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When Context and Education System are at Risk: Teachers' Relationship Perceptions and Well-Being During a South African Banking Time Intervention

Kathrina Joanna Walther[1&2*]

AFFILIATIONS

[1]Institute for Educational Support for Behaviour, Social-Emotional, and Psychomotor Development, University of Teacher Education in Special Needs, HfH Zurich, Switzerland.
[2]Department of Pedagogy for Emotional and Behavioural Disorders, Julius-Maximilians University, Wuerzburg, Germany.

CORRESPONDENCE

Email: Kathrina.walther@hfh.ch*

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Abstract: Teachers play a central role in children's lives. Among the various factors influencing student outcomes, teacher-student relationships (TSR) are particularly important for development. Research indicates that TSR, characterised by high closeness and low conflict, best supports students. Grounded in attachment theory, this study conceptualises TSR as a dynamic process shaped by the mutual influence of both partners, with quality emerging from perceptions of accumulated shared experiences and information exchanges. Although extensive research on TSR exists, most findings come from Western contexts. The present study examines the potential effects of a relationship-based approach, namely Banking Time, in South Africa. This intervention's origins lie in a dynamic understanding of relationships and targets TSR at a dyadic level. Using a single case study design involving seven teachers and students (N = 7), a needs assessment was conducted and secondly, outcomes from teachers' perspectives were measured through Direct Behaviour Ratings (DBR) and self-report scales in an A–B design Data were analysed using Non-Overlap Indices and level effect calculations. Findings reveal changes in teachers' perceived closeness to students, perceptions of student behaviours and emotional states, and self-rated well-being. Notably, greater and more significant changes occurred in dyads where teachers initially rated student behaviour as more externalising. The discussion underscores the importance of relational histories, students' relational and socio-cultural backgrounds, and the value of qualitative approaches to deepen the understanding of teachers' implicit beliefs.

Keywords: Poor performing systems, teacher-student relationship, banking time, mental representations, child at risk.

1. Introduction

Teachers play a central role in the educational process, particularly in shaping student relationships and behaviours. Hattie's (2023) meta-analysis shows that positive teacher–student relationships are among the strongest influences on student success, fostering both academic growth and social behaviour. Cornelius-White (2007) similarly finds that learner-centred relationships positively affect student behaviour. Liu, Mearns, and Admiraal (2023) further demonstrate that teachers' professional identity is closely linked to interaction quality, which in turn affects behaviour and the learning environment. This underscores the need for reflection and adaptability when building relationships. Systemic risk factors for successful teacher–student relationships operate at various levels. At the institutional level, inadequate resources limit teachers' capacity for relationship-building (Jennings & Greenberg, 2009). Organisational structures that restrict individualised support, together with insufficient training in relationship-building, increase the risk of superficial relationships (Pianta et al., 2003). External factors such as social pressure, cultural differences, and adverse family backgrounds also impair relationship quality (Roorda et al., 2011). Although research on teacher–

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student relationships has grown over the past three decades, it mainly reflects Global North contexts. However, it remains unclear what role teacher-student relationships play in schools when the context and education system are at risk (Spilt & Koomen, 2022). The end of apartheid in 1994 marked the shift from racially segregated education to a unitary, non-racial system in South Africa (Lomofsky & Lazarus, 2001). The new Constitution granted equal treatment and the right to basic education (Department of Education, 2001). Commissions identified key barriers to inclusive learning in socio-economic conditions, curricula, and teacher education (Lomofsky & Lazarus, 2001).

Three decades later, school realities are described as "uniquely ineffective" (Schirmer & Visser, 2023a, p. 2). Many teachers lack sufficient subject knowledge (Taylor, 2017). Pre-service training fails to produce highly qualified teachers; nearly 90% in rural schools lack adequate knowledge for teaching languages (Bowie et al., 2019). Even when teachers identify struggling learners, many lack effective pedagogical strategies (Taylor, 2017). South Africa scores lowest in PIRLS 2021, with only 19% of children reaching minimum reading proficiency (Mullis et al., 2023). Low socio-economic status, especially in rural areas, strongly predicts poor outcomes, with about two-thirds of learners affected (Mullis et al., 2023). Poverty, inequality, hunger, crime, abuse, and low parental education levels correlate with weak achievement (Schirmer & Visser, 2023a).

When interpreting the factors that influence children's development in South Africa, these are classified as hindering in theoretical models. In line with the transactional model of development, risk and protective factors jointly shape child development (Boeger & Lüdmann, 2023). A lack of protective factors increases children's vulnerability and may lead to an increased need for social and emotional support. Given school demands, it is therefore likely that children find it difficult to adhere to rules, act impulsively, argue, and exhibit rule-breaking behaviour (Ricking & Wittrock, 2020). Managing such behaviour is a major stressor for teachers (Aloe et al., 2014) and is linked to anger, anxiety, emotional exhaustion, and more negative student perceptions (Aldrup et al., 2018; McGrath & Van Bergen, 2017). This threatens positive interactions; however, evidence shows that reliable, trustworthy relationships are especially crucial for students with challenging behaviours (Spilt & Koomen, 2022). Stable, reliable, trust-based teacher relationships can buffer hindering factors and act as protective factors for resilience and learning success (Boeger & Lüdmann, 2023; Hattie, 2023; Rönnau-Böse & Fröhlich-Gildhoff, 2023). In the context of South Africa, it can be assumed that students and teachers are affected by these contextual factors, and their interactions are potentially strained. The importance of stable teacher-student relationships is likely to be particularly pronounced for these students and learners.

Banking Time is an attachment-based dyadic intervention designed to strengthen the teacher-student relationship (Williford & Pianta, 2020). Current evidence for Banking Time is positive but limited to the United States and Switzerland (Neuhauser & Mohr, 2023; Partee et al., 2022). Our previous work developed a concept for implementing such practices in South Africa (Walther, 2024). The present study follows this concept to explore the potential of teacher-student relationships and Banking Time in South African contexts to contribute towards future teacher training.

1.1 Literature review

Based on attachment theory, Pianta (1999) proposes a model of teacher-student relationships (TSR) with four dynamically interacting components: (1) individual characteristics of the child and teacher, including developmental history and biological factors; (2) perceptions and beliefs about self, others, and the relationship; (3) information exchange through interactive behaviours; and (4) external influences such as the school environment, neighbourhood, and educational policies. Attachment theory (Bowlby, 1982) has been central to understanding TSR (Spilt & Koomen, 2022). While conceptual models like Pianta's identify key components, attachment theory adds specific relational dimensions. (Anonymised for review) explained this underlying theoretical framework on TSR in more depth. TSR can be analysed in terms of closeness, conflict, and dependency, highlighting the

importance of both partners' relational histories, teachers' sensitivity, and mental representations. TSR is emphasised to fulfil a secure base and safe haven function for students, focusing on both teachers' and students' interactive behaviours and feelings. To examine current TSR and identify potential changes within TSR in South Africa, the following section outlines the key dimensions and the current state of research. This presentation is grounded primarily in studies conducted in the global north. The aim of the present study is to evaluate the extent to which these assumptions apply to the South African context.

Teacher–student relationships can be described along three dimensions: closeness, conflict, and dependency (Pianta, 2001; Spilt & Koomen, 2022). Closeness reflects warmth, open communication, and the teacher as a safe haven. Conflict indicates an unpredictable, unreliable, or hostile relationship, which prevents a sense of safety. Dependency captures excessive proximity-seeking and difficulty in gaining security from the relationship. Favourable relationships are characterised by high levels of closeness and low levels of conflict and dependency (Verschueren & Koomen, 2012). Instruments such as the STRS and SPARTS assess both teacher and student perspectives, showing that such relationships improve emotional well-being, social behaviour, engagement, and academic outcomes (Pianta et al., 2003; Roorda et al., 2011; Spilt & Koomen, 2022).

According to a dynamic view of attachment theory, teachers and students form mental representations—a set of expectations, perceptions, and beliefs about themselves, each other, and their relationship (Spilt et al., 2022). These mental representations, influenced by individuals and information exchange processes, are activated in daily interactions and guide how each interprets and responds to the other (Spilt et al., 2022). In close, trusting relationships, students may internalise positive feelings, perceiving themselves as worthy of care, while teachers feel effective and attribute positive qualities to the child (Spilt & Koomen, 2009; Stuhlman & Pianta, 2002). In conflictual relationships, both parties may interpret each other's behaviour as disruptive, insensitive, or unsupportive. These negative representations bias social information processing, lead to reasoning errors, and foster beliefs that misbehaviour is intentional. Such internalised negativity increases teachers' perceptual biases, strengthens negative thoughts about the student, and reinforces a harmful cycle in the relationship (Spilt et al., 2022).

Research indicates that teacher-student relationships (TSR) are positively associated with teacher well-being, defined as high work enthusiasm and low emotional exhaustion (Aldrup et al., 2018). Pleasant emotions enhance well-being, while ongoing unpleasant emotions undermine it (Lazarus, 2006). Building positive TSR is viewed as an important occupational goal that elicits strong emotions (Spilt et al., 2011). Aldrup et al. (2018) found positive associations between TSR and well-being, as well as links between emotional exhaustion, enthusiasm, and student behaviour. Consistent with prior research, dealing with behaviour problems in class has been identified as a major stressor for teachers, impacting their occupational well-being (Aldrup et al., 2018; Aloe et al., 2014). TSR are particularly at risk when teachers perceive student behaviour as externalising (de Ruiter et al., 2020). Teachers adopt a more negative tone, express greater anger, and report increased feelings of helplessness towards students they perceive as disruptive (Bosman et al., 2019; McGrath & Van Bergen, 2017; Spilt & Koomen, 2009).

Beyond general TSR dimensions, relational histories and prior relationships shape how teachers and students enter new TSRs. Attachment theory explains how individuals' attachment histories influence TSR qualities (Pianta, 1999; Spilt & Koomen, 2022). Students' primary attachment to caregivers affects their trust in adults (Horppu & Ikonen-Varila, 2004). Insecurely attached students may view adults as unreliable, misinterpret teachers' behaviour, and develop relationships marked by conflict, low trust, and detachment (Jellesma et al., 2015; Verschueren, 2015). Teachers' attachment histories matter as well: dismissive-avoidant teachers may seek emotional distance and overlook students' signals (Horppu & Ikonen-Varila, 2004; Riley, 2009). Teacher sensitivity can interrupt

negative patterns (Verschueren, 2015). Emotional support reduces teacher–child conflict, particularly for students at risk of school maladjustment (Hamre & Pianta, 2005). Sensitive teachers also lower aggressive behaviour in preschoolers and enhance students' academic and social-emotional outcomes (Buyse et al., 2011; Spilt et al., 2017).

Having outlined these key dimensions, apparent indicators can be recognised that should be considered when evaluating the effectiveness of relationship-based interventions in a context that has remained largely underexplored in this field of study. Specifically, these variables include the degree of closeness, conflict, and dependency within TSR, as well as teachers' perceptions of students' behaviour and their affective states. A further indicator of changes concerns teachers' well-being. Moreover, it is acknowledged that TSRs are shaped by teachers' and students' relationship histories and that teachers' sensitivity plays a critical role in interactions.

1.2 Research question

Despite three decades of research on TSR, important gaps remain. Existing findings are largely based on Global North contexts, while school realities in countries like South Africa are still underexplored (Spilt & Koomen, 2022). This is critical given the performance of its education system, widespread poverty, its influence on child development, and challenges within South African classrooms. In such contexts, stable TSR may function as a key protective factor for students and teachers (Roorda & Koomen, 2021). Yet, empirical evidence on how to foster such relationships is lacking. Educational interventions, such as Banking Time, targeting one-on-one TSR have shown positive effects in the United States and Switzerland (Driscoll & Pianta, 2010; Neuhauser & Mohr, 2023). However, there is no comparable evidence from countries such as South Africa, even though the need for stable TSR is high. Given that TSR is especially at risk when teachers perceive students' behaviour as externalising, special attention must be paid to how teachers' perceptions and mental representations interact with relationship gains (de Ruiter et al., 2020). Understanding these changes will contribute to insights for teachers, students, and evidence on the intervention itself and allow for implications for further research. The present study aims to analyse and understand the potential of Banking Time and respond to the following questions:

- Does Banking Time have an effect on teachers' perception of their relationships with individual students and teachers' well-being?
- Are there differences in the perception of changes in the teacher-student relationship while implementing Banking Time, depending on whether the teachers rated students' behaviours as more internalising or more externalising?

2. Methodology

In the following, the study design, the intervention itself, the needs assessment and final sample of this study are presented. Furthermore, data analysis is being described.

2.1 Design

For the present single case study, one South African school participated. Firstly, teachers received training in the Banking Time intervention. Based on that knowledge, participating teachers (N=7) were asked to select 10-15 children in their classes whom they believed would benefit from a relationship-based intervention. Teachers were instructed to select students with whom they met regularly during classes. This selected group of students (N=58) was the focus of the study. Next, a needs assessment was conducted within this focus group and validated with the teachers. The needs assessment incorporated both student and teacher perspectives and resulted in the final sample of students for the intervention group (N=7). The needs assessment described the current teacher–student relationship in terms of perceptions of behaviour, emotional states, closeness, and teachers' emotional exhaustion. Based on this, items for Direct Behaviour Ratings (DBR) and self-report items along the four dimensions were generated. Items were administered using an A-B design (Jain &

Spieß, 2012). Each dyad was randomly assigned a starting point for the intervention. During the baseline (Phase A), items were assessed over a period of at least 16 measurement points. No other intervention was implemented in Phase A. The generated data provide the base rate for description, prediction, and comparison for every single case, both for and during the intervention phase (Phase B). In Phase B, Banking Time sessions were initiated while the assessment of items continued. This study design allows us to (1) obtain direct information on teachers' perceptions and (2) utilise Phase A as an individual reference norm for analysis (Jain & Spieß, 2012).

2.2 Banking time

Banking Time is an attachment-based approach focusing on the relationship between teachers and students on a dyadic level (Williford & Pianta, 2020). It involves a series of one-on-one, non-directive, and child-led sessions. In these sessions, the teacher's role is to observe and narrate the child's feelings and emotions, thereby conveying relational messages of care and acceptance while minimising teacher-directed practices. The lead in these interactions rests with the child, and information exchange is confined to relational communication. Banking Time sessions create a space where existing perceptions and beliefs can be altered, and new interaction patterns are allowed to emerge. Such changes can contribute to shifts in the mental representations of both students and teachers, fostering a supportive and favourable relationship. Several studies observe an increase in teachers reporting closeness with the students, higher student frustration tolerance, greater task orientation, and decreases in conduct problems (Driscoll & Pianta, 2010; Driscoll et al., 2011; Hatfield & Williford, 2017). For students at the preschool stage, significantly greater declines in cortisol levels were found compared to students who did not perceive Banking Time sessions with their teachers (Hatfield & Williford, 2017).

2.3 Needs assessment

To assess students' and teachers' mental representations of the current teacher-student relationship, three different instruments were used. Teachers completed the Student–Teacher Relationship Scale (STRS; Pianta, 2001), which measures perceived closeness and conflict across 15 items (e.g., "This child openly shares his/her feelings and experiences with me" and "This child and I always seem to be struggling with each other") on a 5-point scale. Students completed an English version of selected scales from the Student Perception of Affective Relationship with Teacher Scale (SPARTS; Koomen & Jellesma, 2015), which includes 8 items on closeness, 10 on conflict, and 7 on negative expectations (e.g., "I tell my teacher things that are important to me," "I easily have quarrels with my teacher," and "When I'm with my teacher, I feel nervous"), rated on a 5-point Likert scale (0–4). Additionally, teachers completed the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997), which assesses 25 items across five subscales that are summarised into internalising and externalising problems, categorised using the newer 4-band system (Goodman et al., 2010).

2.4 Sample

The Primary School is located in the northern province of Limpopo. The school's mission is to provide education in disadvantaged areas, specifically targeting vulnerable children (Mission, 2024). The final sample included seven teachers and seven children. Of the participating teachers, five are female (T1, T2, T3, T4, T7). The average age of the teachers is 34.3 years, with a range from 25 to 48 years. Five teachers (71%) hold at least one teaching certificate (Bachelor of Education), of which two (29%) possess an additional certificate (Diploma in Teaching). Two (29%) of the participating teachers have no educational qualifications or hold a non-educational certificate. Teachers' experience in teaching varies from one to 23 years, with an average of nine years. Five (71%) of the participating students are female and are in Grades 2 to 7. Two (29%) of the students are in the foundation phase (S1/S2), while five (71%) are in the intermediate and senior phases. Further features of our sample, derived from the needs assessment, are presented in Table 1.

Table 1: *Results need assessment*

	SDQ-Results Teacher (T) – Student (S)								STRS (teacher perspective) SPARTS (student perspective)			
Total Difficulties		ES	CS	HS	PPS	PS	TT Ext.	TT Int.		Conflict	Closeness	Dependency
T1	**19****	2	4**	6*	**7****	5*	10**	9**	STRS	16	17	-
S1	/	/	/	/	/	/	/	/	My teacher likes other children more than me (Agree)			
									My teacher cares about me (Disagree)			
									My teacher is interested in me (Agree)			
T2	18**	2	**5****	6*	5**	**2****	11**	7*	STRS	19	22	-
S2	/	/	/	/	/	/	/	/	My teacher likes other children more than me (Agree)			
									My teacher cares about me (Agree)			
									My teacher is interested in me (Agree)			
T3	9	3	0	2	4**	4**	2	7*	STRS	2	17	-
S3	**22****	**10****	**6****	2	4*	9	8	**14****	SPARTS	15	9	21
T4	18**	**6****	1	5	**6****	**2****	6	**12****	STRS	10	10	-
S4	16*	5*	2	2	**7****	10	4	**12****	SPARTS	27	18	20
T5	**23****	3	**6****	**9****	5**	5*	**15****	8**	STRS	21	22	-
S5	**20****	4	5**	6*	**5****	6*	11**	9**	SPARTS	20	18	14
T6	11	2	3*	1	5**	6	4	7*	STRS	11	21	-
S6	**23****	**7****	**6****	2	**8****	5**	8	**15****	SPARTS	13	21	22
T7	15*	4*	**6****	5	0	7	11**	4	STRS	25	24	-
S7	18**	**8****	4*	5	1	7	9*	9**	SPARTS	7	22	12

Note. TT=total; T = teacher, S = student; ES = Emotional difficulties scale; CS = Conduct difficulties scale; HS=Hyperactivity scale; PPS = Peer difficulties scale; PS = Prosocial scale; SDQ-Cut-off: * slightly raised/lowered, **high/low; **bold**** = very high/low; STRS Conflict scale 0-28 (The higher the more conflict), Closeness scale 0-32 (The higher the closer); SPARTS: Conflict scale 0-40 (The higher the more conflict), Closeness scale 0-32 (The higher the closer); negative expectations 0-28 (The higher, the greater lack of confidence in the relationship)

2.5 Daily behaviour ratings and self-report

In the next step, items derived from the results of the needs assessment to measure changes in the mental representations, using DBR and self-report measures were selected. DBR holds the ability to assess changes and treatment effects within the context of single-case studies. Changes are determined by comparing the extent of an item during the baseline phase (Phase A) with ratings collected during the intervention phase (Phase B) (Matta et al., 2020). The selection of items was derived from instruments and results of the needs assessment (STRS, SDQ) and an item pool provided by Hartke, Blumenthal, and Vrbans (2019). In total, nine items (1-9) along the four dimensions of mental representations of TSR were selected: perception of student behaviour, emotional state, perceived closeness, and self-reported well-being. Table 2 presents scales and corresponding items.

Table 2: *Daily behaviour rating and self-report items*

Scale	Items			
DBR Student Behaviour	Child shows initiative, encourages games and conversations (Item 1).	Today the child responded reasonably towards disappointment (having to repeat an activity, not being chosen to answer). (Item 2)	Child responded reasonably towards my instructions and discipline (Item 3)	Child interacted peacefully with the other children today (communicates, plays, verbalises, and what he wants) (Item 4)
DBR Emotional state	Child shows confidence in new tasks and his own classwork today (Item 5	I experienced the child being cheerful and happy at school today (Item 6)		
DBR Closeness	The child spontaneously shared information about himself today (Item 7)	The child spontaneously shared his/her feelings about a positive or negative event/experience with me today (Item 8)		
Self-report Scale Well-being	Dealing with this child drains my energy (Item 9)			

After obtaining consent, the research team established a baseline for Phase A. Teachers rated the items on an 11-point scale from 0 (never) to 100 (always), capturing their perceptions and experiences. Emotional exhaustion was rated on a percentage scale from 0% (dealing with the child drained none of my energy) to 100% (dealing with the child drained all of my energy). Ratings were completed at the end of each school day, with a minimum of sixteen measurement points in Phase A. Following this, the intervention phase (Phase B) began, during which Banking Time was implemented, and teachers and students met twice per week. Daily ratings continued as in Phase A. The research team monitored and supported both the rating procedures and the implementation of Banking Time throughout all phases.

2.6 Data analysis

Data analysis was conducted using the Scan package for R (Wilbert & Lücke, 2024). Individual case-level effects and aggregated effects across all seven cases were examined. First, A- and B-phases were analysed separately for each case. To evaluate phase differences, the calculation of the Non-Overlap of All Pairs (NAP) (Parker & Vannest, 2009) was done. NAP represents the percentage of data pairs where B-phase values exceed A-phase values. As NAP is based on observed data only, missing values are excluded from pairwise comparisons. NAP is presented in the rescaled NAP from the Scan package, which standardises effect sizes between 0 and 1 (Wilbert, 2024). This parameter was selected for its robustness to outliers and straightforward interpretability in single-case research. Values above 0.32 indicate a moderate effect, and values above 0.85 indicate a strong effect. To examine overall effects across all cases, I additionally performed a piecewise linear regression, estimating

changes in trend ("slope effect") and level ("level effect") between phases. The key parameters analysed included:

- Intercept: The initial level of the A-phase.
- Trend (slope) of the A-phase: Describes the development of the behaviour prior to the intervention.
- Level effect: The shift in the dependent variable between the last measurement of the A-phase and the first measurement of the B-phase, reflecting the immediate impact of the intervention.
- Slope effect: The difference in the slopes of the regression lines between the A- and B-phases, representing long-term changes over time.

Since the intervention aims to induce immediate changes in behaviour, special emphasis was placed on level effects. Trend effects were considered secondary, as the intervention did not target structural or long-term behavioural changes in the sense of a continuous training process, but rather direct effects in the teacher-student relationship. In summary, the combination of NAP calculations at the single-case level and piecewise linear regression at the aggregated level enabled a nuanced analysis of the changes and an assessment of the effect size of the intervention 3.

3. Results

To address the research questions, data were analysed, and the results of the two main analyses are presented. Firstly, results report effect sizes at the single-case level for each of the scales. These results provide evidence as to whether, and in what specific ways, Banking Time produced changes. With the scales—Student Behaviour (Figure 1), Emotional State (Figure 2), and Closeness (Figure 3)—increased perception from the teachers' perspective was expected. Since well-being was measured by a perceived degree of exhaustion, a decrease for each case was expected.

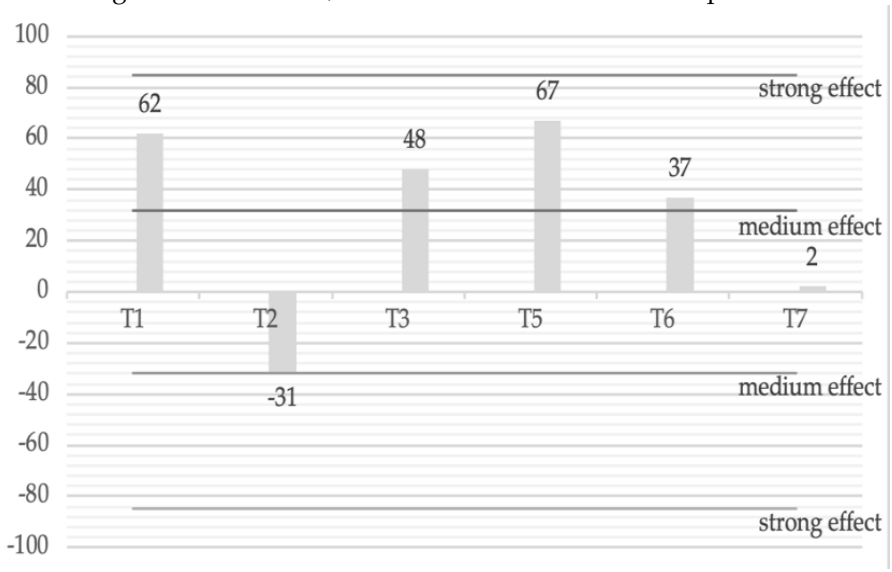

Figure 1: *NAP for the Scale "Perception of Student Behaviour"*

Figure 1 provides effect sizes for all seven cases on the scale of perceived student behaviour from the teachers' perspective. Findings indicate medium effects for cases T1, T3, T5, and T6. The intervention showed hardly any changes for T7 and negative effects for T2. This indicates that teachers' perceptions of T1, T3, T5, and T6 changed, leading them to view student behaviour as more initiative, reasonable, and peaceful. This effect was the most significant for T5 (NAP = 67) and the lowest for T7. Although T7 reports some change, it remains very small (NAP = 2). In contrast, the results for

Teacher 2 reveal a decrease in the perception of such behaviours. T2 perceived fewer of these behaviours in Phase B than in Phase A (NAP = -31).

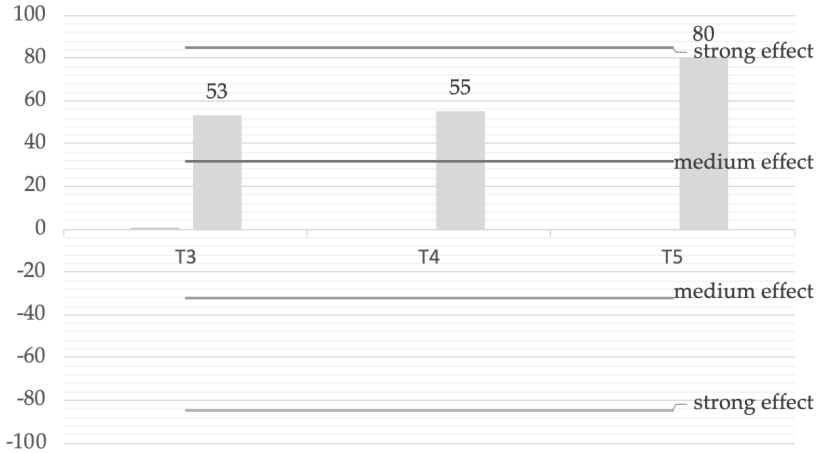

Figure 2: *NAP for the Scale "Emotional State"*

Three teachers rated their perceptions of students' emotional states (see Figure 2). Regarding items 5 and 6, teachers reported their perceptions of students' emotional states. The results reveal medium effects in all three cases, indicating that teachers rated their students as more confident and happier at school. This effect is greatest in T5's perception (N=80), with similar results for T3 (NAP = 53) and Teacher 4 (NAP = 55).

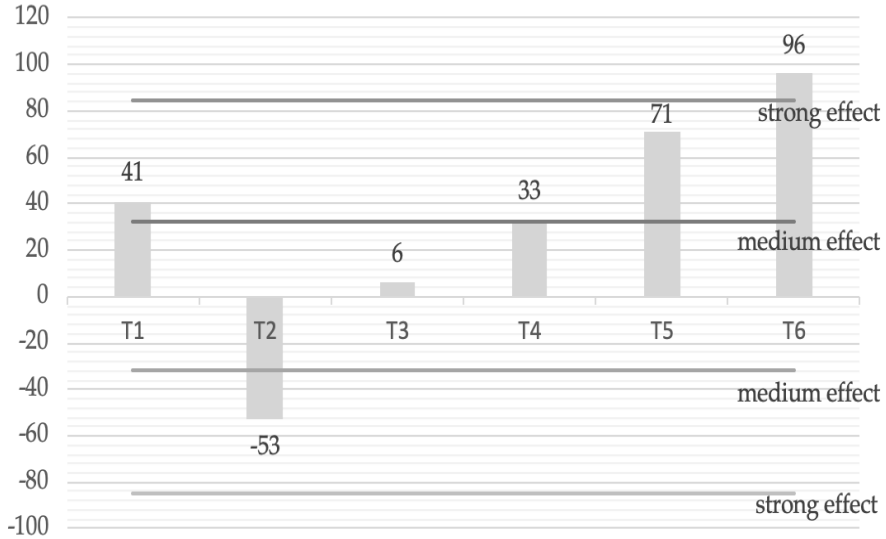

Figure 3: *NAP for the Scale "Perceived Closeness"*

Furthermore, six of the seven teachers (T1-6) were asked to rate their perceived closeness in daily interactions with targeted students (Figure 3). Findings indicate that changes within this scale are of medium effect size for cases T1 and T5. T4 borders on a medium effect size, while T6 exceeds it (NAP = 96). Five teachers perceive higher levels of behaviours from students that indicate closeness, such as the child spontaneously sharing information about themselves or expressing feelings about an event that day. These observations contrast with those of Teacher 2, who reports a lesser extent of such perceptions in Phase B than in Phase A (NAP = -53).

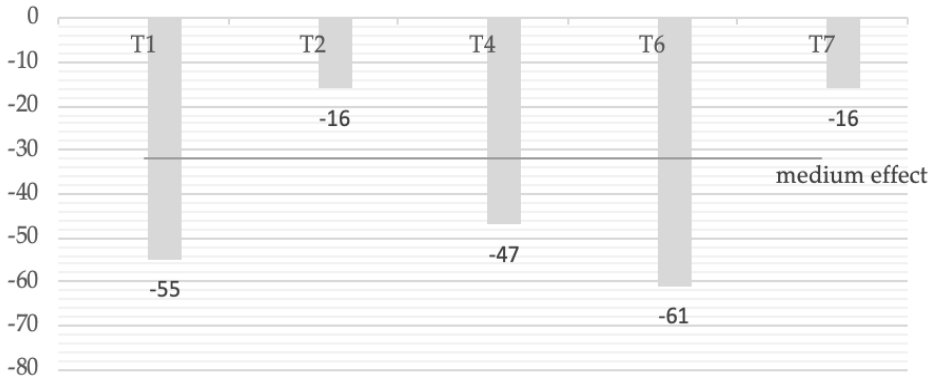

Figure 4: *NAP for the Scale "Self-Report Well-Being"*

Next to rating their perceptions of others, five teachers were asked to rate their own emotional exhaustion every day. Results (Figure 4) show a decline in all cases, with differences in the magnitude of the measured effect. While T2 and T7 report only small effect sizes (NAP = -16), T1, T4, and T6 report medium effect sizes regarding the decrease in emotional exhaustion.

Subsequently, results of the piecewise linear regression are presented (Tables 3, 4, and 5). The extent of the changes and their significance contribute to answering our first and second research questions. Piecewise linear regressions were performed across all seven cases along the four scales: teachers' perceptions of students' behaviour, teachers' perceptions of students' emotional states, teachers' perceptions of closeness, and teachers' self-reported well-being. This analysis was conducted for all cases first (Table 3) and for two subgroups afterwards (Tables 4 and 5).

Table 3: *Piecewise linear regression across all cases (N=7)*

Scale	Parameters	B	SE	df	t
Perceived Student Behaviour	Intercept	5.750***	0.920	310	6.250
	Trend mt	0.015	0.022	310	0.158
	Level phase B	0.791*	0.354	310	2.237
	Slope phase B	-0.015	0.024	310	-0.634
Perceived Emotional State	Intercept	6.823**	0.314	168	21.748
	Trend mt	0.003	0.021	168	0.158
	Level phase B	1.600 **	0.365	168	4.385
	Slope phase B	-0.006	0.023	168	-0.266
Perceived Closeness	Intercept	2.992**	1.143	334	2.617
	Trend mt	0.005	0.030	334	0.162
	Level phase B	1.105*	0.486	334	2.274
	Slope phase B	0.030	0.032	334	0.926
Self-report Well-being	Intercept	27.250 ***	6.686	259	4.075
	Trend mt	-0.058	0.236	259	-0.245
	Level phase B	-9.464 **	3.477	259	-2.722
	Slope phase B	0.037	0.253	259	0.146

Note. *** p < .001; ** p < .01; * p < .05

Table 3 presents the results of this investigation, including the significance of these changes (B). For the analysis, level effects labelled as Level Phase B were specifically in focus. Significant level effects across all scales, with varying magnitudes of change are found. The most substantial changes occur across all seven cases on the scale of self-reported well-being (B = -9.464, p < .01). However, findings

related to perceived behaviour, emotional states, and closeness, while smaller in magnitude, remain significant.

In line with the SDQ results from the needs assessment, the sample was categorised into two subgroups. Single cases, in which internalising problems were prominent, are described as internalising (N=3). Cases in which externalising behaviours were more prominent, including elements of internalising problems and exceeding the average, are summarised in the category of externalising and internalising (N=4).

Table 4: *Piecewise linear regression across all cases within the subcategory "Internalising"*

		Internalizing			
Scale	Parameters	B	SE	df	t
Perceived Student Behaviour	Intercept	5.704***	0.705	107	8.094
	Trend mt	0.085**	0.028	107	3.036
	Level phase B	0.505	0.521	107	0.969
	Slope phase B	-0.096**	0.031	107	-3.102
PerceivedCloseness	Intercept	2.520	1.892	167	1.332
	Trend mt	0.002	0.039	167	0.046
	Level phase B	0.444	0.675	167	0.657
	Slope phase B	0.048	0.042	167	1.135
Self-report Well-being	Intercept	16.619***	3.532	57	4.705
	Trend mt	1.077**	0.298	57	3.613
	Level phase B	-23.42***	4.498	57	-5.207
	Slope phase B	-1.076**	0.316	57	-3.400

Note. *** p < .001; ** p < .01; * p < .05

Table 4 summarises findings for those cases, which are categorised as internalising. Results are available for the three scales of perceived student behaviour, perceived closeness, and well-being. Level effects were only significant for teachers' self-reports on well-being (B = -23.42, p > .001). Results show no significant level effects for teachers' perception of students' behaviour (B = 0.505, p > .05) nor their perception of closeness (B = 0.444, p > .05).

Table 5: *Piecewise linear regression across all cases within the subcategory "Externalising and Internalising"*

		Externalizing and Internalizing			
Scale	Parameters	B	SE	df	t
Perceived Student Behaviour	Intercept	6.108***	1.300	200	4.698
	Trend mt	-0.062*	0.032	200	-1.973
	Level phase B	1.255**	0.462	200	2.714
	Slope phase B	0.069**	0.034	200	2.037
Perceived Closeness	Intercept	3.272**	1.129	164	2.898
	Trend mt	0.027	0.047	164	0.567
	Level phase B	1.647*	0.706	164	2.334
	Slope phase B	-0.009	0.050	164	-0.189
Self-report Well-being	Intercept	30.265***	8.246	199	3.670
	Trend mt	-0.406	0.291	199	-1.394
	Level phase B	-5.380	4.255	199	-1.264
	Slope phase B	0.380	0.313	199	1.214

Note. *** p < .001; ** p < .01; * p < .05

Looking at the results of the regression analysis conducted for cases where externalising problem scores predominated, significant level effects on both perceived student behaviour (B = 1.255, p <

.01) and perceived closeness (B = 1.647, p < .05) are found (Table 5). Teachers in this subgroup significantly perceived students as more initiative, reasonable, and peaceful in Phase B. Furthermore, they reported a greater sense of closeness in their interactions with the target student. No significant changes were reported regarding well-being in this subgroup.

4. Discussion

The aim of the study was to analyse whether there were changes in teachers' perceptions of closeness, students' behaviour, emotional state, and self-rated well-being, as well as to further analyse if teachers' previous perceptions of students' behaviours moderated these changes. Inferential statistical analyses indicate that teachers' perceptions changed on various levels during the implementation of Banking Time.

4.1 Response to the first research question

First of all, a significant increase in teachers' perceived closeness to individual students (B= 1.105,p = .024) was observed. Higher levels of closeness in teacher-student relationships (TSR) suggest that students experience the teacher as a secure base and safe haven. This is characterised by warmth, positive affect, and open communication within the dyadic relationship. In such relationships, teachers are highly attuned to students' individual needs (Spilt & Koomen, 2022). Our findings are consistent with previous research on teachers' perceptions of closeness in dyadic TSR when conducting Banking Time (Driscoll et al., 2011).

Secondly, it was expected that teachers might be more focused on negative aspects of students' behaviour rather than adopting a more open mindset towards the child. It was anticipated that Banking Time and Daily Behaviour Reports (DBR) could provide insights into a change in teachers' perceptions (Pianta, 1999). Indeed, teachers in the present sample indicated an increased perception of more favourable student behaviours (B = 0.791, p = .026). Results state that teachers perceive students' behaviour as more peaceful and reasonable in specific situations over time. This marks an important change in mental representations. Results and interpretation indicate that Banking Time sessions have the capacity to influence teachers' mental representations and beliefs about students towards a more favourable perspective. Moreover, teachers also report perceiving more positive emotional states in students (B = 1.6, p = .0). These results reveal significant level effects and, therefore, a shift towards a TSR where teachers rate students' emotional states more positively. This, in turn, reduces the risk of teachers believing that students are misbehaving intentionally to provoke them and reinforces negative representations of the relationship with the teacher (Spilt & Koomen, 2022; Spilt et al., 2011). Various studies report similar results, whereby teachers report a reduced perception of conduct problems and aggressive and oppositional behaviours, alongside increased levels of closeness towards students (Driscoll & Pianta, 2010; Neuhauser & Mohr, 2023).

Lastly, the present results indicate a change in teachers' self-reported well-being, measured by a significant reduction in emotional exhaustion (B = -9.46, p = .007). Building a meaningful relationship was expected to be an occupational goal for teachers. Not meeting this goal was anticipated to cause stress, as measured by emotional exhaustion. It was believed that implementing Banking Time could reduce teachers' self-reported exhaustion and consequently increase their well-being. Overall, our results indicate a decrease in self-rated emotional exhaustion when implementing Banking Time. These findings align with those of Bosman et al. (2021), where teachers participated in an intervention focusing solely on teachers' mental representations (Teacher-Student Interaction Coaching) and reported higher levels of self-efficacy. In regard to the first research question, it can be concluded that there have been changes in teachers' mental representations along the dimensions of students' behaviour, perceptions of closeness, emotional states, and teachers' well-being.

4.2 Response to the second research question

The second research question examines differences in perceived relationship changes between two subgroups, "internalising" and "externalising," using separate piecewise linear regressions. Overall, findings indicate greater and more significant changes in teachers' perceptions of behaviours indicating closeness and students' favourable behaviours for the subgroup "externalising." In contrast, the self-reported emotional exhaustion of teachers decreased to a greater degree and was more significant within the subgroup "internalising." The degree of emotional exhaustion in the subgroup "externalizing" showed no significant effects ($B = -5.380$, $p > .05$). Since dealing with unwanted behaviours is one of the biggest stressors for teachers in their daily work, low levels of closeness and high levels of conflict in those relationships within the subgroup "externalizing" (Aloe et al., 2014) were expected. Analysing perceived closeness, findings reveal a greater and more significant change ($B = 1.647$; $p = .021$). The intervention was specifically effective for the perception of closeness in those teacher-student relationships (TSR). Additionally, teachers within this subgroup reported greater changes in their perception of students' behaviour ($B = 1.255$; $p = .007$). Lastly, and contrary to prior findings, results indicate a greater and more significant reduction of emotional exhaustion within the subgroup "internalising." There has been a greater reduction in emotional exhaustion in this subgroup ($B = -23.42$; $p = .0$).

Due to limited data, the present findings cannot compare teachers' perceptions of students' emotional states, as this variable was only observed for the subgroup "internalising." Concluding the level effects and their significance, results and discussion summarise greater changes in teachers' perceptions in dyads where students' behaviours had previously been rated as more externalising. Taking a closer look at the subgroup "externalising," cumulative problem scores on the scale of externalising behaviours revealed high or very high problem scores from the teachers' perspective across all cases. When teachers and students were asked to rate their perceived closeness in that specific TSR, the average score for teachers was 21.25, which was more than ten points behind the highest closeness score on this scale (Pianta, 2001). Simultaneously, scores on the conflict scale revealed the presence of conflicts (STRS, Item 8: This child easily becomes angry with me / / SPARTS, Item 23: I can be very angry with my teacher). Generally, internalising behaviours are at risk of not being recognised by teachers due to their inward-directed manifestations. Discrepancies are found in students' and teachers' perceptions of such behaviours, whereby students rate their problems as more severe (Bilz, 2014). This also applies to the present sample, where two out of three dyads (cases T3/S3 and T6/S6) showed high levels of internalising problems from the students' perspective, while teachers only rated students' internalising problems as slightly raised. Therefore, findings require a precise discussion on the influential factors for these specific findings.

5. Limitations

Nevertheless, not all of the dyadic relationships benefited from implementing Banking Time to the same extent. Several limitations arising from the findings must be acknowledged, and interpretation must be done with an awareness of these limitations.

5.1 Relational backgrounds and mental representations

Banking Time provides structured, attachment-based interactions to reshape mental representations. However, the current investigation is limited by the lack of examination of attachment histories or existing internal working models. Matinkhah et al. (2019) found that children aged 4–8 with predominantly externalising behaviours had more negative mental representations of their mothers. Without a formal assessment of attachment histories, it can only be hypothesised that some students in this sample may hold negatively biased internal working models consistent with insecure attachment styles—avoidant, ambivalent, or disorganised. Additionally, this study failed to focus on teachers' relational backgrounds. This is critical because avoidant students and teachers may resist

emotional intimacy, making emotionally attuned interactions challenging (Horppu & Ikonen-Varila, 2004; Riley, 2009). It is therefore important to acknowledge that Banking Time and possibly other relationship-focused interventions may initially be perceived as aversive or uncomfortable. According to Volmer (2019), the primary goal in Teacher-Student Relationships (TSR) is a "well-tempered" relationship—balanced between cold and overheated, with appropriate distance and closeness. Individuals with histories of distant, indifferent relationships may feel overwhelmed by compensatory warmth and thus risk an overheated TSR. Mental representations were assessed with rating scales. While these provide useful information, they may miss implicit affective states and representations. Future investigations could incorporate indirect methods (e.g., narrative interviews, the attachment-based Teacher Relationship Interview; Pianta, 1999; Spilt et al., 2022) to capture these more fully.

5.2 Program fidelity

As other research suggests, teachers were coached and supported in implementing Banking Time (Partee et al., 2022). Daily ratings allowed us to monitor the teachers' dosage of Banking Time sessions. The implementation of Banking Time strictly requires teachers to adhere to the schedule. Before implementation, the schedules were coordinated in consultation with all parties involved. Teachers were supported in conducting Banking Time sessions twice per week, with procedures approved at all times. Nonetheless, individual cases encountered challenges with their weekly schedules and only managed to perform Banking Time accordingly in less than half of Phase B. Favourable intervention outcomes rely on the strict implementation of interventions (Durlak & DuPre, 2008). Unlike Partee et al. (2022), who used double-coded teacher-submitted videotapes to assess programme fidelity, this investigation lacked such control.

5.3 Stressors for teachers and the importance of culture and context

The present study focused solely on teachers' daily experiences of student behaviour and well-being. Other stressors, such as prior behaviour management training and personal or job resources in relation to culture, were not assessed (Aloe et al., 2014). Therefore, the need to widen and specify the underlying understanding of context and its influencing role on Teacher-Student Relationships (TSR) in Pianta's model is emphasised (Pianta, 1999). Recently, cultural issues were examined in a sample of Chinese and Dutch students, where some felt more comfortable in close relationships with their teachers than others. Subtle differences requiring more in-depth investigation are needed (Spilt & Koomen, 2022). In addition to challenges in multicultural societies, such as language, norms, and values, South African history also includes significant cultural differences. The present data does not provide any insights into teachers' upbringing, their historical and cultural backgrounds, or their sense of belonging towards the school and its surrounding contexts. For this reason, it is suggested that further research on TSR includes a detailed analysis of contextual factors.

5.4 Methodological limitations

Methodological limitations of this study, particularly its small sample size (N = 7) and its restriction to a single school, where only 7 of 16 eligible teachers volunteered, are acknowledged. Furthermore, incorporating a Phase C into the design will strengthen future findings. Prior research suggests that a second round of intervention can lead to greater improvements in closeness, conflict, and self-efficacy (Bosman et al., 2024). Repeating Banking Time might have highlighted clearer and more pronounced changes in teachers' perceptions.

6. Conclusions and Further Implications

This study examined whether Banking Time can positively influence teacher–student relationships (TSR) in South Africa, a context marked by persistently low academic performance, high dropout rates, unemployment, and poverty (von Davier et al., 2024). Rural schools are particularly affected,

placing students' social, emotional, and academic development at risk. Despite substantial government spending on education, outcomes remain poor due to inadequate teacher training and diluted reforms influenced by teacher unions (Schirmer & Visser, 2023b). While most TSR research is conducted in Western contexts, evidence consistently shows that high-quality relationships benefit both teachers and students. In relation to the first research question, this study provides evidence for the efficacy of interventions that focus solely on TSR in contexts where the education system is at risk. The present investigation contributes to current research and pedagogical practices worldwide and supports the importance of TSR.

Regarding the second research question, this investigation finds that the intervention produces even greater and more significant changes in relationships where teachers initially rated students' behaviour as predominantly externalising. This is of particular interest, as previous research indicates that such relationships are at an elevated risk (de Ruiter et al., 2020). These findings further extend the existing literature on Banking Time and allow for the derivation of implications for future teacher training.

However, this study has several limitations. Despite this, willingness and significant beneficial outcomes among participating teachers were observed. Teachers of the next generation must be trained with an awareness of: their own attachment history, students' attachment history and an understanding of students' socio-cultural backgrounds. In addition to the pressing need for improved teacher training on content knowledge in universities, our results and theoretical background reveal great potential for teacher training when teachers' needs are assessed based on their daily experiences and perceptions. It is essential to engage teachers based on these experiences and individual perceptions. Teacher training and further research must be carefully aligned with these starting points, ensuring that content is meaningfully connected to their existing knowledge and context.

7. Declarations

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Conflicts of Interest: The author declares no conflict of interest.

Data Availability: The data supporting the findings of this study are available from the corresponding author upon reasonable request. Access will be granted to researchers who meet the criteria for data sharing established by the institutional review board or ethics committee.

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