observed. In Classroom B, three target students also displayed low-to-moderate engagement during baseline, validating their need for extra support. They demonstrated an immediate and moderate-to-substantial increase following the introduction of Tootling, which remained relatively high across subsequent phases. During the withdrawal phase, all students' AEB decreased, before increasing upon reimplementation. Fluctuations in both

classrooms appeared to reflect external factors, rather than the Tootling intervention itself. In Classroom A these included teacher absences, 1:1 teacher-student lessons, or student illness. In Classroom B, they occurred during self-directed learning activities, with all three target students showing decreases in AEB during these unstructured tasks. This pattern suggests that less such conditions were particularly challenging for target students, rather than indicating reduced effectiveness of the intervention, overall.

Overall, increases in Classroom A suggest an intervention effect, however, causal conclusions cannot be drawn due to the A-B design. In contrast, the multiple phase design implemented in Classroom B provides stronger evidence for a functional relationship between Tootling and increases in AEB, as intervention effects were demonstrated three times across introduction, withdrawal, and reimplementation phases.

These results indicate that, in this present study, Tootling provided particular benefit for the identified target students, who struggled with AEB, despite being in classrooms where overall engagement is already high. These results align with previous studies in both lower and upper primary settings, which similarly reported stronger effects for students beginning with lower engagement (Enright, 2023; Chaffee et al., 2020; Powell, 2020). The present study extends this work by demonstrating that gains can occur even under imperfect fidelity (Classroom A) and can be sustained across phases when the intervention is continued (Classroom B).

Research on Tootling's effect on AEB in early childhood, and Year 0-1 primary classrooms is limited, with only a small number of studies focused specifically on 5-year-olds (e.g. Miller, 2017; Powell, 2020, discussed earlier. Beyond these, the current findings align with research in lower primary classrooms (Year 1–3, or equivalent), which consistently reported increases in AEB and appropriate behaviours in lower primary settings following Tootling implementation (Choundira, 2022; Enright, 2023; Lambert et al., 2016; McHugh et al., 2016; Ray et al., 2024). Notably, no previous Tootling studies at this age level examined individual student AEB, meaning that earlier

research may have overlooked children who still required additional support in classroom where class-wide AEB was already high.

Classroom B's findings are supported by previous Tootling studies in upper primary and middle school settings. Chaffee et al. (2020) reported large improvements in class-wide AEB in 5th grade classrooms, with gains maintained across reimplementation and follow-up phases. Dillon (2016) also observed very large class-wide AEB effect sizes across three classrooms, with minimal variability. Dillon et al. (2019) found similarly large effects when implementing Tootling via ClassDojo. In comparison, the present study's target student improvements, matched or exceeded these class-wide outcomes. Similar results were obtained by several other studies at the Year 5–6 level, which reported very large improvements with reduced variability and sustained follow up (Enright, 2023; Powell, 2020).

Maintenance is also a consistent finding across the literature. When Tootling was continued, high levels of AEB were maintained, whereas fading or discontinuation often resulted in sharp decreases (Enright, 2023; Lambert et al., 2015; Lum et al., 2017). The sustained gains observed in Classroom B following reimplementation and teacher-led continuation, support this pattern. This highlights Tootling's potential for durable change when embedded in everyday classroom practice.

Taken together, these findings suggest that Tootling is effective across both younger and older students. Importantly, it can support individuals who struggle in otherwise high-functioning classrooms. The main age-related consideration is practicality: Tootling can be adapted for younger children with limited literacy through simplified slips and visual supports, ensuring developmental appropriateness.

Inclusivity

Findings from the present studies indicate that Tootling functioned as an inclusive intervention, in multiple respects. Most importantly, students with additional learning or behavioural needs benefitted substantially with their academically engaged behaviour (AEB) rising to levels comparable with their peers, even though they were not individually targeted. Accessible

features, including pre-printed or tick-box tootle slips, enabled students with diverse learning, developmental and confidence needs to participate alongside their peers, echoing previous findings that simplified tootling formats reduce barriers for less confident or motivated participators (Dillon et al., 2019; Whitefield et al., 2024). This design feature may help explain why Tootling proved feasible across both younger and older cohorts, as its reduced literacy demands in the Year 0–1 class, while still supporting meaningful participation in the tootling procedure in the Year 5–6 class. Patterns of submission and receipt showed that participation was broadly distributed, even though variability in peer recognition reflected natural classroom peer dynamics. Furthermore, Tootling has been shown to be adaptable across classroom settings, suggesting that inclusivity was maintained, even under different implementation styles. Taken together, these findings support Tootling as a flexible, low-effort, PB4L Tier 1 practice that promotes wide participation and recognition, within whole class settings.

In Classroom A, students used pre-printed tootle slips, requiring them to circle a peer's photo and a pro-social behaviour, without an option for written elaboration. Target students participated at comparable or higher rates than their peers, with Amanda and Aihe among the highest overall contributors. Notably, all four target students fell within the top ten contributors, while seven comparison peers submitted only one or two tootles. In Classroom B, students could choose between a tick-box format and an open-written option. All three target students engaged, with Harper and Hanish submitting at higher-than-average rates. Ryder's lower participation remained within the peer range, illustrating inclusive participation even among less frequent contributors. Most students strongly preferred the tick-box option, but Hanish used both formats, contributing more written tootles than most of his peers.

These findings suggest that the simplified submission formats reduced barriers for students who may be less confident, able, or motivated to write. This conclusion is consistent with previous component analyses that identified accessibility benefits from simplified reporting formats (Whitefield et al., 2024; Enright, 2023). By ensuring that all students could access the reporting

format, Tootling promoted inclusive participation irrespective of developmental stage, or academic ability.

Receipt patterns also show variability. In Classroom A, target students received fewer tootles than the peer average, but still within the range. In Classroom B, Hanish received a nearly equal number of tootles compared to his submissions, which mirrored the submission-receipt ratio of the comparison peers. In contrast, Harper submitted substantially more than she received, whereas Ryder demonstrated a consistently low submission-receipt ratio overall.

Such discrepancies reflect natural social dynamics, where peer recognition may cluster within friendship groups, or occur less often when prosocial behaviour is limited or not readily observed (Lambert, 2014). Importantly, however, all target students received tootles across phases, indicating that no child was consistently overlooked, or excluded. Importantly, these differences in tootling rates did not transfer into differences in effectiveness. All target students showed improvements in AEB within the typical peer range, confirming that uneven recognition reflected normal classroom dynamics rather than exclusion. This study also contributes to the literature by explicitly examining both submission and receipt patterns, showing that despite variability, inclusivity was maintained because every student was included at least occasionally.

Student feedback, through the CIRP, further highlighted these observations. In Classroom A, students enjoyed participation but noted less fairness. These perceptions suggest that additional scaffolding may be required when implementing Tootling in junior classrooms, likely reflecting developmental differences in recognising subtle peer behaviours. In Classroom B, students rated the intervention as fair and reported that it did not disturb friendships. Consistent with Wright et al. (2021), older students perceived Tootling's primary value in social and behavioural outcomes, rather than academic gains, which may reflect that Tootling primarily reinforces interactions rather than direct academic performance. These perceptions are meaningful in demonstrating social validity. Inclusivity was not only evident in the data but also experienced by the students themselves. The absence of reported harm to peer relationships further supports Tootling's suitability as a class-wide

intervention, distinguishing it from strategies which risk singling out individuals or exacerbate social divisions.

Notably, children with additional learning or behavioural needs were not ostracised, and their contributions remained within the typical peer range. Taken together, these findings highlight a central strength of Tootling: it enables students with additional needs to participate and benefit without requiring separate adaptions, supporting Tootling's feasibility as a PB4L Tier 1 practice. At the teacher level, the intervention also demonstrated adaptability, functioning under both high- and low-fidelity conditions (Classrooms B and A, respectively), suggesting robustness to contextual variations.

In conclusion, these findings suggest that while Tootling can be designed to maximise accessibility, classroom social dynamics influence the distribution of recognition. Importantly, students with additional learning or behavioural needs were included as both contributors and recipients, with tootles consistently recognising prosocial behaviours aligned with classroom expectations.

These outcomes align with broader literature on peer-mediated interventions, which emphasise the dual benefits of reducing teacher workload while fostering student agency (Murphy & Zlomke, 2014). Within the Aotearoa New Zealand context, they also resonate with the goals of PB4L Tier 1, which prioritises universal approaches that make expectations explicit, incentivise prosocial behaviour, and ensure equal opportunities for all students (MoE, 2015b; ERO, 2024a).

Values-Specific Focus

The present study showed that pairing a values-specific focus (reading tootles linked to a targeted school value at the end-of-day counts) increased the frequency of values-related tootling. Very large effect sizes were observed during the Resilience and the Responsibility phases, replicating across phases and providing some evidence of experimental control. However, because the design did not include a full reversal across all values, conclusions about functional relationships should be made with caution. In contrast, tootles referencing non-targeted values remained consistently low

and stable across phases, suggesting that the public reading of tootles primarily influenced the specific school value being explicitly highlighted.

To date, no known Tootling studies have explicitly examined behaviour-specific praise (BSP) aligned with specific school values. Behaviour-specific praise (BSP) has, however been widely used in PB4L Tier 1 programmes to reinforce behaviour expectations and has consistently been shown to be effective for promoting positive behaviour. Chalk and Bizo (2007) found significant increases in on-task behaviour when teachers delivered specific praise for academic engagement, highlighting its classroom practicality. More broadly, Ennis et al. (2020), in a review of 36 studies, concluded that BSP is a cost-effective and efficient strategy for promoting a range of positive behaviours. The present study extends this literature by embedding values-specific BSP within the values-specific focus conditions. In these phases, teachers were encouraged to deliver praise explicitly tied to the targeted school value throughout the day. During end-of-day tootle reading they selected tootles referencing that value and provided praise both for the peer recognition, and for the behaviour described. By publicly naming the targeted-value during tootle-reading, abstract school values were made more visible, helping students to recognise those behaviours in peers, which likely contributed to the increase in value-specific tootles.

Although teacher-delivered values-specific BSP did occur occasionally, its frequency was low compared to the consistent use of tootle-reading procedures. As such, the increases in values-specific tootles are more plausibly attributed to the reading aloud of tootles, with BSP serving as an infrequent but complementary element.

The consistent use of a values-specific focus during end-of-day tootling counts supported the connection between peer recognition and the school's behavioural expectations. This alignment with PB4L practice highlights how Tootling can be embedded within existing frameworks to strengthen the visibility of school values. A values-specific focus therefore appears to be a promising strategy for extending Tootling to support the explicit teaching of core values in school-wide systems, in line with PB4L Tier 1 principles.

This interpretation aligns with prior research showing that explicitly taught or reinforced targets are more likely to be recognised and reproduced. For example, Crewdson et al. (2023) found that when preschoolers were explicitly taught to give compliments and encouragement, tootles on those behaviours increased. Similarly, Glynn and Thomas (1974) showed that when teachers highlighted "interesting words" in writing, students used these more frequently. In the same way explicit recognition of values in the present study likely made abstract values more visible. By naming them explicitly, it directed both teacher and peer attention towards them. This demonstrates that teachers can intentionally shape peer-recognition by directing attention towards the school values, prosocial behaviours and social skills that matter most for a positive classroom.

Teacher Praise and Reprimand

Teacher-delivered praise was monitored primarily to rule out its influence as a possible confound for the observed increases in academically engaged behaviour (AEB). It is important to note that this was separate from the values-specific focus intervention(where behaviour-specific praise (BSP) was embedded through tootle-reading), and here refers only to spontaneous teacher-delivered praise across the day.

In Classroom A, both forms of praise (BSP and Non-Specific praise, NSP) showed small countertherapeutic change across phases, while Reprimands declined modestly. This suggests Tootling was more effective at reducing negative teacher comments than at increasing positive ones. In contrast, in Classroom B, both forms of praise again remained inconsistent, with low and variable rates of BSP and NSP. However, Reprimands showed a clearer treatment effect, steadily declining across phases, which may reflect fewer instances of anti-social or disruptive behaviours, and therefore reduced the need for corrective teacher statements.

Together, these outcomes suggest that improvements in student behaviour were unlikely to be attributable to increases in teacher praise. Instead, the clearer pattern is that Tootling reduced the need for teacher reprimands, creating a more positive classroom environment. This aligns with

previous literature emphasising the importance of praise in isolation but also the need to maintain a favourable praise-to-reprimand ratio (Reinke et al., 2000; Sutherland et al., 2007).

This pattern is consistent with the wider Tootling literature, where praise effects have been mixed. Some studies reported modest or substantial increases in teacher-delivered praise (e.g., Enright, 2020; Morris, 2024), while others found no significance (e.g. Choundira, 2022; Powell, 2020). Overall, the present findings indicate that the most effective component of Tootling is likely to involve peer-mediated praise and recognition, rather than teacher praise. Within the PB4L framework, this is significant as teacher-delivered praise is considered a central Tier 1 strategy. Yet the current study suggests that peer-mediated recognition can support PB4L goals by sustaining academic engagement and reducing the need for reprimands, even when teacher praise is inconsistent. This demonstrates how peer-recognition can work alongside teacher-delivered Tier 1 strategies.

Social Validity

Teacher Social Validity

Teacher B's BIRS responses indicated strong endorsement of Tootling's effectiveness, ease of use, and classroom-wide suitability. The only item rated less favourably concerned the long-term sustainability of behavioural change without ongoing reinforcement, consistent with previous findings (Lambert, 2014; Powell, 2020). Teacher A did not complete the BIRS due to their unexpected departure from the teaching role, although anecdotal reports were positive.

Teacher Indices of Happiness (IoH)

IoH, measured via smiling and approving gestures, indicated whether the Tootling intervention coincided with observable changes in teacher affect. Findings were mixed, with Teacher A's IoH remaining largely unchanged; while Teacher B showed modest increases in smiling and more substantial increases in approving gestures, resulting in higher overall IoH during intervention. Although tentative given the probe design, these results suggest that Tootling may have contributed

to a more positive classroom affect for Teacher B. This points to the potential value of using Indices of Happiness as a more objective indicator of social validity in future research.

Student Social Validity

Student perception indicated that Tootling was viewed positively across both classrooms, aligning with previous research that highlights high levels of social acceptability (e.g., Cihak et al., 2009; Lum et al., 2019). In Classroom A, students emphasised enjoyment and peer-related benefits, but some reported that Tootling was not always fair, or easy to use. This suggests that younger students may need greater modelling and teacher guidance when introducing Tootling in junior classrooms. It highlights how developmental stage influences how peer-mediated interventions are perceived. In Classroom B, students emphasised fairness, enjoyment, and non-disruption to friendships. Their feedback focused on relationship benefits, rather than academic ones, which is consistent with Wright et al. (2021) who found that older students tend to value Tootling for its social and behavioural outcomes.

Taken together, these findings suggest that Tootling was considered acceptable and feasible by both teachers and students, reinforcing its practicality as a class-wide intervention. Importantly, perceptions differed by age: younger students emphasised accessibility challenges, while older students highlighted fairness and peer relationships.

Measures of Integrity

Training Integrity

Training Integrity was maintained at 100% across all training sessions in both classrooms. In each case, the researcher trained the teacher with full adherence to the protocol. Both teachers subsequently trained their students with complete procedural accuracy. This supports confidence that observed treatment effects were not confounded by variability in how the Tootling intervention was initially introduced.

Treatment Integrity

Treatment integrity differed notably across the two classrooms. In Classroom A, teacher-reported integrity scores averaged 85%, with implementation ranging from 75% to 92%. While these scores indicate generally acceptable reliability, some irregularities were observed. Notably, discrepancies emerged between teacher-reported and observed-rated integrity checklists. On multiple occasions, the primary observer entered the classroom to find an overflowing tootle box and no change to the progress tracker, despite teacher reports indicating these elements were up to date.

Additionally, during a session led by a reliever, key components of the Tootling procedure, such as verbal praise linked to tootles and consistent delivery of reinforcement, were omitted. Nonetheless, students continued to submit tootles enthusiastically, suggesting that the intervention had become embedded in the daily classroom routine. For younger Year 0–1 students, the tootle slips, tootle box, and progress chart may have functioned as antecedent prompts, supporting AEB even when reinforcement was inconsistently issued. However, these procedural inconsistencies may have contributed to the smaller behavioural gains observed in Classroom A compared to Classroom B, particularly among target students. These findings do align with some previous research which noted that increases in AEB were observed, even with some discrepancies in implementation (Enright, 2023; McHugh et al., 2016; Powell, 2020).

In Classroom B, integrity was notably high, with an overall average of **94%** and individual session scores consistently ranging from 88% to 100%**.** All core components of the intervention (daily announcements, tootle collection, feedback, and reinforcement) were implemented reliably. One possible explanation for this unusually consistent fidelity is contextual. Teacher B was a beginning teacher who may have been more open to adopting structured behavioural strategies and less inclined to “wing it” compared to more experienced teachers. Alternatively, because baseline levels were relatively low in this classroom, the teacher may have been especially motivated to maintain the intervention with precision.

In contrast, variability was observed in the additional component unique to the values-specific focus condition. The integrity tracker indicated that values-specific Behaviour-Specific praise (BSP) during the day was rare (0–2 instances per phase), and teacher-delivered praise in general was low across phases. In practice, the values-specific focus condition therefore functioned almost entirely through the selective end-of-day reading of tootles, which was implemented with reasonably high fidelity. Treatment integrity may have also been strengthened by explicit incorporation of school values into the end-of-day Tootling routine, which aligned the intervention with the teacher's own priorities and increased buy-in. These factors likely contributed to procedural adherence, and may help explain why outcomes in this classroom were more consistent compared to Classroom A.

These findings are consistent with previous research emphasising the importance of treatment integrity in producing reliable behaviour change outcomes (Lambert et al., 2015; McHugh et al., 2016). The contrast between classrooms also highlights the influence of teacher stability and implementation support on treatment integrity (Enright, 2023; Powell, 2020). While Tootling can be feasibly implemented in real-world classrooms, maintaining high integrity may require ongoing training, teacher buy-in, and supportive infrastructure particularly in settings where changes in staff are more frequent. At the same time, the present findings suggest that the intervention is relatively robust. Positive outcomes were still achieved, despite some variability in fidelity. This points to the potential value of allowing teachers a degree of flexibility to adapt and personalise the intervention within their own contexts, provided that core components are maintained. Together, these findings highlight both the importance of treatment integrity and the robustness of Tootling (Goss, 2019; Skinner et al., 2000; Whitefield et al., 2024).

Theoretical and Practical Implications

The current study supports the use of Tootling as a practical, effective, and socially valid classroom-based intervention for increasing prosocial and academically engaged behaviour (AEB). A key strength of Tootling lies in its adaptability: it required little class time, operated successfully with relieving teachers, and integrated easily into existing classroom routines. These features support its

use as a Tier 1 PB4L strategy, particularly when tailored to student age, developmental level, and classroom context.

From a behavioural perspective, several well-established components may have contributed to the observed outcomes. Peer-submitted tootles likely functioned as natural social reinforcers, while the public posting of progress and reading of tootles provided feedback and supported goal setting. Students could observe valued behaviours being displayed, recognised and celebrated, offering peer-modelling opportunities (Bandura et al., 1963; Bandura, 1965). Because Tootling was structured as an interdependent group contingency, participation may have been motivated through collective reinforcement, which helps explain its feasibility across classrooms (Litow & Pumroy, 1975). Together, these processes align with reinforcement and social learning accounts of why prosocial and academically engaged behaviours increased (Bandura & Walters, 1963).

At the same time, findings from Classroom A (Year 0–1) suggest that Tootling may have operated by functioning as an antecedent-based intervention. This data also suggest that visible tootling materials may have acted as environmental prompts, supporting engagement even when reinforcement was inconsistent. Alternatively, this observation could also reflect persistence under a leaner reinforcement schedule, as students had learned that reinforcement was sometimes, but not always, delivered. In Classroom B (Year 5–6), academically engaged behaviour (AEB) decreased during the withdrawal phase and recovered with the reintroduction of Tootling, a pattern consistent with the removal and reinstatement of these cues. This finding aligns with literature showing that environmental prompts can act as discriminative stimuli that occasion prosocial behaviours (Skinner, 1953; Cooper et al., 2020) and is consistent with applied classroom studies noting the role of antecedent prompts in promoting AEB (Enright, 2023; McHugh et al., 2016). Taken together, these findings suggest that Tootling may operate through both reinforcement-based and antecedent processes, broadening its theoretical grounding and practical applications.

Analysis of tootling patterns revealed important implications for inclusiveness. Across both classrooms, target students engaged at or above peer averages, suggesting that accessible formats,

particularly tick-box options, can reduce barriers for students who may be less confident, able, or motivated to write. While some students received fewer tootles than others, there was no evidence of active exclusion. Importantly, all students were recognised at least occasionally, and target students were able to participate and perform on par with their peers. This suggests that Tootling not only promoted broad peer acknowledgement but also helped protect at-risk students from falling behind, aligning with universal design principles (Meyer et al., 2014), by providing equitable access and preventing growing disengagement.

Taken together, these findings highlight Tootling's role as a structured way of implementing PB4L Tier 1 practices. Within PB4L, common elements include making rules and expectations explicit, incentivising desired behaviours, and reinforcing school values (MoE, 2015a; ERO, 2024b). Tootling operationalises these elements in a structured, teacher-friendly way. Tootles make prosocial expectations visible, peer and teacher acknowledgement and reward contingencies incentivise desired behaviours, and a values-specific focus embeds school priorities into everyday classroom routines. By providing a low-effort way to promote these practices consistently, Tootling offers a practical tool for schools seeking to integrate PB4L strategies within Aotearoa New Zealand classrooms.

Overall, Tootling was shown to be an adaptable, engaging, and theoretically grounded strategy for promoting prosocial behaviours and peer recognition. Its alignment with PB4L values, simplicity and customisability make it a promising tool for universal (Tier 1) classroom support.

Strengths

One of the primary strengths of this study was its investigation of the Tootling intervention across two distinct year levels: a Year 0–1 classroom and a Year 5–6 classroom. This dual-context design provided valuable insight into how the same behavioural intervention can be adapted for multi-age classroom settings, and how age, developmental stage, and classroom culture may influence implementation.

A further strength was the thoughtful adaptation of Tootling resources to address the unique needs and initial reluctance to write of students in each class, thereby promoting inclusivity. For example, visual supports, simplified tootle slips, and tailored reinforcers were introduced to make the process more accessible. These modifications demonstrated the intervention's adaptability and ensured greater student engagement, particularly in classrooms where literacy, confidence, or motivation were barriers to participation.

A notable strength was the provision of detailed student-level observations, which enabled an analysis of individual behaviour change in addition to class-wide patterns. This helped to strengthen the reliability of the influences of the Tootling intervention on academically engaged behaviour. Another methodological strength was the high level of interobserver agreement achieved for most target students, which added to the internal validity and trustworthiness of the data collected.

Finally, strong teacher and student buy-in, particularly in Classroom B, supported both implementation fidelity and social validity of the intervention. The alignment of Tootling with the school's values-based PB4L goals enhanced its relevance. The enthusiasm of Teacher B, who was in the early stages of their career and eager to trial evidence-based practices, also likely contributed to the success of the intervention in that setting.

Limitations and Future Research

While the current study provides support for the use of Tootling as a peer-mediated behaviour intervention in Aotearoa New Zealand primary classrooms, several limitations should be acknowledged. Each limitation is considered alongside implications for future research.

As with all behaviour-analytic single-case experimental designs, a key limitation is a lack of external validity. These designs are valued for their strong internal validity, achieved through repeated measurement and direct experimental control (Cooper et al., 2020). However, because they focus on a small number of participants within specific contexts, the generalisability of findings is naturally constrained. This study was conducted in only two classrooms (Year 0–1 and Year 5–6),

which while allowing for developmental comparisons, limits broader application. However, because this study functioned as a systematic replication of many previous Tootling studies (e.g. Lambert et al., 2015; Powell, 2020), it contributes to the strength of the overall evidence base. Future systematic replications are needed, particularly those addressing aspects unique to this study (e.g. values-specific focus, early primary adaptions), to continue building the evidence base across middle primary and composite classrooms often found in Aotearoa New Zealand schools.

A second limitation concerns the incomplete A-B-A-B design in Classroom A due to early termination of the intervention phase. This precluded the ability to demonstrate a functional relationship. Although Classroom B included more phases, its design also did not extend to long-term follow-up. Future studies should aim to complete full A–B–A–B designs across multiple phases and, where possible, incorporate long-term maintenance probes. This would strengthen claims about both causality and sustainability.

Applied classroom research is vulnerable to disruptions beyond the researcher's control. In Classroom A, teacher illness and absences caused a three-week data gap, and Teacher A's departure mid-study meant data collection had to continue under a reliever. Additionally, Teacher A did not return the Behaviour Intervention Rating Scale (BIRS), limiting conclusions about teacher perceptions of social validity. While such challenges are common to applied settings, strong single-case experimental designs address most alternative explanations through repeated measurement and participants serving as their own controls. Nevertheless, future research could mitigate disruption effects by collecting social validity data early and planning explicit contingency strategies for teacher absence or turnover.

A further consideration is that, in the later phases of Classroom B's study, explicit values lessons were delivered at the start of each phase and aligned with the values-specific focus (e.g. Respect, Responsibility). Although the inclusion of a Tootling-Alone phase helped to establish the independent effects of the intervention, it remains difficult to establish whether improvements in the combined phases were attributed to the public sharing of value-specific tootles and praise, to the

values teaching, or to their interaction. Future research could systematically vary or stagger these components to clarify their individual impact.

Discrepancies in treatment integrity were observed. In Classroom A, teacher- and researcher- reported fidelity did not fully align, while in Classroom B, values-specific praise was inconsistent. Despite this, Tootling appeared resilient to minor implementation differences, producing positive outcomes even under less-than-perfect treatment integrity. This suggests that not all procedural components may be critical. Previous studies have begun to explore individual components of Tootling, such as reinforcement variations (Goss, 2019) and slip format (Whitefield et al., 2024), and more detailed component sequencing (Alstead, 2024). Alstead's A-AB-A-AB-ABC-AB-ABC-ABCD-ABC-ABCD design demonstrated that interdependent contingency was the most impactful single active component, while the full procedure was most effective overall. However, only a small number of such analyses exist, and further systematic research is needed to confirm which components are essential versus flexible across classroom contexts.

While interobserver agreement (IOA) was strong for target students, IOA for comparison students was less robust due to challenges coding from video footage. Busy group contexts occasionally prevented both observers from tracking the same comparison student during intervals, despite structured clockwise protocols. Future research could improve precision by assigning specific comparison students to observers, thereby reducing alignment errors and increasing the accuracy of class-wide estimates.

The analysis of tootling submission patterns revealed several limitations. In Classroom B, tootles were gathered and stored (by the researcher) by value, rather than by week, reducing the ability to conduct phase-by-phase analyses. Moreover, submission patterns suggested that a small number of students were responsible for the majority of tootles, reflecting natural peer dynamics such as social status, personality or motivation. While not inherently negative (since some variation in recognition is expected), these dynamics highlight opportunities for future research into strategies that broaden participation and ensure accessibility for all students. Some adaptions have already

explored setting tootling goals based on recognising a maximum number of different peers, rather than a total number of tootles submitted, which encourages wider distribution of recognition (e.g. Sherman, 2012; Wright, 2021). Future research could explore these patterns more systematically, scaffold written tootling in younger classes, and test inclusive adaptations such as pictorial prompts or translated slips (see Enright, 2023) for diverse learners. Comparing open-ended and structured formats (as in Whitefield et al., 2024) would also clarify which are most accessible across age and language levels. Variants could also be designed to encourage recognition of a wide range of peers. This would support inclusive, culturally responsive teaching in line with Aotearoa New Zealand's educational values.

Finally, although both classrooms demonstrated short-term improvements, the absence of long-term follow-up is a clear limitation. Sustainability is crucial to evaluating whether Tootling's effects extend beyond immediate reinforcement cycles. Future studies should include maintenance probes across a school year or longer. Such work would clarify whether Tootling operates primarily as a reinforcement-based or antecedent-based intervention (or a combination), particularly given the findings in Classroom A. In particular, the withdrawal phases in Classroom B showed a clear return to baseline , indicating that reinforcement was an important driver of behaviour change. However, the persistence of tootling in Classroom A despite inconsistent reinforcement suggests that antecedent cues may also have played a role. Longitudinal research would be valuable in differentiating these processes and clarifying the nature of their contribution over time. Future research could also examine how Tootling functions when implemented within the PB4L-SW systems, including feasibility, across multiple classrooms or at a school-wide level. This would help to evaluate scalability and alignment with existing values-based frameworks in Aotearoa New Zealand.

Conclusion

In conclusion, Tootling appears to be an adaptable, low-cost, and effective peer-mediated intervention, particularly when tailored to match student developmental stages and supported with consistent implementation. It aligns well with PB4L philosophies and culturally responsive practices,

with a values-specific focus shaping tootle content and highlighting how Tootling can embed school-wide priorities into everyday routines. While these findings are promising, they should be interpreted in light of the study's limited scope and absence of long-term follow-up. Future research may benefit from exploring Tootling in multi-level classrooms, with multilingual learners, school-wide, or in combination with other positive behaviour supports. For schools seeking sustainable, inclusive tools to foster positive classroom environments, Tootling offers a promising option. A particular strength is its ability to improve the behaviour of individual students with consistently low levels of engagement, without explicitly targeting or singling them out. This aligns closely with PB4L's focus on universal, strengths-based practices.

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List of Appendices

Appendix A - Information Sheet (School)

School of Psychology

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Information Sheet – Schools

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To whom it may concern,

Your school is invited to participate in a research project conducted by myself, Jess Symes under the supervision of Associate Professor Angelika Anderson from the Faculty of Social Science at the University of Waikato. This project is part of the requirement for the completion of my Master of Applied Psychology in Behaviour Analysis at the University of Waikato. Please read this information sheet in full before deciding if your school will participate. If you would like further information about the project, please contact myself or Associate Professor Anderson via the contact details above.

The topic of the research
This research project has been designed to improve overall behaviour within the classroom of primary school-aged children in mainstream schools, by implementing a "tootling" intervention package. Tootling is a peer-mediated intervention during which students' records of appropriate peer behaviour are collected, counted, and read aloud to the class by the teacher. Previous research has found improvements in whole-class and individual behaviour as a result of tootling implementation. Improved behaviour in the classroom leads to a better learning environment for the students along with a more pleasant teaching environment for the educators.

What's involved
We are looking to recruit between one to two mainstream classes of students and their teachers. I will specifically be looking if tooling interventions can decrease disruptive/ antisocial behaviour of students. Because of this, the research will be focusing on those students who are identified as having high rates of disruptive/ antisocial behaviour to others. If you give permission for your school to participate, information sheets will be provided to potential teacher participants and informed consent will be obtained from them, prior to any materials being introduced into the classroom. An information sheet and an email will then be sent home to the parents of all the students in that classroom. Parents of the students who have been identified as having high rates of disruptive/ antisocial behaviour will be given informed consent forms to sign if they wish for their child to be included in the project. Parents of the remaining children will be given the opportunity to opt out for their child, by returning a withholding consent form. If they choose not to respond, their child will be included in the study. Any students without consent will be excluded from data collection.

Teacher involvement

At various stages throughout the research, I will have discussions with the teacher to gather information which will contribute towards decision-making regarding aspects of the intervention. One of these discussions will include when it is appropriate for me to make regular, unobtrusive classroom observations, lasting no more than one hour each.

An area of interest within this research is the effect tootling has on teacher behaviour, as well as student behaviour. Therefore, specific teacher behaviour will be recorded to contribute to the understanding of how tootling works within the classroom.

Towards the end of the study, the teacher will be invited to complete a 10-minute questionnaire assessing their views about the intervention.

On completion of the initial intervention phase, observations will stop and the teacher will be invited to return to their previous classroom procedures or continue using the tootling intervention. I will then return to collect follow-up data 4-6 weeks later.

It is expected that the initial phase of the study, including initial discussions and all data collection, will take up to one term to complete, with follow-up data expected to be collected within 1-2 weeks.

Student involvement
Students will learn about the tootling procedure from their trained teacher and it will be incorporated alongside their normal classroom activities. During two intervention phases, students will be asked to record incidents of their peers' appropriate (good) behaviour (tootling), throughout class-time. All students will work together to achieve a shared tootle-goal.

Throughout the study, I will engage in frequent, non-obtrusive observations of teacher nominated students who have high disruptive/antisocial behaviours. These observations will all be video recorded, to ensure that the research has been undertaken correctly and to assess the reliability and validity of the research. These recordings will only be shared to those on the research team. Any students, teachers or schools involved in the study will remain confidential and no personal information will be shared or reported on.

I will also observe the teacher's behaviour in relation to the amount of praise, reprimands, and prompts to behave appropriately, given by them to the students. Additionally, observations will be made on teacher happiness.

Results
It is expected that, as a result of the tootling intervention, the student's disruptive/antisocial behaviours will decrease in the classroom and that teacher stress will be reduced. Results will be presented within my master's thesis. It is also possible that results will be published in a journal article and/or presented at a conference. A summary of the results can be forwarded to the participating school, teachers, and parents of participating students, on request, as can a copy of any published journal articles.

Confidentiality
Participation in this project will remain confidential and no identifying information will be disclosed to anyone outside of the study. Codes and pseudonyms will be assigned to participating schools, students, and teachers to ensure that no data can be traced back to participants. Neither the school nor participants will be identifiable in the presentation of any results.

Storage of data
On completion of my thesis all data (including all video recordings) will be given to my supervisor, Associate Professor Angelika Anderson, to be stored on a password-protected university drive for five years. Only Associate Professor Anderson and I will have access to the data at any time. After five years the data will be destroyed by deleting the electronic files.

Right to withdraw
Participation in this project is voluntary and the school, students, parents, or teachers are under no obligation to give consent to participate. If your school grants permission, in the form of a permission letter, for the research to commence, participating teachers and certain parents must then give consent by signing a consent form and parents of other participating children can withhold consent by signing and returning parental consent forms.

All participants have the right to withdraw from the project at any time, for any reason, and with no consequence. This includes the destruction of data, upon request, up to 2 weeks after participation in the project is complete.

What happens now?
If you would like your school to participate in this project, please provide a letter granting permission or, if you have some questions, you can contact me via the contact details at the top of this information sheet. I am available to answer questions at any time and can arrange a time to meet with you if you would like to discuss the project further.

Yours Sincerely,

Jess Symes

This research project has been approved by the Human Research Ethics Committee of the Faculty of Arts and Social Sciences. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email fass-ethics@waikato.ac.nz, postal address, Faculty of Arts and Social Sciences, Te Kura Kete Aronui, University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240

Appendix B - Information Sheet (Teacher)

School of Psychology

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Information Sheet – Teachers

Associate Professor Angelika Anderson
Faculty of Social Science
Waikato University
jesss@taps.school.nz
Phone: 07 838 4466 ext 9209
Email: angelika.anderson@waikato.ac.nz

Jess Symes
Phone: 021757184
Email:

To whom it may concern,

You are invited to participate in a research project conducted by Jess Symes, under the supervision of Associate Professor Angelika Anderson from the Faculty of Social Science at the University of Waikato. This project is part of the requirement for the completion of my Master of Applied Psychology (in Behaviour Analysis). Please read this information sheet in full before deciding if you will participate. If you would like further information about the project, please contact myself or Associate Professor Anderson via the contact details above.

The topic of the research
This research project has been designed to reduce problem behaviours within the classroom of primary school-aged children in mainstream schools, by implementing a "tootling" intervention package. Tootling is a peer-mediated intervention during which students' records of appropriate peer behaviour are collected, counted, and read aloud to the class by the teacher. Previous research has found improvements in whole-class and individual behaviour as a result of tootling implementation. Improved behaviour in the classroom leads to a better learning environment for the students along with a more pleasant teaching environment for the educators.

What's involved
We are looking to recruit between one to two mainstream classes of students and their teachers. If you consent to participate, an information sheet and an email will be sent home to the parents of all the students in your class. Parents of children with high rates of disruptive/antisocial behaviours will be given the opportunity to sign informed consent forms if they want their child to be involved in the study. Other students' parents will be given the opportunity to opt out for their child, by returning the withholding consent form. If the parents of the remaining students choose not to respond, their child will be included in the study. Any students without consent will be excluded from data collection.

Your involvement
At various stages throughout the research, We will have discussions with you to gather information which will contribute towards decision-making regarding aspects of the intervention. One of these discussions will include when it is appropriate for us to make regular, unobtrusive classroom observations, lasting no more than one hour each.

During the baseline data collection stage, you will be asked to continue your classroom teaching as normal. Then, prior to the first intervention phase, you will be trained on how to implement tootling within your classroom. During this phase, you will guide the students to ensure they understand and participate in tootling. The third phase will be a return to baseline and you will be asked to remove all tootling equipment from your classroom and return to previous classroom management techniques. The final phase will be re-implementation of the tootling intervention.

Towards the end of the study, you will be invited to complete a 10-minute questionnaire assessing your views about the intervention.

On completion of the initial four phases, observations will stop and you will be invited to return to your previous classroom management techniques or continue using the tootling intervention. I will then return to collect follow-up data 4-6 weeks later.

It is expected that the initial stage of the study, including initial discussions and all four phases of data collection, will take up to one term to complete, with follow-up data taking no more than 2 weeks to collect.

Student involvement
Students will learn about the tootling procedure from you, after you have received training, and it will be incorporated alongside their normal classroom activities. During two intervention phases, students will be asked to record incidents of their peers' appropriate behaviour (tootling), throughout class-time. All students will work together to achieve a shared tootle-goal.

Throughout the study, I will engage in frequent, non-obtrusive observations of teacher nominated students who have high disruptive/antisocial behaviours. All observations will be video recorded to ensure data collection is correct, and to ensure the reliability and validity of the research. The recordings will only be shown to other members of the research team; will be stored securely; and will be deleted once my thesis has been submitted. Any student who has not given consent to be filmed, will not be in the camera shot. Any students, teachers or schools involved in the study will remain confidential and no personal information will be shared or reported on.

I will also observe teacher behaviour in relation to the amount of praise, reprimands, and prompts to behave appropriately, given by them to the students. Additionally, observations will be made on teacher happiness.

Results
It is expected that, as a result of the tootling intervention, student behaviour in the classroom will improve. Results will be presented within my master's thesis. It is also possible that results will be published in a journal article and/or presented at a conference. A summary of the results can be forwarded to the participating school, teachers, and parents of participating students, on request, as can a copy of any published journal articles.

Confidentiality
Although your name will be known to me, no personal data will be collected on any participating students. Participation in this project will remain confidential and no identifying information will be disclosed to anyone outside of the study. Codes and pseudonyms will be assigned to participating schools and teachers to ensure no data can be traced back to any participants. Neither the school nor participants will be identifiable in the presentation of any results.

Storage of data
On completion of my thesis all data (including all video recordings) will be given to my supervisor, Associate Professor Angelika Anderson, to be stored on a password-protected university drive for five years. Only Associate Professor Anderson and I will have access to the data at any time. After five years the data will be destroyed by deleting the electronic files.

Right to withdraw
Participation in this project is voluntary and the school, students, parents, or teachers are under no obligation to give consent to participate.

All participants have the right to withdraw from the project at any time, for any reason, and with no consequence. This includes the destruction of data, upon request, up to 2 weeks after participation in the project is complete.

What happens now?
If you are happy to participate in this project, please complete the consent form for teachers and return to myself. If you have any questions regarding the project, please contact me on the details at the top of this form.

Yours Sincerely,

Jess Symes

This research project has been approved by the Human Research Ethics Committee of the Faculty of Arts and Social Sciences. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email fass-ethics@waikato.ac.nz, postal address, Faculty of Arts and Social Sciences, Te Kura Kete Aronui, University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240

Appendix C - Consent Form (Teacher)

School of Psychology

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Consent Form – Teachers

Please retain a copy of this form for your personal records.

Research Project: Effectiveness of a tootling intervention on target students and teacher behaviours within New Zealand classrooms

Name of participant: _____

I have received a copy of the Information Sheet describing the research project and have been given sufficient time to read it. Any questions that I have, relating to the research, have been answered to my satisfaction. I understand that I can ask further questions about the research at any time during my participation, and that I can withdraw my participation at any time (up to two weeks) after completion of data collection.

I understand that I can ask to have the observations stopped at any time.

When I sign this consent form, I will retain ownership of the collected data, but I give consent for the researcher to use the data for the purposes of the research outlined in the Information Sheet.

I understand that my identity will remain confidential in the presentation of the research findings

Please complete the following checklist. Tick [✓] the appropriate box for each point.	YES	NO
I have the right to decline to participate in any part of the research activity.		
I know who to contact if I have any questions about the study in general.		
I understand that the information supplied by me could be used in future academic publications.		
I consent to being interviewed at the beginning of the research regarding what I value within my classroom and for my students.		
I consent to completing a questionnaire near the end of the study, as a post-intervention measure on my thoughts about the intervention.		
I consent to completing a questionnaire prior to commencing the study and again upon completion of the study on occupational stress		
I consent for the researcher to video record observation sessions. These videos will ONLY be shared as part of the research. It will be stored securely, and deleted once the results have been analysed.		
I wish to receive a copy of the findings		

Participant:	_____	**Researcher:**	_____
Signature:	_____	**Signature:**	_____
Date:	_____	**Date:**	_____
Contact Details:	_____	**Contact Details:**	_____
	_____		_____

Appendix D – Tootling Study Advertisement

Wanted

Participants to trial a pro-social behaviour intervention

For my Masters level research, I am investigating an evidence-based whole-classroom behaviour management strategy 'Tootling'.

Tootling is simple to use and efficient. It encourages students to report appropriate peer behaviour (Tootles). Classes work as a team to reach a target number of tootles, to earn a shared reward. Previous research on Tootling has found improvements in whole-class and individual behaviour.

I am looking for primary school teachers and their students to participate in an observational study. Observations should take around one term to complete, with some follow-up observations the following term. Teachers will also be asked to participate in an interview at the beginning of the research, and complete a questionnaire upon completion of the observations. If possible, I would like to focus on those classes which include an RTLB referred student – but encourage any interested teachers to contact me.

For more information or if you are interested in participating with your students, please contact the primary researcher on the details below.

Jess Symes
(primary researcher)
Ph: 021 757 184
Email: jess.symes86@gmail.com

Associate Professor Angelika Anderson (research supervisor)
Ph: + 64 7 837 9209
Email: angelika@waikato.ac.nz

This research project has been approved by the Human Research Ethics Committee of the Faculty of Arts and Social Sciences. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email fass-ethics@waikato.ac.nz

Appendix E - Information sheet (Parents/Guardians)

School of Psychology

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Information Sheet – Parents/Guardians

Associate Professor Angelika Anderson
Faculty of Social Science
Waikato University
jesss@taps.school.nz
Email: angelika.anderson@waikato.ac.nz

Jess Symes
Phone: 021757184
Email:

Dear Parents/Guardians,

Your child's class has been chosen to participate in a research project conducted by myself, Jess Symes, under the supervision of Associate Professor Angelika Anderson from the Faculty of Social Science at the University of Waikato. This project is part of the requirement for the completion of my Master of Applied Psychology (in Behaviour Analysis) and Postgraduate Diploma in Clinical Psychology at the University of Waikato and is sponsored by the university. Please read this information sheet in full. If you would like further information about the project, please contact myself or Associate Professor Anderson via the contact details above.

The topic of the research
This research project has been designed to improve overall behaviour within the classroom of primary school-aged children in mainstream schools, by implementing a "tootling" intervention package. Tootling is a peer-mediated intervention during which students' records of appropriate peer behaviour are collected, counted, and read aloud to the class by the teacher. Previous research has found improvements in whole-class and individual behaviour as a result of tootling implementation. Improved behaviour in the classroom leads to a better learning environment for the students along with a more pleasant teaching environment for the educators.

What's involved
Your child's teacher will be implementing a tootling intervention package as described above. All students in the classrooms will participate in the tootling strategy. We will be observing the classroom to see if tootling improves behaviour and learning in the class.

Student involvement
Students will learn about the tootling procedure from their trained teacher and it will be incorporated alongside their normal classroom activities. During two intervention phases, students will be asked to record incidents of their peers' appropriate (good) behaviour (tootling), throughout class-time. All students will work together to achieve a shared tootle-goal.

Throughout the study, I will engage in frequent, non-obtrusive observations of teacher behaviour, the whole class behaviour, and your child's behaviour. Any students, teachers or schools involved in the study will remain confidential and no personal information will be shared or reported on. These observations will all be video recorded, to ensure that the research has been undertaken correctly. These recordings will only be shared to those on the research team.

I will also observe teacher behaviour in relation to the amount of praise, reprimands, and prompts to behave appropriately, given by them to the students. Additionally, observations will be made on teacher happiness.

Towards the end of the study, the students will be invited to complete a voluntary 5-minute, 7-item, anonymous questionnaire, which asks about their thoughts on tootling.

Results
It is expected that, as a result of the tootling intervention, student behaviour in the classroom will improve and teachers will issue fewer reprimands and more praise. Results will be presented within my master's thesis. It is also possible that results will be published in a journal article and/or presented at a conference. A summary of the results can be forwarded to the participating school, teachers, and parents of participating students, on request, as can a copy of any published journal articles. Please contact the researchers or your child's school if you would like to see a copy of the results.

Confidentiality
Although the name of the participating teachers will be known to me, participation in this project will remain confidential and no identifying information will be disclosed to anyone outside of the study. Codes and pseudonyms will be assigned to participating schools and teachers to ensure no data can be traced back to any participants. Neither the school nor participants will be identifiable in the presentation of any results.

Storage of data
On completion of my thesis all data (including the video recordings) will be given to my supervisor, Associate Professor Angelika Anderson, to be stored on a password-protected university drive for five years. Only Associate Professor Anderson and I will have access to the data at any time. After five years the data will be destroyed by deleting the electronic files.

Right to withdraw
Participation in this project is voluntary and the school, students, parents, or teachers are under no obligation to give consent to participate.

All participants have the right to withdraw from the project at any time, for any reason, and with no consequence.

What happens now?
If you agree for your child to be observed individually and / or to be invited to complete the voluntary 5-minute, 7-item, anonymous questionnaire, please complete and sign the attached consent form and return it to me **by 26.7.24.** If you have any questions regarding the project, please contact me on the details at the top of this form.

Yours Sincerely,

Jess Symes

This research project has been approved by the Human Research Ethics Committee of the Faculty of Arts and Social Sciences. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email fass-ethics@waikato.ac.nz, postal address, Faculty of Arts and Social Sciences, Te Kura Kete Aronui, University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240

Appendix F - Consent Form (Parents/Guardians of Target Students)

School of Psychology

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Consent Form – Parents

Please retain a copy of this form for your personal records.

Research Project: Effectiveness of a tootling intervention on target students and teacher behaviours within New Zealand classrooms

Name of participant: _____

I have received a copy of the Information Sheet describing the research project and have been given sufficient time to read it. Any questions that I have, relating to the research, have been answered to my satisfaction. I understand that I can ask further questions about the research at any time during my participation, and that I can withdraw my child's participation at any time (up to two weeks) after completion of data collection.

I understand that I can ask to have the observations stopped at any time.

When I sign this consent form, I will retain ownership of the collected data, but I give consent for the researcher to use the data for the purposes of the research outlined in the Information Sheet.

I understand that my child's identity will remain confidential in the presentation of the research findings

Please complete the following checklist. Tick [✓] the appropriate box for each point.	YES	NO
I have the right to decline for my child to participate in any part of the research activity.		
I know who to contact if I have any questions about the study in general.		
I understand that the information supplied by me could be used in future academic publications.		
I give consent for the researcher to video record observation sessions in which my child _____ may be viewed. These videos will ONLY be shared as part of the research. It will be stored securely, and deleted once the results have been analysed.		
I wish to receive a copy of the findings		

Participant:	_____	**Researcher:**	_____
Signature:	_____	**Signature:**	_____
Date:	_____	**Date:**	_____
Contact Details:	_____	**Contact Details:**	_____
	_____		_____
	_____		_____

Appendix G - Withholding Consent Form (Parents/Guardians)

School of Psychology

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Withholding Consent Form – Parents/Guardians

Associate Professor Angelika Anderson
Faculty of Social Science
Waikato University
Phone: 07 838 4466 ext 9209
Email: angelika.anderson@waikato.ac.nz

Jess Symes
Phone: 021 757 184
Email: jesss@taps.school.nz

Research Project:
Effectiveness of a tootling intervention on target students and teacher behaviours within New Zealand classrooms

I have read and understood the Information Sheet regarding the above research project and do **NOT** give consent for my child to participate in the research on classroom behaviour.

Participant's name (please print): _____

Signature: _____ Date: _____

Appendix H – Initial Teacher interview (Classroom A)

I am going to introduce a simple evidence-based procedure into your classroom which has been found to improve student behaviour. "Tootling" is a procedure whereby students report the good behaviour of their peers, by writing the behaviour on note cards and posting them into a container. The idea is that the students all work together to reach a pre-determined (but secret) tootle goal, which will be disclosed to the students at the end of the lesson/day, in order to receive a reward. The total number of tootles recorded is posted publicly, on the wall, so that all students can see their daily progress. Once the target is revealed, if it has been met, the students immediately receive their reward. If the target is not met, those tootles for the day stay on the public chart and are used towards the next day's target.

Name: _____ Age: _____ Years teaching experience: ____

Together, there are a couple of things we need to decide, but firstly I would like you to consider what you value.

What do you value about being a teacher?

_____
_____
_____
_____
_____

What values do you hold for your students?

_____
_____
_____
_____

With these values in mind, what behaviours would you like to see more of in the classroom?

_____
_____
_____
_____
_____

What behaviours would you like to see less of in the classroom?

_____
_____
_____
_____
_____

Again, while considering what you value, please give me some suggestions of what you might like the students to have as a reward for reaching their target. It is important that this reward aligns with your values.

_____
_____
_____

_____
_____

What do you think is an achievable daily target for the students to aim for, in order to win their reward?

_____
_____

If we were to include a longer-term target, how many days would you like them to achieve this goal, before winning a larger reward?

_____
_____

Tick the box if you consider them to be disruptive behaviours

- ☐ Making audible noises not related to the task at hand (e.g.: talking without permission, making animal sounds, or grunting)
- ☐ Being out-of-seat (not being in contact with their chair for more than 3 seconds and standing/ walking around without permission)
- ☐ Playing with objects (unrelated to the task at hand)

Tick the box if you consider them to be academically engaged behaviours

- ☐ Following instructions from teacher
- ☐ Looking at the teacher while class is in session
- ☐ Responding to teacher posed questions
- ☐ Working on independent work
- ☐ Actively participating in group assignments

Do you have any questions or need clarification for anything?

_____
_____
_____
_____

Which students in particular would you like to be our targeted students? Which behaviours are they showing that you would like to decrease?

_____
_____
_____
_____
_____
_____
_____
_____

Appendix I – Data Collection Form: On-Task Behaviour (Classroom A)

Date: Observer:

Definitions

Academically Engaged Behaviour (AEB): actively participating in sustained, ongoing, engagement with teacher-set independent/group/ whole class tasks; attending to teacher instructions.

Examples:

- Following instructions within 5-seconds of being issued.
- Sitting quietly, with hands and feet to themselves, when on the mat.
- Actively participating during class mat time/assigned group activities (answering questions when prompted; attending to the speaker; taking turns).
- Sitting quietly at table, attending to set independent task.
- Using classroom materials in an appropriate manner to complete a set task.
- Task-related movement around the classroom.

Non-Examples

- Non-task related movement around the classroom.
- Non-task related talking with peers.
- Playing with non-task related objects/computer programmes.
- Disruptive behaviours – loud negative vocalisations, interrupting peers, trying to attain peers' attention.

Interval: 10-seconds, 120 intervals **Method:** Momentary-time Sampling

Codes: Target student 1 = TS1, Target student 2 = TS2, Target student 3 = TS3, Target Student 4 = TS4, Comparison student 1 = CS1, Comparison student 2 = CS2.

✓ = behaviour occurred x = behaviour did not occur - = student not present

Interval	**1 (TS1)**	**2 (CS1)**	**3 (TS2)**	**4 (CS2)**	**5 (TS3)**	**6 (TS4)**
On-task						
Notes						
Interval	**7 (TS1)**	8 (CS1)	9 (TS2)	10 (CS2)	11 (TS3)	**12 (TS4)**
On-task						
Notes						
Interval	**13 (TS1)**	14 (CS1)	15 (TS2)	16 (CS2)	17 (TS3)	**18 (TS4)**
On-task						
Notes						
Interval	**19 (TS1)**	20 (CS1)	21 (TS2)	22 (CS2)	23 (TS3)	**24 (TS4)**
On-task						
Notes						
Interval	**25 (TS1)**	26 (CS1)	27 (TS2)	28 (CS2)	29 (TS3)	**30 (TS4)**
On-task						
Notes						
Interval	**31 (TS1)**	32 (CS1)	33 (TS2)	34 (CS2)	35 (TS3)	**36 (TS4)**
On-task						
Notes						
Interval	**37 (TS1)**	38 (CS1)	39 (TS2)	40 (CS2)	41 (TS3)	**42 (TS4)**
On-task						
Notes						

Interval	**43 (TS1)**	44 (CS1)	45 (TS2)	46 (CS2)	47 (TS3)	**48 (TS4)**
On-task						
Notes						
Interval	**49 (TS1)**	50 (CS1)	51 (TS2)	52 (CS2)	53 (TS3)	**54 (TS4)**
On-task						
Notes						
Interval	**55 (TS1)**	56 (CS1)	57 (TS2)	58 (CS2)	59 (TS3)	**60 (TS4)**
On-task						
Notes						
Interval	**61 (TS1)**	62 (CS1)	63 (TS2)	64 (CS2)	65 (TS3)	**66 (TS4)**
On-task						
Notes						
Interval	**67 (TS1)**	68 (CS1)	69 (TS2)	70 (CS2)	71 (TS3)	**72 (TS4)**
On-task						
Notes						
Interval	**73 (TS1)**	74 (CS1)	75 (TS2)	76 (CS2)	77 (TS3)	**78 (TS4)**
On-task						
Notes						
Interval	**79 (TS1)**	80 (CS1)	81 (TS2)	82 (CS2)	83 (TS3)	**84 (TS4)**
On-task						
Notes						
Interval	**85 (TS1)**	86 (CS1)	87 (TS2)	88 (CS2)	89 (TS3)	**90 (TS4)**
On-task						
Notes						
Interval	**91 (TS1)**	92 (CS1)	93 (TS2)	94 (CS2)	95 (TS3)	**96 (TS4)**
On-task						
Notes						
Interval	**97 (TS1)**	98 (CS1)	99 (TS2)	100 (CS2)	101 (TS3)	**102 (TS4)**
On-task						
Notes						
Interval	**103 (TS1)**	104 (CS1)	105 (TS2)	106 (CS2)	107 (TS3)	**108 (TS4)**
On-task						
Notes						
Interval	**109 (TS1)**	110 (CS1)	111 (TS2)	112 (CS2)	113 (TS3)	**114 (TS4)**
On-task						
Notes						
Interval	**115 (TS1)**	116 (CS1)	117 (TS2)	118 (CS2)	119 (TS3)	**120 (TS4)**
On-task						
Notes						

# of intervals present						

	TS1		CS1		TS2		CS2		TS3		(TS4)	
	Total	**% of present intervals**	**Total**	**% of present intervals**	**Total**	**% of present intervals**	**Total**	**% of present intervals**	**Total**	**% of present intervals**	**Total**	**% of present intervals**
On-task												

Appendix J - Data Collection Form: Teacher Praise/Reprimand Behaviour

Date: **Class:**

Operational definition:

Behaviour specific praise: A positive verbal comment showing approval, of a particular behaviour; the specific behaviour must be specified during the praise.
Example: "Johnny, I like the way you are sitting quietly". Non-example: "good, Johnny"

Non-specific praise: A verbal or gesture showing approval.
Examples: "Good work", or 'thumbs up' gesture. Non-example:" I like the way Sophia is using her listening body" or "sit up properly"

Reprimand: A verbal comment or gesture, showing disapproval.
Example: "Stop that now!") Non-example: "I like the way you are sitting still", smiling

Individual-directed: The praise/reprimand was directed at a named individual, or the teacher was looking at a specific individual .
Examples: "Johnny, I like the way you are working quietly", or "Good, Mary". Non-examples: "Good work", "I like how quiet it is".

Group-directed: The praise/ reprimand was directed at unnamed individuals, the whole class.
Examples: "Good work", "I like how quiet it is". Non-examples: "Johnny, I like the way you are working quietly", or "Good, Mary".

Time: 20 minutes Recording: Event recording (tallies)

	Behaviour-specific Praise	Non-specific praise	Reprimand
Individual-directed: (Tally instances of behaviour)			
Subtotal:			
Group-directed: (Tally instances of behaviour)			
Subtotal :			
Notes:			

Total behaviour-specific praise: **Rate per minute:**

Total Non-specific praise: **Rate per minute:**

Total teacher reprimand: **Rate per minute:**

Appendix K – Data Collection Form: Teacher Indices of Happiness Behaviour

Date:

Operational definitions
Smiling: upward curvature of the mouth, with or without showing teeth
Approving: positive verbal statements, nodding head.
Neutral: neither smiling; approving; nor negative facial expressions, reprimands.

Intervals: 10-s (followed by 5-s recording interval), 40 intervals

✓ = behaviour occurred x = behaviour did not occur

	1	2	3	4	5	6
Smiling						
Approving						
neutral						
	7	**8**	**9**	**10**	**11**	**12**
Smiling						
Approving						
neutral						
	13	**14**	**15**	**16**	**17**	**18**
Smiling						
Approving						
neutral						
	19	**20**				
Smiling						
Approving						
neutral						

	Total intervals	% of intervals
Smiling		
Approving		
Neutral		

Appendix L - Teacher Script (Classroom A)

Please read the following script to the students, which will explain how tootling will work in your classroom.

For the next two weeks we'll be playing a game called 'Tootling' in class. The tootling challenge is a game where you catch other people in the class doing good things. You are used to the teachers giving out Manaaki high-flyers. Well, Tootles are like that, but you give them to each other. I will be giving each table a piles of Tootle cards. When you see someone in class do something good, you can fill one of these in and place your 'Tootle' card in this 'Tootle box' - *show container.*

These are Tootle cards *hold up a fan of the different coloured tootle cards.* Here is a big one, so everyone can see - *hold up an enlarged laminated copy of a tootle card.* This is where you will write your name, I will write my name – *point to the spot, and write "Mrs L".* You can see pictures of some of your classmates here. Each table group will have their own pictures on their table colour card, to make it easier to find them. You will see that there are four different coloured papers. Each colour is for each table group. If you are blue table group please stand up. See the blue papers have the blue group students' pictures on it. *Hold up an enlarged blue card.* Who can find Cassie's face? *Choice someone to point to it.* Who can find Seb's face? *Choice someone to point to it.* Who can find Braxton's face? *Choice someone to point to it*. Who can find Bonnie's face? *Choice someone to point to it*. You may sit down. Stand up if you are on the green table. *Show enlarged green card and match each person to their picture.* You may all sit down. Stand up if you are on the pink table. *show the enlarged pink card and match each person to their picture*. You may all sit down. Stand up if you are on the yellow table. *Show the enlarged yellow card and match each person to their picture*. You may all sit down. When you see someone do the right thing, you will find their picture and put a circle around it. You don't just have to choose people in your group; you can write a tootle about anyone in the class. But you can't write about yourself.

Underneath the students' photos, you can see four pictures with words beside them. These are the things we are going to catch others doing. *Point to*  . This says, "using their listening bodies", can you show me using your listening bodies. Well done. If you see someone using their listening body, you will circle this picture like this (circle the picture). *Point to* 

. This picture says, "working quietly", if you see someone working quietly you will circle this one (rub out the initial circle, and circle this one).

This one says, "helping someone" *Point to*  . If you see someone helping another person, you will circle this picture. What are some examples of how we can help others in the class. *(accept responses such as "giving someone their book", "helping find a crayon" etc – what you think would be helpful in your classroom).* If you see someone do one of these things, then you will circle this picture *circle the picture.*

The last picture *point to*  says "used their kind words". What are some kind words we might hear? (accept such responses as forms of encouragement, manners, compliments for good work, etc). If you see someone use their kind words you will circle this picture, like this *circle the picture.* We are going to practise remembering what each picture means. When I hold up the picture, tell me what It is "listening bodies, working quietly, helping, or Kind words. What does this mean *hold up an enlarged picture – congratulate when they are correct. Repeat until all pictures have been correctly identified at least twice.*

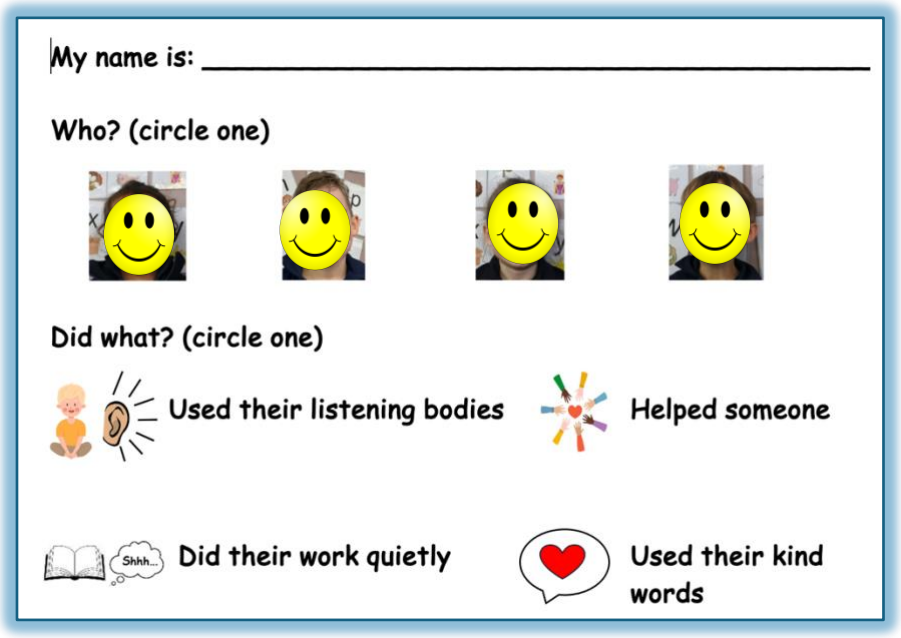
Let's practise filling in a tootle together. X can you please come up and write your name in the name spot. Can I please have - *choose 2 students, quietly tell to say something kind to B. Ask the* class - Who did the right thing? What colour group are they on? *Hold up all four enlarged coloured tootles.* Who can find their picture on the card? Well done, can you please circle it. What did A just do? Did they use their listening body? No. Did they work quietly? No. Did they help B? No. Did they use their kind words? Yes. Which picture is kind words? Well done, please circle it. Remember, you can only choose one good thing on each Tootle. Tootles do not need to be a secret so you can tell people when you are writing about them, as long as it is something your classmate actually did. Now we have filled it all in, we put it in the Tootle box – *model doing so.* It is important to not disturb the class or the teacher while you're filling out your tootles and putting them in the box. The game is only fun if everyone tries to write a Tootle, and for that you will all have to be on your best behaviour! By completing your work, helping your classmates and showing kindness/ manaakitanga.

We are going to work together as a team to see how many times we can catch each other doing the right thing. Before lunchtime, once everyone has put their Tootles in the Tootle box I will read some of your Tootles and let you know the sort of awesome behaviours you've noticed each other do. If the Tootle has more than one person or behaviour circled, or has no name, it won't be counted. I may ask some volunteers to tell us about a tootle they put in. I will count the number of correct Tootles and move this smiley face up the rocket ship. Up one number for each Tootle – *show the rocket ship and model moving the smiley face.* If we reach 10, we will get a gold star in the sky and we will get a little prize. You get to choose what our little prize is. The choices are: *a* or *b (e.g. Danny go and Go Noodle)*. you can only choose one. Who wants *a* as the prize? Who wants *b* as the prize. The most people wanted *a/b*. This will be our prize if we get 10 Tootles and a gold star! When we have worked together and there are five gold stars in the sky, we will get a big prize. We are going to vote on what our big prize is going to be. The options are *a* or *b.* (e.g. We will get to go out to play 10 minutes early!). Who chooses a? who chooses b? The prize will be ____. It's a reward for writing Tootles about your classmate's good behaviours. In case the class does not get 10 stars and earn a star for that day, don't worry. We can add to the rocket ship the next day!

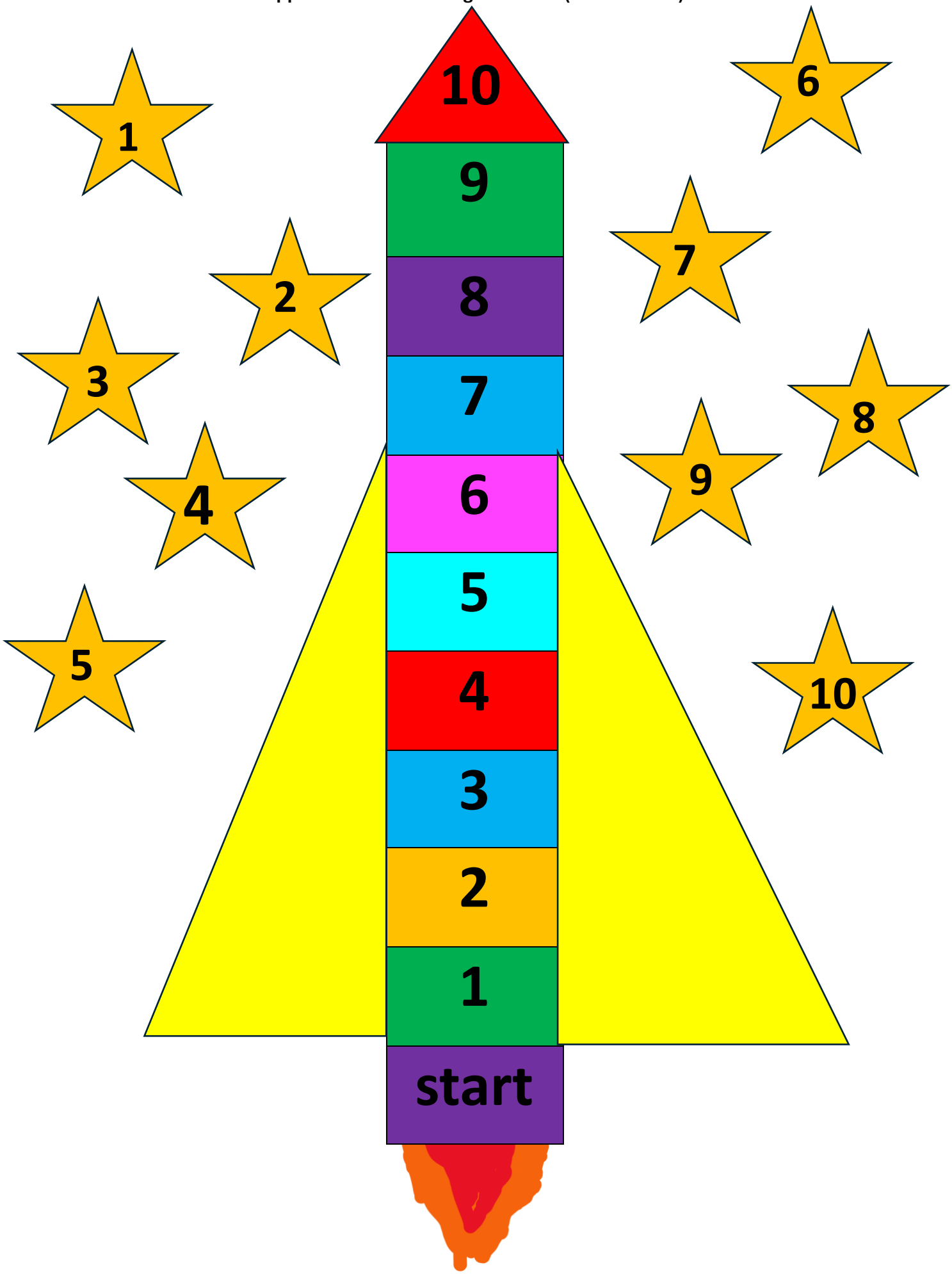
Any questions?

Finally, I'd like you all to practice filling in one tootle on a piece of paper and posting it in the tootle container. *(Read each student's example and provide feedback on whether each is correct. Read/show several correct examples out loud to the class).*

Appendix M – Tootle Recording tickets sample (Classroom A)



Appendix N – Tootle Progress Chart (Classroom A)



Appendix O – Procedural Integrity – Teacher Training (Classroom A)

Date:_____ Teacher: _____

Tick appropriately, once item has been discussed with teacher…

Introducing tootling

- Provide script for teacher ☐
- Explain what a "tootle" is ☐

Explain each step of the procedure (from the script)

- Step 1: Introduce tootling as a challenge ☐
- Step 2: Introduce the Tootle cards and explain how to fill them in ☐
- Step 3: Explain the tootling procedure (how to fill them out) ☐
- Step 4: Explain where tootles go and when ☐
- Step 5: Explain the teamwork dynamic of the intervention (set goal). ☐
- Step 6: Discuss possible rewards ☐
- Step 7: Practise correctly filling in a tootle (e.g. record own name, circle the picture of peer, and circle one of that peer's behaviours. ☐
- Step 8: Give feedback (if necessary) ☐

Rehearse script

- Allow teacher to read/practise script as many times as needed ☐
- Provide correctional feedback/further explanations if/when required ☐

Any questions?

- Answer any questions ☐

Number of items complete: /14 treatment integrity %:_____

Date:

Observer:

Appendix P – Procedural Integrity- Student Training (Classroom A)

Date: **Teacher:** **Class**

Did the teacher…

1. Explain what tootling is. ☐
2. Introduce the tootling card and explain how to fill it out. ☐
3. Discuss what behaviour each symbol represents. ☐
4. Practise recognising the symbols flash cards ☐
5. Explain that each colour card represents a table. ☐
6. Model and Practise finding the correct colour card for each table. ☐
7. Role play and model completing at least one written example. ☐
8. Introduce the tootle box, where it will be located, and when to use it. ☐
9. Introduce the progress chart, where it will be, and how to move the marker. ☐
10. Discuss teamwork, the 10 tootle goal, and what will happen if daily goal is/isn't met ☐
11. Discuss potential rewards. ☐
12. Ask for and answer any questions. ☐
13. Allow everyone to practise tootling and provide appropriate feedback. ☐

Number of items complete: /13 treatment integrity %:_____

Date:

Observer:

Appendix Q – Treatment Integrity Daily Checklist: Intervention Phase (Teacher) - Classroom A

Please tick when each item has been completed daily

Date										
Prior to tootling	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x
x4 Tootle cards of each colour placed on each table										
Tootle box accessible										
Progress chart visible and accessible										
Tootle procedure & symbols reviewed – if needed										
End of the day										
Remind set tootle target										
Count tootles										
Update target chart (reset if target was met)										
Provide reward if target met										
Ask 2-3 volunteers to share about a tootle they did										
Read 2-3 tootles and provide praise/feedback										
Daily Tootle Total										

For researcher's use only
Number of items completed: __/10

Appendix R – Treatment Integrity Daily Checklist: Intervention Phase (Researcher) - Classroom A

Please tick when each item has been completed daily

Date										
Prior to tootling	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x
Tootle cards of each colour on each table										
Tootle box accessible										
Progress chart visible/accessible										
Progress chart updated										
Tootles counted										
Reward provided if target met										
1-2 volunteers asked to share a tootle they submitted										
2-3 tootles read; feedback/praise provided										

For researcher's use only

Number of items completed: __/8

Appendix S – Modified Behaviour Intervention Scale (BIRS)

Having finished implementing the Tootling intervention, please evaluate the intervention by circling the number which best describes your agreement or disagreement with each statement. You must answer each question		Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1.	Tootling was an acceptable intervention for children's problem behaviour.	1	2	3	4	5	6
2.	Most teachers would find tootling appropriate for a variety of behaviour problems.	1	2	3	4	5	6
3.	Tootling proved effective in changing children's problem behaviour.	1	2	3	4	5	6
4.	I would suggest the use of tootling to other teachers.	1	2	3	4	5	6
5.	Behaviour in the classroom was severe enough to warrant the use of tootling.	1	2	3	4	5	6
6.	Most teachers would find tootling suitable for improving general classroom behaviour.	1	2	3	4	5	6
7.	I would be willing to use tootling in the classroom again.	1	2	3	4	5	6
8.	Tootling resulted in negative side-effects for some children.	1	2	3	4	5	6
9.	Tootling was appropriate for a variety of children.	1	2	3	4	5	6
10.	Tootling was consistent with other strategies I have used in the classroom setting.	1	2	3	4	5	6
11.	Tootling was a fair way to handle children's problem behaviour.	1	2	3	4	5	6
12.	Tootling was reasonable for the behaviour problems experienced in my classroom.	1	2	3	4	5	6
13.	I liked the procedures used in tootling.	1	2	3	4	5	6
14.	Tootling was a good way to handle classroom behaviour.	1	2	3	4	5	6
15.	Overall, tootling was beneficial for the children in my classroom.	1	2	3	4	5	6
16.	Tootling quickly improved the children's behaviour.	1	2	3	4	5	6
17.	Tootling will produce a lasting improvement in the children's behaviour.	1	2	3	4	5	6
18.	Tootling improved the children's behaviour to the point that it was not noticeably deviate from other children's behaviour.	1	2	3	4	5	6
19.	Soon after using tootling, I noticed a positive change in problem behaviour.	1	2	3	4	5	6
20.	The children's behaviour will likely remain at an improved level even after tootling is discontinued.	1	2	3	4	5	6
21.	Using tootling not only improved the children's behaviour in the classroom, but also in other settings (e.g., other classrooms, home).	1	2	3	4	5	6
22.	When comparing the children in my classroom with well-behaved peers before and after use of tootling, the children's and the peers' behaviour was more alike after using tootling.	1	2	3	4	5	6
23.	Tootling produced enough improvement in the children's behaviour that behaviour is no longer a problem in the classroom.	1	2	3	4	5	6
24.	Other behaviours related to the problem behaviour also improved as a result of tootling.	1	2	3	4	5	6

Von Brock, M. B., & Elliott, S. N. (1987). Influence of treatment effectiveness information on the acceptability of classroom interventions. *Journal of School Psychology, 25*(2), 131-144. doi:10.1016/0022-4405(87)90022-

Appendix T – Modified Children's Intervention Rating Profile (CIRP) - (Classroom A)

I'd love to know what you thought about tootling! Please circle the smiley face which shows how much you agree or disagree with each sentence below.

		I do not agree				I agree
1	Tootling is fair					
2	Tootling was too hard for me					
3	Tootling caused problems with my friends					
4	There are better ways than Tootling to help kids behave.					
5	Tootling would help other children too					
6	I liked tootling					
7	I think tootling helped me do better in school					

Turco, T. L., & Elliott, S. N. (1986). Students' acceptability ratings of interventions for classroom misbehaviors: A study of well-behaving and misbehaving youth. *Journal of Psychoeducational Assessment, 4*(4), 281-289. doi:10.1177/073428298600400404

Appendix U - Initial teacher interview (Classroom B)

Teacher Interview Script

I am going to introduce a simple evidence-based procedure into your classroom which has been found to improve student behaviour. "Tootling" is a procedure whereby students report the good behaviour of their peers, by writing the behaviour on note cards and posting them into a container. The idea is that the students all work together to reach a pre-determined (but secret) tootle goal, which will be disclosed to the students at the end of the lesson/day, in order to receive a reward. The total number of tootles recorded is posted publicly, on the wall, so that all students can see their daily progress. Once the target is revealed, if it has been met, the students immediately receive their reward. If the target is not met, those tootles for the day stay on the public chart and are used towards the next day's target.

Name: Age: teaching experience (years):

Together, there are a couple of things we need to decide, but firstly I would like you to consider what you value.

What do you value about being a teacher?

_____
_____
_____
_____

What values do you hold for your students?

_____
_____
_____
_____

With these values in mind, what behaviours would you like to see more of in the classroom?

_____
_____
_____
_____
_____

What behaviours would you like to see less of in the classroom?

_____
_____
_____

Again, while considering what you value, please give me some suggestions of what you might like the students to have as a reward for reaching their target. It is important that this reward aligns with your values.

_____
_____
_____
_____

What do you think is an achievable target-range for the students to aim for in order to win their reward daily?

_____

Tick the box if you consider them to be disruptive behaviours

- ☐ Making audible noises not related to the task at hand (e.g.: talking without permission, making animal sounds, or grunting)
- ☐ Being out-of-seat (not being in contact with their chair for more than 3 seconds and standing/ walking around without permission)
- ☐ Playing with objects (unrelated to the task at hand)

Tick the box if you consider them to be academically engaged behaviours

- ☐ Following instructions from teacher
- ☐ Looking at the teacher while class is in session
- ☐ Responding to teacher posed questions
- ☐ Working on independent work
- ☐ Actively participating in group assignments

Which students in particular would you like to be our targeted students? Which behaviours are they showing that you would like to decrease?

_____
_____
_____
_____
_____
_____

What are behaviours you consider as showing each of these values?

Responsibility:

Respectfulness:

Resilience:

_____

Building positive relationships:

Appendix V – Data Collection Form: On-Task Behaviour (Classroom B)

Date: Observer:

Definitions

Academically Engaged Behaviour (AEB): actively participating. In sustained, ongoing, engagement with teacher-set independent/group/ whole class tasks; attending to teacher instructions.

Examples:

- Following instructions within 5 seconds of being issued.
- Sitting quietly, with hands and feet to themselves, when on the mat.
- Actively participating during class mat time/assigned group activities (answering questions when prompted; looking at the speaker; taking turns).
- Sitting quietly at table, attending to set independent task.
- Using classroom materials in an appropriate manner to complete set task.
- Task-related movement around the classroom.

Non-Examples

- Non attending for longer than 5-s intervals, from teacher (during mat time), or set task.
- Non-task related movement around the classroom.
- Non-task related talking with peers.
- Playing with non-task related objects/computer programmes.
- Disruptive behaviours – loud negative vocalisations, interrupting peers, trying to attain peers' attention.

Interval: 10-seconds, 120 intervals

Codes: Target student 1 = TS1, Target student 2 = TS2, Target student 3 = TS3, Comparison student 1 = CS1, Comparison student 2 = CS2, Comparison student 3 = CS3

✓ = behaviour occurred x = behaviour did not occur - = student not present

Interval	**1 (TS1)**	**2 (CS1)**	**3 (TS2)**	**4 (CS2)**	**5 (TS3)**	**6 (CS3)**
On-task						
Notes						
Interval	**7 (TS1)**	8 (CS1)	9 (TS2)	10 (CS2)	11 (TS3)	**12 (CS3)**
On-task						
Notes						
Interval	**13 (TS1)**	14 (CS1)	15 (TS2)	16 (CS2)	17 (TS3)	**18 (CS3)**
On-task						
Notes						
Interval	**19 (TS1)**	20 (CS1)	21 (TS2)	22 (CS2)	23 (TS3)	**24 (CS3)**
On-task						
Notes						
Interval	**25 (TS1)**	26 (CS1)	27 (TS2)	28 (CS2)	29 (TS3)	**30 (CS3)**
On-task						
Notes						
Interval	**31 (TS1)**	32 (CS1)	33 (TS2)	34 (CS2)	35 (TS3)	**36 (CS3)**
On-task						
Notes						

Interval	**37 (TS1)**	38 (CS1)	39 (TS2)	40 (CS2)	41 (TS3)	**42 (CS3)**
On-task						
Notes						
Interval	**43 (TS1)**	44 (CS1)	45 (TS2)	46 (CS2)	47 (TS3)	**48 (CS3)**
On-task						
Notes						
Interval	**49 (TS1)**	50 (CS1)	51 (TS2)	52 (CS2)	53 (TS3)	**54 (CS3)**
On-task						
Notes						
Interval	**55 (TS1)**	56 (CS1)	57 (TS2)	58 (CS2)	59 (TS3)	**60 (CS3)**
On-task						
Notes						
Interval	**61 (TS1)**	62 (CS1)	63 (TS2)	64 (CS2)	65 (TS3)	**66 (CS3)**
On-task						
Notes						
Interval	**67 (TS1)**	68 (CS1)	69 (TS2)	70 (CS2)	71 (TS3)	**72 (CS3)**
On-task						
Notes						
Interval	**73 (TS1)**	74 (CS1)	75 (TS2)	76 (CS2)	77 (TS3)	**78 (CS3)**
On-task						
Notes						
Interval	**79 (TS1)**	80 (CS1)	81 (TS2)	82 (CS2)	83 (TS3)	**84 (CS3)**
On-task						
Notes						
Interval	**85 (TS1)**	86 (CS1)	87 (TS2)	88 (CS2)	89 (TS3)	**90 (CS3)**
On-task						
Notes						
Interval	**91 (TS1)**	92 (CS1)	93 (TS2)	94 (CS2)	95 (TS3)	**96 (CS3)**
On-task						
Notes						
Interval	**97 (TS1)**	98 (CS1)	99 (TS2)	100 (CS2)	101 (TS3)	**102 (CS3)**
On-task						
Notes						
Interval	**103 (TS1)**	104 (CS1)	105 (TS2)	106 (CS2)	107 (TS3)	**108 (CS3)**
On-task						
Notes						
Interval	**109 (TS1)**	110 (CS1)	111 (TS2)	112 (CS2)	113 (TS3)	**114 (CS3)**
On-task						
Notes						

Interval	**115 (TS1)**	116 (CS1)	117 (TS2)	118 (CS2)	119 (TS3)	**120 (CS3)**
On-task						
Notes						
# of intervals present						

	TS1		**CS1**		**TS2**		**CS2**		**TS3**		**CS3**	
	Total	**% of present intervals**	**Total**	**% of present intervals**	**Total**	**% of present intervals**	**Total**	**% of present intervals**	**Total**	**% of present intervals**	**Total**	**% of present intervals**
On-task												

Appendix W – Teacher Script (Classroom B)

Please read the following script to the students, which will explain how tootling will work in your classroom.

Tootle-tickets:
For the next few weeks we'll be taking part in the 'Tootling challenge' in class. The tootling challenge is a game where you catch your classmates doing good things. Just like how the teachers give out Manaaki high-fliers for catching students showing the school values. I will be giving each of you two 'tootle tickets' each day. So, when you see another student in class do something good, you can write it down and place your ticket or "tootle" in this container (show container). There is also this progress chart so we can see how we are doing every day. (Discuss examples of good classroom behaviours/how we can show different values) If you saw XYZ help ABC with his worksheet or if EFG cleared her desk after completing her work, those are examples that you can write on the tootle tickets. This is called 'tootling', the opposite of tattle-tailing. (Show ticket) When you fill in the tootle, it is important that you write your name here (point to name spot), and then write the name of the student who did something good here (point to the correct spot). Decide which value you think the person has shown, and tick beside it. Then, look under that value and EITHER choose <u>one</u> of the typed behaviours (point to the list below each value), OR you can write a more specific behaviour down here (point to the 'other' option). Here is an example *(show example).* Tootles do not need to be a secret so you can tell people when you are writing about them, as long as it is something your classmate actually did. It is important to not disturb the class or the teacher while you're writing and submitting your tootles. The challenge is only fun if everyone tries to write a tootle and for that you will have to be on your best behaviour, by completing your work, helping your classmates and showing our TAPS values.

Tootle goal:
Now, here's the challenge - everyone in the class must work together as a team to try to reach a target number of tootles. If the target is not reached, all that day's tootles will be carried over to the next day's target. We will keep track of our progress on this chart (show target chart). Each day the target is met, we will put a star on the 'target met' tracker (point to the target-met tracker). When we have met the daily target <u>6</u> times, we will get a small prize. If we meet the daily target for <u>12</u> days, we will get a big prize! The target will be different each day and will be randomly chosen at each morning, but will be kept a secret until the end of the day. So, it is important for you all to notice and write about as many different classmates' good behaviour as possible to help your team. At the end of each day I will count the number of tootles, and then read some of them aloud and let you know the sort of awesome behaviour you've noticed about each other. If the Tootle has more than one person's name written, or behaviour tickled; or has something which is not a good behaviour; or has is not named, it won't be counted.

Rewards:
So, let's talk about the rewards! We need to decide on a small reward and a big reward. I have some ideas for rewards which I think you might enjoy, but first I'd like to hear if you have any ideas. Remember, they need to be appropriate for the whole class. *(Let the children give you their suggestions. If any of these matches with your own ideas or are good ideas that you haven't already thought of, write these on the board, and have a class vote. If you don't like any of the children's suggestions, make your own to see if they can agree on any of yours. It is important that you AND the children are happy with the rewards).*
(Examples for small prize = Go Noodle, game of paper, scissor, rock etc)
(Example for big prize = Kahoot, 15 minutes early to play, or free-time, movie afternoon, etc)

Tootle Examples:
Now we will talk about the sorts of things you can and can't write down about other students *(this can either be done as a class discussion or you can give 3-4 examples of correct and incorrect tootles from the list below - However, you MUST give the first example to the class from this list)*

Correct examples you can discuss:

1. **(*student name*) did what Whaea Jaime instructed them to do **
2. (*student name*) helped me
3. (*student name*) worked quietly
4. *(student name)* raised their hand before answering a question

Things that would NOT count as a tootle would be

1. If a student walked to the door
2. If a student was wearing nice shoes
3. If the student's hair looked cool today

Explain what will happen each Monday with the value sticker.

Any questions?
Finally, I'd like you all to practice writing one tootle on a piece of paper and posting it in the tootle container. *(Read each student's example and provide feedback on whether each is correct. Read several correct examples out loud to the class).*

Appendix X – Tootle Recording tickets (classroom B)

Tootle ticket

Your Name:

Who are you writing about:

What value did this person show? (Tick one value and one behaviour)

☐ Take Responsibility Haepapa

___Stayed on task
___Were prepared
___Tidied up without being asked

☐ Act Respectfully Whakaute

___ Used manners
___ Listened quietly
___ quickly followed instructions

☐ Building positive Relationships Whakawhanaunga

___ Helped others
___ Encouraged
___ included others

☐ Show Resilience Aumangea

___ finished hard work
___ Managed emotions
___ Gave hard things a go

Other:_____

Appendix Y– Tootle Progress Chart (Classroom B)

Tootle Progress Chart

51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

Daily Tootle target met:

Appendix Z – Procedural Integrity: Teacher Training (Classroom B)

Date:_____ **Teacher: _____**

Tick appropriately, once item has been discussed with teacher…

Introducing tootling

- Provide script for teacher ☐
- Explain what a "tootle" is ☐

Explain each step of the procedure (from the script)

- Step 1: Introduce tootling as a challenge ☐
- Step 2: Introduce the Tootle tickets and explain how to fill them in ☐
- Step 3: Explain procedure ☐
- Step 4: Explain where tootles go and when ☐
- Step 5: Explain the teamwork, random tootle target ☐
- Step 6: Discuss rewards ☐
- Step 7: Practise correctly filling in a tootle (e.g. record own name, peer's name, Value shown, and peer's behaviour. ☐
- Step 8: Give feedback (if necessary) ☐

Rehearse script

- Allow teacher to read/practise script as many times as needed ☐
- Provide correctional feedback/further explanations if/when required ☐

Any questions?

- Answer any questions ☐

Number of items complete: /13 treatment integrity %:_____

Date:

Observer:

Appendix AA – Procedural Integrity: Student Training (Classroom B)

Date: **Teacher:** **Class**

Did the teacher…

1. Explain what tootling is. ☐
2. Introduce the tootle ticket and explain how to fill it out. ☐
3. Describe what is an incorrectly filled in tootle ticket.
4. Discuss examples of behaviours for each value.
5. Introduce the tootle box, where it will be located, and when to use it. ☐
6. Introduce the progress chart, where it will be, and how to move the marker. ☐
7. Discuss teamwork, tootle goal, and what will happen if daily goal is/isn't met ☐
8. Discuss potential rewards. ☐
9. Ask for and answer any questions. ☐
10. Allow everyone to practise tootling and provide appropriate feedback. ☐

Number of items complete: /10 treatment integrity %:_____

Date:

Observer:

Appendix AB – Treatment Integrity Daily Checklist: Tootle Intervention Phase (Teacher)

Please tick when each item has been completed daily

Date										
Prior to tootling	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x
8+ Tootle tickets on each table group										
Tootle box accessible										
Progress chart visible and accessible										
Tootle procedure reviewed – if needed										
Select secret tootle target – keep secret										
End of the day:	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x
Reveal secret tootle target										
Count tootles										
Update target chart (reset if target was met)										
Provide reward if target met										
Read 2-3 tootles and provide praise/feedback										
Daily tootle total										

For researcher's use only

Number of items completed: __/10

Appendix AC – Treatment Integrity Daily Checklist: Tootle Intervention Phase (Researcher)

completed daily

Date										
Prior to tootling	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x
Tootle tickets on each table group										
Tootle box accessible										
Progress chart visible and accessible										
Updated progress chart – star given if met										
Secret Tootle goal selected										
Secret tootle target revealed at end of day										
Tootles counted										
Reward given if stars target met										
2-3 tootles read: praise/ feedback given										

For researcher's use only

Number of items completed: __/10 Treatment Integrity %: _____

Appendix AD – Treatment Integrity Daily Checklist: Tootle + Respect Focus Intervention Phase (Teacher)

Completed daily

Date										
Prior to tootling	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X
8+ Tootle cards on each table										
Tootle box accessible										
Progress chart visible and accessible										
Draw secret daily Tootle goal										
Tootle procedure reviewed (if needed)										
During Lesson										
Use Respect-specific praise E.g. Listening quietly, following instructions quickly…										
End of the day										
Reveal the secret tootle target										
Count tootles										
Update target chart (and reset if target was met)										
Provide reward if target met										
Read several Respect-specific tootles and provide praise										
Ask 2-3 volunteers to share about a tootle they did										
Daily Tootle total										

For researcher's use only

Number of items completed: __/12

Appendix AE - Treatment Integrity Daily Checklist: Tootle + Respect Focus Intervention Phase (Researcher)

completed daily

Date										
Prior to tootling	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x
Tootle tickets accessible on each table group										
Tootle box accessible										
Progress chart visible and accessible										
Progress chart/Stars updated										
Secret Tootle goal selected										
Respect praise given										
Secret tootle target revealed at end of day										
Tootles counted										
Reward given if star target met										
2-3 respect-focused tootles shared.										

For researcher's use only

Number of items completed: __/10 Treatment Integrity %: _____

Appendix AF - Treatment Integrity Daily Checklist: Tootle + Resilience focus Intervention Phase (Teacher)

Completed daily

Date										
Prior to tootling	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X
<8 Tootle cards on each table										
Tootle box accessible										
Progress chart visible and accessible										
Draw secret daily Tootle goal										
Tootle procedure reviewed (if needed)										
During Lesson										
Use Resilience-specific praise E.g. not giving up, trying hard things…										
End of day										
Reveal secret tootle target										
Count tootles										
Update target chart (and reset if target was met)										
Provide reward if target met										
Read 3-4 resilience-specific tootles: provide praise										
Ask 2-3 volunteers to share about a tootle they did										
Daily tootle total										

For researcher's use only

Number of items completed: __/12 Treatment Integrity %: ____

Appendix AG - Treatment Integrity Daily Checklist: Tootle + Resilience focus Intervention Phase (Researcher)

completed daily

Date										
Prior to tootling	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x
Tootle tickets accessible on each table group										
Tootle box accessible										
Progress chart visible and accessible										
Progress chart/Stars updated										
Secret Tootle goal selected										
Resilience praise given										
Secret tootle target revealed at end of day										
Tootles counted										
Reward given if star target met										
2-3 resilience-focused tootles shared.										

For researcher's use only

Number of items completed: __/10 Treatment Integrity %: _____

Appendix AH – Treatment Integrity Daily Checklist: Tootle + Responsibility focus Intervention Phase (Teacher)

Completed daily

Date										
Prior to tootling	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X	✓ X
<8 Tootle cards on each table										
Tootle box accessible										
Progress chart visible and accessible										
Draw secret daily Tootle goal										
Tootle procedure reviewed (if needed)										
During Lesson										
Use responsibility-specific praise E.g. staying on task, having equipment										
End of day										
Reveal secret tootle target										
Count tootles										
Update target chart (and reset if target was met)										
Provide reward if target met										
Read 3-4 responsibility-specific tootles and provide praise										
Ask 2-3 volunteers to share about a tootle they did										
Daily Tootle total										

For researcher's use only

Number of items completed: __/12 Treatment Integrity %: _____

Appendix AI – Treatment Integrity Daily Checklist: Tootle + Responsibility focus Intervention Phase (researcher)

completed daily

Date										
Prior to tootling	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x
Tootle tickets accessible on each table group										
Tootle box accessible										
Progress chart visible and accessible										
Progress chart/Stars updated										
Secret Tootle goal selected										
Responsibility praise given										
Secret tootle target revealed at end of day										
Tootles counted										
Reward given if star target met										
2-3 responsibility focused tootles shared.										

For researcher's use only

Number of items completed: __/10 Treatment Integrity %: _____

Appendix AJ – Treatment Integrity Daily Checklist: Withdrawal Phase (Teacher/Researcher)

completed daily

Date										
	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x
Tootle tickets removed from tables										
Tootle box removed										
Progress chart removed										
Date										
	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x
Tootle cards removed from tables										
Tootle box removed										
Target chart removed										
Date										
	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x
Tootle cards removed from tables										
Tootle box removed										
Target chart removed										

For researcher's use only

Number of items completed: __/11 Treatment Integrity %: _____

Appendix AK – Modified Children's Intervention Rating Profile (CIRP) - (Classroom B)

I'd love to know what you thought about tootling! Please circle the smiley face which shows how much you agree or disagree with each sentence below.

		I do not agree					I agree
1	Tootling is fair						
2	Tootling was too hard on me						
3	Tootling caused problems with my friends						
4	There are better ways to handle problem behaviour than tootling						
5	Tootling would help other children too						
6	I liked tootling						
7	I think tootling would help me do better in school						

Turco, T. L., & Elliott, S. N. (1986). Students' acceptability ratings of interventions for classroom misbehaviors: A study of well-behaving and misbehaving youth. *Journal of Psychoeducational Assessment, 4*(4), 281-289. doi:10.1177/073428298600400404

Appendix AL – IOA Confidentiality Form

Research project: Effectiveness of a tootling intervention on target students and teacher behaviours within New Zealand classrooms.

I _____ understand that this research is part of the Master's thesis of Jess Symes. All information in relation to participants and non-participants in the school will remain confidential at all times during and after data collection. I will not discuss any details of this research or the participants with anyone other than the researchers.

Signed _____

Name _____

Date _____