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Positive Self-Talk and Self-Confidence Among Elementary Students: A Quasi-Experimental Study in Gowa

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Abstract

Background: Low self-confidence in upper elementary school can undermine academic engagement and socio-emotional adjustment, highlighting the need for school-based interventions. **Objective**: This study examined the effectiveness of a positive self-talk intervention to enhance self-confidence among fifth-grade students. **Method**: Using a one-group pretest–posttest design, seven students with low-to-moderate self-confidence were identified through classroom observations and teacher interviews. Four structured sessions employed play-based activities, storytelling, and guided practice to foster cognitive reinterpretation. Self-confidence was measured using the Self-Confidence Assessment Instrument before and after the intervention. **Results**: All seven participants showed improvement, with group-level analysis indicating statistically significant change (Sign Test, $p = .016$, Cohen's $d = 2.61$), though the large effect size should be interpreted cautiously given the small sample ($n = 7$) and absence of a control group. **Conclusion**: The intervention appears practical and potentially promising for enhancing self-confidence in similar school contexts. Findings provide preliminary support for brief cognitive interventions in schools, while underscoring the need for replication through controlled studies with larger samples.

Keywords: Cognitive restructuring; elementary students; positive self-talk; self-confidence; school-based intervention

Abstrak

Latar Belakang: Rendahnya *self-confidence* pada siswa sekolah dasar kelas tinggi dapat mengganggu keterlibatan akademik dan penyesuaian sosial-emosional, sehingga diperlukan intervensi berbasis sekolah. **Tujuan**: Penelitian ini menguji efektivitas intervensi *self-talk* positif untuk meningkatkan *self-confidence* pada siswa kelas lima. **Metode**: Menggunakan desain *pretest–posttest* satu kelompok, tujuh siswa ber-*self-confidence* rendah hingga sedang diidentifikasi melalui observasi kelas dan wawancara guru. Empat sesi terstruktur menggunakan aktivitas berbasis bermain, bercerita, dan latihan terpandu untuk memfasilitasi reinterpretasi kognitif. *Self-confidence* diukur menggunakan *Self-Confidence Assessment Instrument* sebelum dan sesudah intervensi. **Hasil**: Ketujuh partisipan menunjukkan peningkatan, dengan analisis tingkat kelompok mengindikasikan perubahan yang signifikan secara statistik (Sign Test, $p = 0,016$, Cohen's $d = 2,61$), meskipun *effect size* yang besar ini perlu diinterpretasikan secara hati-hati mengingat sampel yang kecil ($n = 7$) dan ketiadaan kelompok kontrol. **Kesimpulan**: Intervensi ini tampak praktis dan berpotensi menjanjikan untuk meningkatkan *self-confidence* dalam konteks sekolah serupa. Temuan ini memberikan dukungan awal bagi intervensi kognitif singkat di sekolah, serta menegaskan perlunya replikasi melalui studi terkontrol dengan sampel lebih besar.

Kata Kunci: Intervensi berbasis sekolah; restrukturisasi kognitif; *self-talk* positif; *self-confidence*; siswa sekolah dasar

Introduction

Self-confidence is widely recognized as a core psychological resource that supports children's successful adaptation to the academic and social demands of elementary school (Long et al., 2023). In the classroom, students who hold more positive beliefs about their own abilities tend to engage more actively, persist longer on challenging tasks, and demonstrate more adaptive motivational responses to academic difficulties rather than avoidance or disengagement (Eccles & Wigfield, 2020). Empirical research on self-related constructs consistently shows that children with higher academic self-concept and confidence display better performance across key school subjects and demonstrate more adaptive learning behaviors, including help-seeking and self-regulation (Karlen et al., 2021; Postigo et al., 2022; Rost & Feng, 2024). Conversely, low self-confidence in the early school years is associated with avoidance of academically demanding activities, heightened performance anxiety, and negative self-evaluations that can undermine both achievement and socio-emotional well-being over time (Fernández-Sogorb et al., 2021; Wikman et al., 2022). These findings underscore the importance of systematically fostering self-confidence as part of holistic efforts to promote children's academic and socio-emotional development in elementary education (Chen et al., 2025).

While these self-related constructs are interconnected, they represent distinct psychological phenomena. Self-confidence refers to individuals' confidence judgments about how likely they are to perform successfully (i.e., the certainty of being correct or effective in a given performance context), and it is empirically distinguishable from related self-beliefs such as self-efficacy (Stankov et al., 2012). This differs from self-esteem, which reflects global evaluations of self-worth independent of specific competencies (Rosenberg, 1965), and from academic self-concept, which encompasses domain-specific perceptions of academic abilities across subject areas (Marsh & Craven, 2006). The present study specifically targets self-confidence—the context-specific belief in one's capabilities—as manifested in elementary students' willingness to participate, persist, and engage in classroom activities.

During the upper elementary school years, particularly in grade 5, students face increasingly complex academic demands alongside heightened peer social evaluation and elevated teacher-parent expectations. Students with low self-confidence during this phase characteristically hesitate to participate in class discussions, exhibit anxiety during performance situations, and actively avoid contexts requiring public demonstration of knowledge (Fishstrom et al., 2022). Teachers commonly report encountering intellectually capable students who fail to demonstrate their potential due to persistent self-doubt and negative self-narratives regarding their abilities (Raoof et al., 2024). This discrepancy between intellectual capacity and demonstrated achievement is particularly concerning, as avoidant patterns established during upper elementary grades can consolidate into entrenched self-limiting beliefs (Laursen et al., 2021). The absence of targeted intervention during this critical developmental period risks not only immediate academic engagement but also longer-term impacts on academic trajectories and socio-emotional adaptation (McCartan et al., 2023). Thus, the upper elementary context presents both an urgent need and strategic opportunity for implementing practical, structured psychological interventions to strengthen self-confidence before negative patterns become deeply rooted.

Positive self-talk operates through cognitive reinterpretation mechanisms, wherein students learn to identify and replace automatic negative thoughts with adaptive affirmations (Stiede et al., 2023). Grounded in CBT principles of cognitive restructuring and self-instruction (David & Fodor, 2023), this mechanism enables students to modify maladaptive thought patterns that maintain low self-confidence. Recent meta-analytic evidence indicates that structured cognitive-behavioral group protocols significantly improve self-related beliefs in elementary school children (Epel et al., 2021), and cognitive-behavioral therapy-based interventions have demonstrated efficacy in reducing anxiety and enhancing self-esteem among adolescents (De Silva et al., 2024). However, evidence remains limited regarding brief, manualized positive self-talk interventions specifically designed to enhance self-confidence—rather than self-esteem or anxiety reduction—in upper elementary students within routine school settings. This gap is particularly consequential given educators' expressed need for feasible, resource-efficient interventions that integrate seamlessly into existing guidance and counseling periods (Cunha et al., 2023; Eiraldi et al., 2023).

This study addresses these gaps by examining a structured positive self-talk intervention that differs from prior school-based programs in several ways. First, it targets self-confidence specifically through cognitive reinterpretation mechanisms, rather than broad social-emotional learning or anxiety-focused CBT protocols. Second, it employs a manualized, four-session intensive format delivered over consecutive days, designed for feasibility in typical school guidance periods without requiring extended clinical training. Third, it focuses on upper elementary students (grade 5) during a critical developmental window when negative self-narratives begin to consolidate, providing empirical evidence for brief cognitive interventions in this

underserved age group. The brief, consecutive-session format was selected based on emerging evidence that intensive delivery schedules facilitate rapid skill consolidation in cognitive interventions (Bruns et al., 2023), while also addressing practical constraints in school settings where extended multi-week programs often face implementation barriers (Eiraldi et al., 2023). Repeated daily practice over four sessions provides structured opportunities for cognitive rehearsal and behavioral application without temporal decay between sessions.

Based on cognitive-behavioral theory and prior empirical evidence supporting structured positive self-talk interventions, it was hypothesized that students who received the four-session program would demonstrate statistically significant improvements in self-confidence scores from pretest to posttest. A secondary expectation was that the majority of participants would exhibit positive change in self-confidence, consistent with increased use of adaptive self-talk strategies and reduced negative self-referential cognitions. The findings aim to provide educators and school counselors with an evidence-based, resource-efficient intervention model that can be integrated into existing guidance and counseling programs.

Method

This study employed a quasi-experimental design using a one-group pretest–posttest model, involving baseline measurements before intervention, administration of the positive self-talk program, and posttest measurements to assess changes in self-confidence. This design was selected because the study involved naturally formed classroom groups where randomization was not feasible. The intervention timeline consisted of three phases: (a) pre-intervention, where pretest measurements were collected; (b) intervention, comprising four structured daily sessions of positive self-talk training; and (c) post-intervention, where posttest measurements were obtained immediately following the final session. Despite the absence of a control group, this design permitted observation of changes in self-confidence by comparing pretest and posttest scores. This design is particularly suitable for preliminary intervention studies in school settings, as it effectively detects changes in dependent variables while remaining practical and resource-efficient for classroom implementation.

This study received ethical approval from the Institutional Review Board (No. 4084/UN36.11/TU/2025) and administrative approval from the school prior to implementation. Written informed consent was obtained from all parents or legal guardians, and verbal assent was obtained from all participating students. Participants were informed that their involvement was entirely voluntary and that they could withdraw from the study at any time without penalty. Confidentiality was maintained throughout the study by assigning coded participant identifiers and storing all data securely. No personally identifying information was included in the data analysis or reporting. The study posed minimal risk to participants, as the positive self-talk intervention involved standard educational activities appropriate for elementary-aged students, with no invasive or harmful procedures.

Design Limitations

This study employed a one-group pretest–posttest design, appropriate for a pilot investigation. However, the absence of a control group limits causal inference (Handley et al., 2018). Observed improvements may be influenced by maturation effects, testing effects, Hawthorne effect, and social desirability bias. These threats to internal validity are discussed in the Limitations section.

Specifically, maturation effects may have occurred as participants naturally developed over the intervention period regardless of treatment (Campbell & Stanley, 1963). Testing effects could have influenced posttest performance, as familiarity with the instrument from pretest administration may have improved scores independently of the intervention (Shadish et al., 2002). The Hawthorne effect—whereby participants alter behavior simply because they are aware of being observed—represents an additional confound in this small-group setting (McCambridge et al., 2014). Finally, social desirability bias may have led participants to report higher self-confidence on the self-report measure to meet perceived expectations (Krumpal, 2013). Despite these limitations, the one-group pretest–posttest design is justified for this pilot study, as the primary aim was to obtain preliminary evidence of intervention feasibility and potential efficacy before committing resources to a larger controlled trial.

Sample or Population

The population consisted of fifth-grade students from an elementary school in Gowa District, South Sulawesi Province, Indonesia. Participants were selected using purposive sampling based on teacher identification and classroom observation. This sampling technique was appropriate because the study targeted a specific subgroup of students displaying particular behavioral characteristics that could not be identified through random selection (Palinkas et al., 2015).

Students were identified as having low-to-moderate self-confidence through a sequential multi-source screening process, employing data triangulation to enhance credibility of participant identification (Noble & Heale, 2019). In the initial identification phase, the researcher and classroom teacher used two qualitative indicators: (a) classroom observation showing frequent hesitation in answering questions and reluctance to perform in front of peers, and (b) teacher interview indicating withdrawal from social activities and persistent self-doubt during academic tasks. Through this initial screening, 8 of 18 students (44.4%) were identified as potentially having low-to-moderate self-confidence.

The initial identification was conducted collaboratively between the researcher and classroom teacher rather than independently; therefore, formal inter-rater reliability was not calculated. However, the use of two qualitative indicators—classroom observation and teacher interview—combined with subsequent quantitative confirmation through pretest scores, provided methodological triangulation that reduced reliance on any single assessor's judgment (Noble & Heale, 2019).

In the confirmation phase, these 8 students completed the Self-Confidence Assessment Instrument as a pretest. Students whose scores fell at or below the moderate category (scores ≤ 28 on a 10-item, 4-point Likert scale) were confirmed as eligible participants. One student was excluded at this stage because the pretest score exceeded this cutoff, indicating a self-confidence level above the low-to-moderate range targeted by this study. A final sample of 7 fifth-grade students (ages 10–11 years; 3 boys, 4 girls) was confirmed.

All participants and their parents provided informed consent prior to the study. The school was a government-funded elementary school serving a lower-to-middle-income community. Intervention sessions were conducted during allocated guidance and counseling periods to minimize disruption to regular academic instruction. The classroom environment was standard, equipped with basic furniture and learning materials necessary for conducting the positive self-talk intervention activities. A comprehensive discussion of all study limitations, including those identified through data analysis, is provided in the Limitations section.

Procedure

The positive self-talk intervention program consisted of four structured sessions delivered over four consecutive days, each lasting approximately 45–60 minutes, employing play-based activities, storytelling, discussion, and direct practice to enhance self-confidence through cognitive reinterpretation. Session 1: Recognizing Thoughts and Feelings introduced students to self-talk through emotion recognition activities, storytelling about overcoming fear, and reflective discussions, where students identified and wrote their negative thoughts on colored paper, then symbolically discarded them as a representation of releasing negative thinking patterns. Session 2: Writing and Replacing Negative Thoughts engaged students in cognitive restructuring by rewriting negative thoughts as positive affirmations, with the main activity involving creation of a "*Positive Thought Tree*," where each student wrote an affirmation, read it aloud to peers, and displayed it on a classroom tree poster. Session 3: Vocalizing Positive Self-Talk provided practice speaking affirmations aloud through an activity called "*Awesome Names*" to recognize positive qualities, listening to recorded positive affirmations, group recitation guided by the facilitator, and paired peer interactions where students exchanged encouraging statements. Session 4: Building Confident Habits focused on consolidation and application by having students write personalized affirmations, read them aloud with conviction, and practice a classroom presentation about themselves, concluding with group reflection on experiences and perceived changes in confidence levels.

To ensure intervention fidelity, the facilitator followed a structured session-by-session manual specifying activities, delivery scripts, and time allocations for each of the four sessions. A fidelity checklist was completed after each session to document whether all planned components were delivered as intended, including activity completion, time adherence, and participant engagement levels. Photographic and video documentation of selected activities was collected during sessions as supplementary evidence of implementation. These fidelity procedures were consistent with recommendations for monitoring treatment integrity in school-based intervention research (Borrelli, 2011).

Data Measurement

Self-confidence was measured using the Self-Confidence Assessment Instrument, a 10-item scale measuring four dimensions of self-confidence—self-acceptance, optimism, self-efficacy, and realistic goal-setting—that had undergone expert review and reliability testing in its original development study (Arum et al., 2022). Prior to data collection, three experts reviewed the instrument and reached consensus that it was appropriate for use in the present study. Responses were recorded on a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree). The scale was administered twice: at pretest (before intervention) to establish baseline self-confidence levels, and at posttest (immediately following the final intervention session) to

measure changes in self-confidence. This two-point measurement approach allowed for objective quantification of changes in participants' self-confidence levels before and after the positive self-talk intervention.

To assess internal consistency of the adapted instrument in the present sample, Cronbach's alpha was calculated using pretest screening data ($n = 18$). The analysis yielded $\alpha = .60$ for the 10-item scale. While this value falls below the conventional threshold of .70 (Tavakol & Dennick, 2011), it is considered marginally acceptable for exploratory research involving a small sample and a pediatric population. Research on pediatric response scales indicates that children aged 10–11 years often have difficulty distinguishing reverse-worded items, which can attenuate inter-item correlations and consequently reduce alpha values (Naegeli et al., 2018). Furthermore, alpha is a property of scores from a specific sample rather than a fixed property of the instrument itself (Tavakol & Dennick, 2011), and the small sample size ($n = 18$) may have contributed to a less stable estimate. Despite this limitation, the instrument was retained because it was originally developed and validated for Indonesian students (Arum et al., 2022), and its four dimensions of self-confidence—self-acceptance, optimism, self-efficacy, and realistic goal-setting—are theoretically relevant across developmental stages.

It should be noted that construct validity evidence beyond content review was not assessed for this instrument in the present study. Due to the pilot nature of the investigation and the small sample size, formal construct validation procedures such as convergent and discriminant validity testing were not feasible. Future research should examine the instrument's construct validity through factor analysis and correlations with established self-confidence or self-esteem measures using larger samples. Data collection proceeded in three stages. In the pre-intervention phase, all participants completed the self-confidence scale at baseline (pretest). During the intervention phase, the four structured positive self-talk sessions were conducted over four consecutive days during guidance and counseling periods. Sessions were documented with attendance records. In the post-intervention phase, immediately following the final session, all participants completed the self-confidence scale again (posttest). A manipulation check was conducted through questioning participants about specific positive self-talk examples learned and observable demonstration of increased confidence. All data were recorded securely with participant identifiers removed to ensure confidentiality.

Data Analysis

Data analysis consisted of descriptive and inferential statistical procedures. Descriptive statistics (mean, standard deviation, frequency) were computed to characterize sample demographics and baseline self-confidence scores. For inferential analysis, a non-parametric Sign Test was employed to determine whether significant differences existed between pretest and posttest self-confidence scores. The Sign Test was selected due to the small sample size ($n = 7$) and non-normal distribution assumptions inherent in quasi-experimental designs. All statistical procedures were conducted using IBM SPSS Statistics version 25. Statistical significance was established at $\alpha = .05$. Effect size was calculated using Cohen's d for paired samples: $d = (M\_posttest - M\_pretest) / SD\_pooled$, where $SD\_pooled = \sqrt{[(SD\_pre^2 + SD\_post^2) / 2]}$. Given the small sample size ($n = 7$), Hedges' g was also calculated to correct for potential upward bias (Hedges, 1981). Additionally, participants' categorical changes in self-confidence (from moderate to higher levels) were examined qualitatively to provide a comprehensive picture of intervention impact.

Results

The study sample comprised seven fifth-grade elementary students (ages 10–11 years; 3 boys and 4 girls) identified through classroom observations and teacher interviews as displaying low-to-moderate self-confidence levels. Pretest self-confidence scores ranged from 23 to 28 points ($M = 26.00$, $SD = 2.00$), indicating that participants began the study with relatively similar baseline levels. All participants completed both pretest and posttest assessments as well as all four intervention sessions without attrition.

Self-confidence scores increased substantially from pretest to posttest. Posttest scores ranged from 28 to 36 points ($M = 32.71$, $SD = 3.04$), representing a mean increase of 6.71 points ($SD = 2.56$). Individual participant changes are presented in Table 1, showing that all seven participants demonstrated measurable improvement, with change scores ranging from +4 to +12 points. The smallest improvement was observed in Participant 4 (+4 points, 16% increase), while the largest improvement was observed in Participant 7 (+12 points, 50% increase). The mean percentage change in self-confidence was 26.05% ($SD = 11.03$), indicating that participants' scores increased by approximately one-quarter relative to their baseline values. However, percentage change metrics can be misleading when the denominator (baseline score) occupies a restricted portion of the total scale range; the same absolute gain of 6.71 points represents 22.4% of the full 30-point scale range (possible scores: 10–40). Consequently, this metric may overstate the practical magnitude of improvement and should be interpreted alongside absolute change scores. Table 2 presents descriptive statistics

including Cohen's d, which was calculated to estimate the practical significance of observed changes. Cohen's $d = 2.61$ (Hedges' $g = 2.27$) represents a large effect size by conventional benchmarks (Cohen, 1988), though the magnitude likely reflects methodological factors in addition to treatment effects. This large effect size is consistent with the possibility that the intervention contributed to improvements in self-confidence, although alternative explanations cannot be ruled out.

Moreover, because participants were purposively selected based on low-to-moderate baseline self-confidence scores, regression to the mean represents a plausible alternative explanation for part of the observed improvement (Barnett, 2005). Scores obtained at the lower end of a distribution tend to increase upon retesting regardless of intervention, and the absence of a control group precludes distinguishing genuine treatment effects from this statistical artifact. To determine whether observed improvements were statistically significant, a non-parametric Sign Test was conducted. This test was selected due to the small sample size ($n = 7$) and the dichotomous nature of change direction. Results indicated that all seven participants (100%) demonstrated positive differences between posttest and pretest scores, with zero participants showing negative differences or no change (Table 3). The Sign Test yielded an exact significance value of $p = .016$ (two-tailed), calculated using binomial distribution. This p-value is well below the established significance level of $\alpha = .05$, providing statistical evidence that observed improvements were unlikely due to chance alone, though this does not rule out non-intervention explanations.

Table 1. Individual self-confidence scores: pretest, posttest, and changes

Participant	Pretest	Posttest	Change	% Change
1	27	33	+6	22.22
2	27	34	+7	25.93
3	28	35	+7	25.00
4	25	29	+4	16.00
5	23	28	+5	21.74
6	28	34	+6	21.43
7	24	36	+12	50.00
M	26.00	32.71	6.71	26.05
SD	2.00	3.04	2.56	11.03

Note. M = mean; SD = standard deviation. Change scores calculated as (Posttest – Pretest). % Change = (Change/Pretest) × 100.

Table 2. Self-confidence: descriptive statistics and intervention effect size

Measure	Pretest			Posttest			Change		Cohen's d	Hedges' g
	M	SD	R	M	SD	R	M	SD		
Self-Confidence	26.00	2.00	23-28	32.71	3.04	28-36	6.71	2.56	2.61	2.27

Note. Cohen's d calculated using pooled SD. Hedges' g corrects for small-sample bias (Hedges, 1981). Both values represent large effect sizes ($d \geq 0.80$; Cohen, 1988).

Table 3. Sign test results for self-confidence improvement

Test	Posttest−Pretest	n	%	p
Sign Test	Negative Differences	0	0.0	.016*
	Positive Differences	7	100.0	
	Ties	0	0.0	
	Total	7	100.0	

Note. All participants ($n = 7$, 100%) demonstrated positive improvement. Two-tailed Sign Test: *$p < .05$.

The consistency of improvement across all participants—with no reversals or non-responders—is noteworthy, although such a uniform response pattern is uncommon in psychological intervention research and may reflect the small sample size ($n = 7$) rather than universally consistent treatment effects. This finding should therefore be interpreted cautiously, as larger and more heterogeneous samples would likely yield greater variability in individual responses. The convergence of statistically significant results ($p = .016$) with large

effect sizes (Cohen's *d* = 2.61; Hedges' *g* = 2.27) is consistent with the interpretation that the intervention may have contributed to observed improvements in self-confidence, though these findings require replication with controlled designs.

Discussion

This study indicated that a brief positive self-talk intervention was associated with statistically significant improvements in self-confidence among seven elementary students with low-to-moderate baseline levels. All participants showed improvements ranging from 4 to 12 points (*M* = 6.71, *SD* = 2.56), representing approximately 26% mean increase from baseline. The Sign Test revealed uniform improvement across all participants (*p* = .016), with a large effect size (Cohen's *d* = 2.61; Hedges' *g* = 2.27), indicating improvements were unlikely to have occurred by chance. These findings align with empirical research demonstrating that cognitive-behavioral interventions targeting maladaptive thought patterns effectively enhance self-esteem in children (Bertie & Hudson, 2021; Hudson et al., 2023). Furthermore, this study extends prior research on positive self-talk showing that effort-focused affirmations benefit children's performance and self-regulation, particularly for those holding negative competence beliefs (Thomaes et al., 2020). The magnitude of improvement, while requiring cautious interpretation given the absence of a control group, provides preliminary indication that structured positive self-talk may offer a practical, resource-efficient approach for strengthening self-confidence in elementary school populations. These results offer preliminary, exploratory evidence consistent with the literature on brief, school-based cognitive-behavioral interventions for elementary students.

Acknowledging the methodological limitations discussed above, the following interpretation contextualizes the observed improvements within the CBT framework, which posits that maladaptive thought patterns and their cognitive restructuring form fundamental mechanisms of psychological change (Norbury et al., 2024; Salkovskis et al., 2023). The findings are consistent with the interpretation that cognitive reinterpretation—a central process wherein individuals replace automatic negative thoughts with adaptive affirmations—was associated with improvements in self-confidence among the elementary students in this study. Within the CBT framework, the four-session positive self-talk intervention was designed to facilitate modifications of participants' cognitive schemas regarding their capabilities and self-worth. In Session 1, wherein students identified and symbolically discarded their negative thoughts on colored paper, the intervention was designed to address attention and interpretation biases that characterized their anxious cognitions. This initial awareness-building phase aligns with CBT's principle that recognizing maladaptive thought patterns constitutes the prerequisite for meaningful cognitive change (Lau et al., 2021).

The cognitive reinterpretation mechanism was further operationalized across Sessions 2 and 3, where participants actively transformed negative beliefs into positive affirmations through structured activities such as the "*Positive Thought Tree*" and "*Awesome Names*" exercises. These components reflect what CBT theory identifies as cognitive reappraisal—an emotion regulation strategy wherein individuals deliberately reframe threat-related interpretations into more adaptive, benign, or opportunity-focused perspectives (Morello et al., 2023). Session 4, which consolidated these newly developed cognitive patterns through personalized affirmations and behavioral practice, was intended to facilitate maintenance and generalization, consistent with CBT models. It should be acknowledged that the present study did not include direct measures of cognitive change (e.g., frequency of negative vs. positive self-statements), and therefore the proposed mechanism linking positive self-talk to improved self-confidence remains a theoretical interpretation rather than an empirically demonstrated causal pathway.

These processes align with cognitive mechanisms identified in internet-based cognitive behavioral therapy for low self-esteem in adolescents (Berg et al., 2023; March et al., 2023). The pattern of uniform improvement in this sample is consistent with the theoretical expectation that cognitive reinterpretation may disrupt the cycle wherein negative self-talk maintains low self-confidence, replacing maladaptive automatic thoughts with more adaptive cognitions, although this interpretation should be considered alongside the alternative explanations discussed in the Limitations section. It is important to note that the present intervention is best characterized as a CBT-informed psychoeducational activity rather than a full CBT protocol. While grounded in CBT principles of cognitive restructuring and self-instruction (David & Fodor, 2023; Stiede et al., 2023), the brief four-session format was adapted for a school-based group setting, consistent with abbreviated CBT-informed approaches used in educational contexts (Kilbourne et al., 2018).

The large effect size observed in this study (Cohen's *d* = 2.61; Hedges' *g* = 2.27) should be interpreted in light of several methodological factors that typically inflate within-subject effect estimates. These include the absence of a control group, the restricted range of baseline scores resulting from purposive selection (*SD*

= 2.00), and the inherent tendency for pretest–posttest designs to yield larger effect sizes compared with between-group designs (Morris & DeShon, 2002). Consequently, direct numerical comparison between the present findings and effect sizes reported in randomized controlled trials is not methodologically appropriate. While prior CBT-informed interventions have reported significant improvements in children's self-related beliefs (Epel et al., 2021; Ede et al., 2023), these studies employed between-group designs with larger samples, and the effect size from the present uncontrolled study is not directly comparable to those obtained under controlled conditions. Replication with controlled designs and larger samples is necessary to establish the magnitude of intervention effects independent of methodological artifacts.

Several methodological factors contributed to this substantial effect. The intensive delivery schedule—four sessions over consecutive days—may have enabled rapid cognitive consolidation without temporal decay. The homogeneous sample ($M = 26.00$, $SD = 2.00$), resulting from purposive selection of students with low-to-moderate self-confidence, reflects restricted range that may artificially inflate standardized effect size estimates. This restricted variability typically attenuates effect sizes in larger, diverse populations but amplifies them in narrowly selected samples. The structured, manualized intervention components directly aligned with evidence-based mechanisms, maximizing potency. Measurement immediately after intervention completion captured peak effects before any potential decay. The immediate improvements observed following the four-session format are encouraging; however, in the absence of follow-up data, the durability of these gains remains unknown. Whether brief, intensive delivery produces lasting change comparable to extended programs is an empirical question that warrants investigation through longitudinal designs. As noted above, the effect size from this within-subject design is not directly comparable to between-group estimates (Morris & DeShon, 2002).

This study offers tentative practical implications for elementary school counselors and teachers considering brief, empirically informed interventions. The positive self-talk protocol showed initial feasibility for school-based delivery in the present sample during designated guidance and counseling periods, requiring minimal resources and training. For practitioners, the manualized intervention directly targets negative self-talk through structured sessions aligned with existing school curricula. School counselors may consider implementing the protocol within a systematic screening framework, utilizing teacher-completed behavioral assessments and classroom observations to identify students with low self-confidence as intervention candidates, pending further validation through controlled studies.

Teachers and counselors can monitor intervention fidelity through structured session checklists, ensuring consistent delivery and student engagement (Rookes et al., 2022). The intervention's efficiency—if supported by future controlled research—would speak to persistent resource constraints in school-based mental health. Brief intensive interventions may offer cost-effective alternatives to extended programming, potentially enabling more students to benefit with limited institutional resources (Bruns et al., 2023). Integration into social-emotional learning (SEL) frameworks may further enhance applicability—schools could consider embedding positive self-talk components into existing universal prevention programs (Tolan et al., 2024), pending further evidence of effectiveness. Long-term sustainability requires administrative support through designated counseling periods and brief professional development on cognitive reinterpretation techniques (Zabek et al., 2023). This study offers preliminary evidence suggesting that brief, intensive cognitive interventions may serve as practical school-based strategies that strengthen evidence-based practices while building practitioner capacity.

Limitations

Several limitations should be acknowledged when interpreting these findings. The one-group pretest–posttest design, while appropriate for a pilot investigation, precludes definitive causal attribution due to the absence of a control group, and observed improvements may be partially attributable to maturation effects, testing effects, Hawthorne effect, social desirability bias, or regression to the mean. In particular, regression to the mean cannot be excluded as a contributing factor to observed gains, given that participants were purposively selected based on low-to-moderate baseline scores. The small sample size ($n = 7$) further limits statistical power and generalizability to broader elementary school populations. Additionally, the homogeneity of baseline scores ($SD = 2.00$)—resulting from purposive selection—reflects restricted range that may artificially inflate standardized effect size estimates, and Cohen's d values from within-subject designs tend to be larger than those from between-group trials due to reduced error variance (Morris & DeShon, 2002); consequently, the observed effect size (Cohen's $d = 2.61$; Hedges' $g = 2.27$) should be interpreted with caution. The instrument's internal consistency was marginally below conventional thresholds ($\alpha = .60$), and construct validity beyond content review was not assessed, which may affect measurement precision. Furthermore, posttest measurement immediately after the final session captured peak effects without evaluating long-term

sustainability, and the intervention is best characterized as a CBT-informed psychoeducational activity rather than a full CBT protocol. Future research should address these limitations through randomized controlled trials with larger and more diverse samples, validated instruments, and longitudinal follow-up assessments.

Conclusion

This study indicated that a brief positive self-talk intervention delivered over four sessions was associated with statistically significant improvements in self-confidence among the seven elementary students in this sample. All participants exhibited positive change, with results suggesting that improvements were unlikely due to chance alone, though alternative explanations—including regression to the mean, maturation, and the absence of a control group—cannot be excluded. These findings align with cognitive-behavioral intervention research on self-esteem enhancement and extend research on effort-focused affirmations, providing preliminary empirical support for positive self-talk as a potentially promising approach for strengthening self-confidence in similar school contexts. Despite the limitations outlined above, the convergence of statistically significant results and practical feasibility is consistent with the preliminary potential of this empirically informed approach for school settings, pending replication with controlled designs. Practitioners may consider adapting this intervention with caution, given the small sample size ($n = 7$), absence of a control group, and lack of follow-up data; replication through randomized controlled trials with larger, more diverse samples and longitudinal follow-up assessments is necessary to establish durability, generalizability, and comparative effectiveness for elementary school mental health promotion.

References

Arum, A., Khumaedi, M., & Susilaningsih, E. (2022). Validity and reliability of development of self-confidence assessment instruments for students on chemistry subject. *Journal of Research and Educational Research Evaluation*, *11*(1), 62–69. https://doi.org/10.15294/jere.v11i1.55048

Barnett, A. G. (2005). Regression to the mean: What it is and how to deal with it. *International Journal of Epidemiology*, *34*(1), 215–220. https://doi.org/10.1093/ije/dyh299

Berg, M., Klemetz, H., Lindegaard, T., & Andersson, G. (2023). Self-esteem in new light: A qualitative study of experiences of internet-based cognitive behaviour therapy for low self-esteem in adolescents. *BMC Psychiatry*, *23*(1), 810. https://doi.org/10.1186/s12888-023-05328-0

Bertie, L.-A., & Hudson, J. L. (2021). CBT for childhood anxiety: Reviewing the state of personalised intervention research. *Frontiers in Psychology*, *12*, 722546. https://doi.org/10.3389/fpsyg.2021.722546

Borrelli, B. (2011). The assessment, monitoring, and enhancement of treatment fidelity in public health clinical trials. *Journal of Public Health Dentistry*, *71*(s1), S52–S63. https://doi.org/10.1111/j.1752-7325.2011.00233.x

Bruns, E. J., Lee, K., Davis, C., Pullmann, M. D., Ludwig, K., Sander, M., Holm-Hansen, C., Hoover, S., & McCauley, E. M. (2023). Effectiveness of a brief engagement, problem-solving, and triage strategy for high school students: Results of a randomized study. *Prevention Science*, *24*(4), 701–714. https://doi.org/10.1007/s11121-022-01463-4

Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Wadsworth.

Chen, Y.-Y., Hong, L., & Wang, M. (2025). Integrating career development with socio-emotional learning for rural primary school children: A school-based program and evaluation. *Applied Research in Quality of Life*, Advanced Online Publication. https://doi.org/10.1007/s11482-025-10507-0

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Cunha, J., Guimarães, A., Martins, J., & Rosário, P. (2023). A self-regulation intervention conducted by teachers in a disadvantaged school neighborhood: Implementers' and observers' perceptions of its impact on elementary students. *Children*, *10*(11), 1795. https://doi.org/10.3390/children10111795

David, O. A., & Fodor, L. A. (2023). Preventing mental illness in children that experienced maltreatment: The efficacy of Rethink Online Therapeutic Game. *Npj Digital Medicine*, *6*(1), 106. https://doi.org/10.1038/s41746-023-00849-0

De Silva, S., Peris, R., Senaviratne, S., & Samaranayake, D. (2024). Effectiveness of a cognitive behavioural therapy (CBT)-based intervention for reducing anxiety among adolescents in the Colombo District, Sri Lanka: Cluster randomized controlled trial. *Child and Adolescent Psychiatry and Mental Health*, *18*(1), 108. https://doi.org/10.1186/s13034-024-00799-9

Eccles, J. S., & Wigfield, A. (2020). From expectancy-value theory to situated expectancy-value theory: A developmental, social cognitive, and sociocultural perspective on motivation. *Contemporary Educational Psychology*, *61*, 101859. https://doi.org/10.1016/j.cedpsych.2020.101859

Ede, M. O., Okeke, C. I., & Oneli, J. O. (2023). Raising the self-esteem and reducing irrational beliefs of schoolchildren: The moderating and main effect study. *Medicine*, *102*(27), e34168. https://doi.org/10.1097/md.0000000000034168

Eiraldi, R., Comly, R., Goldstein, J., Khanna, M. S., McCurdy, B. L., Rutherford, L. E., Henson, K., Bevenour, P., Francisco, J., & Jawad, A. F. (2023). Development of an online training platform and implementation strategy for school-based mental health professionals in rural elementary schools: A mixed-methods study. *School Mental Health*, *15*(3), 692–709. https://doi.org/10.1007/s12310-023-09582-1

Epel, N., Zohar, A. A., Artom, A., Novak, A. M., & Lev-Ari, S. (2021). The effect of cognitive behavioral group therapy on children's self-esteem. *Children*, *8*(11), 958. https://doi.org/10.3390/children8110958

Fernández-Sogorb, A., Sanmartín, R., Vicent, M., & Gonzálvez, C. (2021). Identifying profiles of anxiety in late childhood and exploring their relationship with school-based distress. *International Journal of Environmental Research and Public Health*, *18*(3), 948. https://doi.org/10.3390/ijerph18030948

Fishstrom, S., Wang, H.-H., Bhat, B. H., Daniel, J., Dille, J., Capin, P., & Vaughn, S. (2022). A meta-analysis of the effects of academic interventions on academic achievement and academic anxiety outcomes in elementary school children. *Journal of School Psychology*, *92*, 265–284. https://doi.org/10.1016/j.jsp.2022.03.011

Handley, M. A., Lyles, C. R., McCulloch, C., & Cattamanchi, A. (2018). Selecting and improving quasi-experimental designs in effectiveness and implementation research. *Annual Review of Public Health*, *39*(1), 5–25. https://doi.org/10.1146/annurev-publhealth-040617-014128

Hedges, L. V. (1981). Distribution theory for Glass's estimator of effect size and related estimators. *Journal of Educational Statistics*, *6*(2), 107–128. https://doi.org/10.2307/1164588

Hudson, J. L., Minihan, S., Chen, W., Carl, T., Fu, M., Tully, L., Kangas, M., Rosewell, L., McDermott, E. A., Wang, Y., Stubbs, T., & Martiniuk, A. (2023). Interventions for young children's mental health: A review of reviews. *Clinical Child and Family Psychology Review*, *26*(3), 593–641. https://doi.org/10.1007/s10567-023-00443-6

Karlen, Y., Hirt, C. N., Liska, A., & Stebner, F. (2021). Mindsets and self-concepts about self-regulated learning: Their relationships with emotions, strategy knowledge, and academic achievement. *Frontiers in Psychology*, *12*, 661142. https://doi.org/10.3389/fpsyg.2021.661142

Kilbourne, A. M., Smith, S. N., Choi, S. Y., Koschmann, E., Liebrecht, C., Rusch, A., Abelson, J. L., Eisenberg, D., Himle, J. A., Fitzgerald, K., & Almirall, D. (2018). Adaptive school-based implementation of CBT (ASIC): Clustered-SMART for building an optimized adaptive implementation intervention to improve uptake of mental health interventions in schools. *Implementation Science*, *13*(1), 119. https://doi.org/10.1186/s13012-018-0808-8

Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys. *Quality & Quantity*, *47*(4), 2025–2047. https://doi.org/10.1007/s11135-011-9640-9

Lau, J. Y., Watkins-Muleba, R., Lee, I., Pile, V., & Hirsch, C. R. (2021). Promoting helpful attention and interpretation patterns to reduce anxiety and depression in young people: Weaving scientific data with young peoples' lived experiences. *BMC Psychiatry*, *21*(1), 403. https://doi.org/10.1186/s12888-021-03320-0

Laursen, B., Richmond, A., Kiuru, N., Lerkkanen, M.-K., & Poikkeus, A.-M. (2021). Off on the wrong foot: Task avoidance at the outset of primary school anticipates academic difficulties and declining peer acceptance. *European Journal of Developmental Psychology*, *19*(4), 601–615. https://doi.org/10.1080/17405629.2021.1936491

Long, Z., Wang, K., Wang, H., Yao, W., & Liu, C. (2023). Effect of a mental health education intervention on children's life satisfaction and self-confidence in rural China. *Frontiers in Psychology*, *14*, 1277139. https://doi.org/10.3389/fpsyg.2023.1277139

March, S., Spence, S. H., Myers, L., Ford, M., Smith, G., & Donovan, C. L. (2023). Stepped-care versus therapist-guided, internet-based cognitive behaviour therapy for childhood and adolescent anxiety: A non-inferiority trial. *Internet Interventions*, *34*, 100675. https://doi.org/10.1016/j.invent.2023.100675

Marsh, H. W., & Craven, R. G. (2006). Reciprocal effects of self-concept and performance from a multidimensional perspective: Beyond seductive pleasure and unidimensional perspectives. *Perspectives on Psychological Science*, *1*(2), 133–163. https://doi.org/10.1111/j.1745-6916.2006.00010.x

McCambridge, J., Witton, J., & Elbourne, D. R. (2014). Systematic review of the Hawthorne effect: New concepts are needed to study research participation effects. *Journal of Clinical Epidemiology*, *67*(3), 267–277. https://doi.org/10.1016/j.jclinepi.2013.08.015

McCartan, C. J., Roberts, J., & Jordan, J. (2023). Centre-based early education interventions for improving school readiness: A systematic review. *Campbell Systematic Reviews*, *19*(4), e1363. https://doi.org/10.1002/cl2.1363

Morello, K., Schäfer, S. K., Kunzler, A. M., Priesterroth, L.-S., Tüscher, O., & Kubiak, T. (2023). Cognitive reappraisal in mHealth interventions to foster mental health in adults: A systematic review and meta-analysis. *Frontiers in Digital Health*, *5*, 1253390. https://doi.org/10.3389/fdgth.2023.1253390

Morris, S. B., & DeShon, R. P. (2002). Combining effect size estimates in meta-analysis with repeated measures and independent-groups designs. *Psychological Methods*, *7*(1), 105–125. https://doi.org/10.1037/1082-989x.7.1.105

Naegeli, A. N., Hanlon, J., Gries, K. S., Safikhani, S., Ryden, A., Patel, M., Crescioni, M., & Vernon, M. (2018). Literature review to characterize the empirical basis for response scale selection in pediatric populations. *Journal of Patient-Reported Outcomes*, *2*, 39. https://doi.org/10.1186/s41687-018-0051-8

Noble, H., & Heale, R. (2019). Triangulation in research, with examples. *Evidence Based Nursing*, *22*(3), 67–68. https://doi.org/10.1136/ebnurs-2019-103145

Norbury, A., Hauser, T. U., Fleming, S. M., Dolan, R. J., & Huys, Q. J. (2024). Different components of cognitive-behavioral therapy affect specific cognitive mechanisms. *Science Advances*, *10*(13), eadk3222. https://doi.org/10.1126/sciadv.adk3222

Palinkas, L., Horwitz, S., Green, C., Wisdom, J., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, *42*(5), 533–544. https://doi.org/10.1007/s10488-013-0528-y

Postigo, Á., Fernández-Alonso, R., Fonseca-Pedrero, E., González-Nuevo, C., & Muñiz, J. (2022). Academic self-concept dramatically declines in secondary school: Personal and contextual determinants. *International Journal of Environmental Research and Public Health*, *19*(5), 3010. https://doi.org/10.3390/ijerph19053010

Raoof, K., Shokri, O., Fathabadi, J., & Panaghi, L. (2024). Unpacking the underachievement of gifted students: A systematic review of internal and external factors. *Heliyon*, *10*(17), e36908. https://doi.org/10.1016/j.heliyon.2024.e36908

Rookes, T. A., Schrag, A., Walters, K., & Armstrong, M. (2022). Measures of fidelity of delivery and engagement in self-management interventions: A systematic review of measures. *Clinical Trials*, *19*(6), 665–672. https://doi.org/10.1177/17407745221118555

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press.

Rost, D. H., & Feng, X. (2024). Academic self-concept wins the race: The prediction of achievements in three major school subjects by five subject-specific self-related variables. *Behavioral Sciences*, *14*(1), 40. https://doi.org/10.3390/bs14010040

Salkovskis, P. M., Sighvatsson, M. B., & Sigurdsson, J. F. (2023). How effective psychological treatments work: Mechanisms of change in cognitive behavioural therapy and beyond. *Behavioural and Cognitive Psychotherapy*, *51*(6), 595–615. https://doi.org/10.1017/s1352465823000590

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Wadsworth Cengage Learning.

Stankov, L., Lee, J., Luo, W., & Hogan, D. J. (2012). Confidence: A better predictor of academic achievement than self-efficacy, self-concept and anxiety? *Learning and Individual Differences*, *22*(6), 747–758. https://doi.org/10.1016/j.lindif.2012.05.013

Stiede, J. T., Trent, E. S., Viana, A. G., Guzick, A. G., Storch, E. A., & Hershfield, J. (2023). Cognitive behavioral therapy for children and adolescents with anxiety disorders. *Child and Adolescent Psychiatric Clinics of North America*, *32*(3), 543–558. https://doi.org/10.1016/j.chc.2022.12.001

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, *2*(2), 53–55. https://doi.org/10.5116/ijme.4dfb.8dfd

Thomaes, S., Tjaarda, I. C., Brummelman, E., & Sedikides, C. (2020). Effort self-talk benefits the mathematics performance of children with negative competence beliefs. *Child Development*, *91*(6), 2211–2220. https://doi.org/10.1111/cdev.13347

Tolan, P. H., Harris, A. R., Burchinal, M., & Jennings, P. A. (2024). Promoting 21st century health and wellness skills in elementary school children: A group randomized trial. *Prevention Science*, *25*(6), 919–933. https://doi.org/10.1007/s11121-024-01717-3

Wikman, C., Allodi, M. W., & Ferrer-Wreder, L. A. (2022). Self-concept, prosocial school behaviors, well-being, and academic skills in elementary school students: A whole-child perspective. *Education Sciences*, *12*(5), 298. https://doi.org/10.3390/educsci12050298

Zabek, F., Lyons, M. D., Alwani, N., Taylor, J. V., Brown-Meredith, E., Cruz, M. A., & Southall, V. H. (2023). Roles and functions of school mental health professionals within comprehensive school mental health systems. *School Mental Health*, *15*(1), 1–18. https://doi.org/10.1007/s12310-022-09535-0