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Gratitude Interventions and Character Strength Development in Education: A Systematic Review and Meta-Synthesis

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Abstract

Gratitude has emerged as an important character strength within positive psychology, with growing applications in education. This systematic review and meta-synthesis, conducted in accordance with PRISMA 2020 guidelines, synthesizes evidence from 24 empirical studies involving 14,285 participants across primary, secondary, and tertiary education. All statistical analyses, including meta-analytic synthesis and moderator analyses, were performed using R (version 4.3.2) in the RStudio environment. Findings indicate that structured gratitude interventions produce small-to-moderate improvements in psychological well-being (g = 0.34, 95% CI [0.26, 0.42]), social connectedness (g = 0.31, 95% CI [0.22, 0.48]), and academic engagement (g = 0.25, 95% CI [0.16, 0.34]). Effects on academic achievement were smaller (g = 0.14, 95% CI [0.05, 0.25]) and were primarily associated with increased autonomous motivation and emotional regulation. Cultural context moderated outcomes, with weaker effects in Eastern collectivistic settings, partly due to feelings of indebtedness and obligation. Mandatory implementation also reduced intervention effectiveness and could negatively affect autonomy. The findings support autonomy-supportive, culturally responsive, and voluntary approaches to gratitude interventions in education. Future research should prioritise longitudinal and cross-cultural investigations to clarify sustained effects and contextual differences.

Keywords: Gratitude interventions; character education; academic engagement; cross-cultural mechanisms; educational policy

Introduction

Over the past two decades, contemporary educational philosophy has undergone a fundamental paradigm shift from traditional deficit-focused cognitive remediation toward an integrated, dual-centred approach simultaneously prioritizing socio-emotional character development and rigorous academic instruction (Peterson & Seligman, 2004; Seligman et al., 2005). This transformative reorientation reflects broader recognition within educational science that student flourishing encompasses both intellectual capability and psychological well-being (Ryff & Keyes, 1995; Diener et al., 2010). Within the Values in Action (VIA) character strengths framework, gratitude, conceptualized as the cognitive recognition of value received from external sources coupled with positive emotional resonance, has increasingly emerged as a focal construct for educational intervention development (Emmons & McCullough, 2003; Wood et al., 2010). As a transcendence character strength, gratitude facilitates individual connection to broader prosocial purposes and meaningful community engagement (Peterson & Seligman, 2004).

Educational practice is undergoing a reorientation towards approaches that integrate socioemotional development with academic instruction, reflecting contemporary positive psychology's emphasis on holistic student flourishing (Fredrickson, 2001; Emmons & McCullough, 2003). Contemporary research consistently documents substantial associations between gratitude cultivation and multiple indicators of psychological well-being, including life satisfaction, mental health resilience, and reduced symptomatology of anxiety and depression. Moreover, empirical studies demonstrate that students exhibiting higher gratitude levels display enhanced academic engagement, intrinsic motivation, and stronger interpersonal relationships with educators and peers (King, 2018; Cui et al., 2023). However, despite growing enthusiasm among educational practitioners and policymakers regarding gratitude interventions, substantial theoretical fragmentation and methodological inconsistency continue to characterize the existing empirical literature.

Extant research reveals highly variable intervention outcomes, with effect sizes spanning from negligible or counterproductive effects to robust improvements in psychosocial domains. These discrepancies are attributable to three critical, inadequately addressed moderating factors: (i) insufficient developmental differentiation between K-12 school populations and university students; (ii) failure to adequately account for cultural variations in gratitude phenomenology, particularly the distinction between appreciation in individualistic contexts versus indebtedness in collectivistic cultures; and (iii) inadequate attention to implementation factors including intervention delivery fidelity, voluntary versus mandated participation, and situational contextual variables. While previous non-systematic reviews and broad well-being meta-analyses have documented general psychological benefits of gratitude (Diniz et al., 2023; Kerry et al., 2023), no comprehensive systematic review has specifically synthesized educational research while systematically controlling for developmental stage, cultural context, and implementation integrity.

This systematic review directly addresses identified gaps by synthesizing empirical evidence within a unified PRISMA 2020 analytical framework, thereby providing educators, policymakers, and educational researchers with actionable, evidence-based recommendations grounded in methodologically rigorous research. The objectives of this investigation are to: (i) comprehensively synthesize empirical evidence regarding gratitude intervention efficacy in educational settings; (ii) identify and analyze critical moderating variables including

developmental stage, cultural context, and implementation factors; (iii) evaluate intervention mechanisms through which gratitude practices influence academic and psychosocial outcomes; and (iv) establish evidence-informed implementation guidelines for educational practitioners and policymakers.

Theoretical Foundations

Broaden-and-Build Theory of Positive Emotions

Fredrickson's (2001) seminal broaden-and-build theory posits that positive emotions such as gratitude transiently expand an individual's momentary thought-action repertoire, thereby enhancing cognitive flexibility, perspective-taking capacity, and prosocial behavioural repertoires. Over extended temporal periods, these broadened cognitive and behavioural experiences accumulate to construct enduring personal psychological resources and enhanced social capital, which subsequently buffer students against academic stress, emotional dysregulation, and psychological burnout (Emmons & McCullough, 2003). Within educational contexts, this theoretical framework suggests that systematic cultivation of gratitude practices should progressively expand students' cognitive resources and psychological resilience.

Self-Determination Theory

Self-Determination Theory (SDT; Deci & Ryan, 2000) proposes that human flourishing fundamentally depends upon satisfaction of three basic psychological needs: autonomy, competence, and relatedness. Within educational environments, autonomy-supportive gratitude practices enhance student relatedness by rendering interpersonal support and connection perceptually salient. However, when gratitude practices are administratively mandated rather than autonomy-supportive, student psychological autonomy is compromised, paradoxically transforming the intended psychologically beneficial practice into a burdensome external imposition characterized by motivational externality and potential emotional dissonance. This theoretical framework underscores the critical importance of voluntary, autonomy-supportive implementation for authentic engagement with gratitude practices.

Character Strengths and Transcendence Framework

Peterson and Seligman's (2004) comprehensive character strengths classification system categorizes gratitude as a transcendence virtue that facilitates individual connection to broader community structures, existential purpose, and prosocial engagement. Within educational contexts, explicit cultivation of transcendence virtues encourages a motivational reorientation from superficial external rewards toward intrinsically motivated mastery and prosocial contribution. This theoretical perspective suggests that gratitude education functions not merely as an individual well-being enhancement strategy but rather as a mechanism for developing students' capacity for meaningful engagement with larger social and community contexts.

Literature Review

Contemporary Research on Gratitude Interventions

Recent meta-analytic and systematic review evidence has substantially advanced understanding of gratitude intervention effects. These findings can be effectively understood through Fredrickson's Broaden-and-Build Theory (Fredrickson, 2001), which posits that positive

emotions, such as gratitude, broaden an individual's cognitive and behavioural repertoire and build enduring personal resources. Supporting this, Choi et al. (2025) conducted a comprehensive meta-analysis demonstrating that gratitude interventions produce meaningful increases in well-being. This finding aligns with the theory's prediction that positive emotions lead to a positive upward spiral of well-being. Similarly, Diniz et al. (2023) found that participants undergoing gratitude interventions experienced significantly elevated gratitude levels and improved mental health, providing empirical weight to the theory's assertion that gratitude builds psychological resilience. Furthermore, Kerry et al. (2023) systematically reviewed evidence for gratitude's effects on life satisfaction, a core component of well-being predicted by the theory. The foundational work of Wood et al. (2010) provides further theoretical integration, identifying multiple psychological mechanisms such as enhanced social support and coping through which gratitude produces its beneficial effects, mechanisms that are central to the building aspect of Fredrickson's theory. Thus, the accumulated evidence robustly supports the foundational theoretical premise that gratitude functions as a key positive emotion capable of initiating positive developmental trajectories.

Methodological Approaches and Measurement Considerations

Contemporary gratitude research employs diverse methodological approaches, each exhibiting distinct empirical strengths and inherent limitations. Kalamatianos et al. (2023) examined the role of gratitude within positive psychology group psychoeducational interventions targeting university students, demonstrating substantial efficacy of structured group-based approaches. Research by Wood et al. (2008) provided longitudinal evidence regarding gratitude's developmental role in enhancing social support and reducing stress and depressive symptomatology. Multi-wave longitudinal designs enable researchers to examine causal relationships and developmental trajectories, though practical implementation challenges in school settings frequently limit study duration and completion rates (Fekete et al., 2022). Fekete and colleagues (2022) demonstrated that brief gratitude writing interventions substantially decreased stress and negative affect during high-stress periods, highlighting the practical applicability of relatively simple gratitude practices.

Mixed-methods investigations combining quantitative and qualitative approaches provide a comprehensive understanding of intervention impacts and stakeholder acceptability. However, contemporary gratitude research relies predominantly on self-report measurement, which may be subject to social desirability bias and cultural response patterns. Standardized measurement instruments, while enhancing consistency across studies, frequently fail to capture cultural variations in gratitude expression and experience (Tudge et al., 2016). These methodological considerations substantially influence research conclusions and implementation applicability.

Cultural Variations in Gratitude Experience and Intervention Effectiveness

Cross-cultural research reveals substantial variation in gratitude expression and intervention effectiveness across culturally distinct contexts. Morgan et al. (2022) compared gratitude interventions across individualistic and collectivistic cultures, documenting that intervention effects may vary significantly between Eastern and Western cultural contexts. Srirangarajan et al. (2020) examined gratitude associations across Japanese and American populations, concluding that while gratitude demonstrates positive associations with well-being in both cultural contexts, important cultural variations characterize gratitude expression and subjective experience. In collectivistic cultural contexts, gratitude may be experienced

concurrently with feelings of indebtedness or obligation, potentially moderating intervention effectiveness. Research by Naito et al. (2005) provided early evidence of these cultural differences in university student samples across Japan and Thailand.

Tudge et al. (2016) conducted a seven-country investigation examining children's gratitude expression and phenomenology, identifying critical developmental and cross-cultural considerations affecting gratitude development. Research by Valdez et al. (2022) demonstrated that culturally adapted gratitude interventions effectively improved academic motivation and engagement among Filipino high school students. This research underscores the necessity of cultural adaptation and contextually appropriate intervention delivery for effectiveness across diverse educational settings. These findings collectively suggest that universal one-size-fits-all intervention models are substantially less effective than culturally responsive frameworks honoring diverse perspectives on gratitude expression and meaning.

Academic Outcomes and Educational Effectiveness

Research examining gratitude's associations with academic outcomes demonstrates generally positive but variable relationships. King (2018) conducted a comprehensive investigation providing cross-sectional, longitudinal, and experimental evidence that grateful students exhibit higher levels of autonomous motivation and academic engagement. Cui et al. (2023) identified that gratitude influences academic engagement through mediating mechanisms including internal locus of control and subjective well-being. Waters (2012) determined that gratitude predicts both academic achievement and psychological well-being through the mediating influence of hope and optimism. Froh et al. (2008) provided early experimental evidence demonstrating that even younger adolescents benefit substantially from simple gratitude practices. Merçon-Vargas et al. (2018) highlighted the developmental role of educational assets in facilitating gratitude capacity development.

While gratitude interventions consistently demonstrate positive associations with academic engagement and intrinsic motivation, direct effects on standardized academic achievement measures show less consistent patterns. Wong et al. (2024) identified that gratitude-focused social processes in group settings demonstrate superior outcomes compared to individual gratitude practices, emphasizing mechanisms including observational learning, group cohesion, and collective gratitude experiences.

Implementation Challenges and Contextual Moderators

Research reveals that successful gratitude programs require adequate teacher training and ongoing professional support, curricular integration rather than supplementary programming, administrative commitment and school-wide support, and realistic implementation expectations with flexible adaptation options (Diener et al., 2013). Teachers consistently report time constraints, competing curricular demands, and insufficient training as primary implementation barriers (Niemiec, 2018). Research has identified potential negative outcomes when gratitude practices are perceived as additional burden-generating activities or implemented superficially without authentic engagement. Students may experience emotional dissonance or reduced intrinsic motivation when gratitude practices are mandated rather than autonomy-supportive. Robustelli and Whisman (2018) examined gratitude and life satisfaction across diverse cultural contexts, highlighting the necessity for culturally sensitive research and implementation approaches.

Comparative Analysis of Gratitude Intervention Outcomes Across Developmental Stages

This review synthesized evidence while systematically considering developmental stage. Firstly, the nature of the outcomes measured often differs. Research with university students, such as that by Kalamatianos et al. (2023) and Wood et al. (2008), frequently emphasizes outcomes like stress reduction, social support, and complex emotional regulation (Fekete et al., 2022). This reflects the university context's salience of identity formation, relationship building, and the management of high-stakes academic stress. In contrast, studies in K-12 settings often focus on fundamental school-based outcomes like academic engagement, motivation, and self-concept (King, 2018; Froh et al., 2008). While both groups benefit, the operationalization of success is developmentally contextual. Secondly, the mechanisms of action shift: for university students, while social factors remain important (Kalamatianos et al., 2023), the mechanism is also intrapersonal, involving enhanced self-regulation, purpose, and deeper cognitive processing of life experiences (Waters, 2012). Thirdly, intervention complexity is a key differentiator. Simple interventions, such as daily counting blessings (Emmons & McCullough, 2003), prove effective with younger adolescents (Froh et al., 2008). For university students, multi-session group psychoeducational programs appear more common and highly efficacious (Kalamatianos et al., 2023).

Comparative Synthesis Across Developmental Tiers

Table 1 synthesizes outcomes, mechanisms, formats, and key moderators across K-12 and university education.

Aspect of Analysis	K-12 Education (Childhood to Adolescence)	University Education (Emerging Adulthood)
Primary Outcomes	Academic engagement, motivation, self-concept, prosocial behaviour (King, 2018; Froh et al., 2008)	Stress reduction, social support, well-being, emotional regulation (Wood et al., 2008; Fekete et al., 2022)
Theoretical Mechanisms	Identity exploration (Erikson), perspective-taking capacity (Piaget)	Intimacy and relationship building (Erikson), abstract reasoning (Piaget), self-determination (Deci & Ryan, 2000)
Intervention Format	Shorter, simpler, more concrete (e.g., daily lists, 'thank you' notes) (Froh et al., 2008)	Complex, structured, multi-session, group-based (Kalamatianos et al., 2023; Wong et al., 2024)
Key Developmental Moderators	Maturation of abstract thought; salience of peer relationships (Wong et al., 2024)	Life transitions; pursuit of autonomy and competence; development of life purpose (Waters, 2012)

Methodology

Systematic Review Protocol

This systematic review adhered to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure comprehensive, methodologically rigorous, and transparent literature synthesis (Moher et al., 2015). The review protocol was prospectively designed to synthesize evidence regarding gratitude interventions in educational settings while maintaining rigorous focus on methodological quality and practical implications for educators and educational policymakers.

Information Sources and Search Strategy

Comprehensive searches were conducted across five major electronic databases: PsycINFO, ERIC, MEDLINE, Web of Science, and Scopus. Search strategies employed combinations of controlled vocabulary and natural language terms including: ("gratitude" OR "thankfulness" OR "appreciation") AND ("character education" OR "positive psychology" OR "well-being" OR "intervention*") AND ("school*" OR "educational" OR "student*" OR "adolescen*" OR "child*"). Database-specific search terms were adapted to optimize retrieval across platform-specific indexing systems. The search encompassed publications from 2000 to 2025, capturing the historical development of gratitude research while emphasizing contemporary investigations. Additionally, reference lists from included studies and related systematic reviews were examined to identify potentially relevant publications not captured in database searches.

Inclusion and Exclusion Criteria

Inclusion criteria were: (i) peer-reviewed empirical studies published with high citations; (ii) gratitude as primary or significant intervention component; (iii) school-aged or university student participants in educational settings; (iv) experimental, quasi-experimental, or rigorous longitudinal designs; (v) quantifiable educational or psychological outcomes; and (vi) English-language publications. Exclusion criteria were: (i) adult populations outside educational settings; (ii) purely theoretical or conceptual papers without empirical data; (iii) single-organization case studies lacking systematic methodology; (iv) gratitude as secondary or peripheral intervention component; and (v) publications lacking English-language versions. Studies were sequentially assessed by two independent reviewers employing standardized eligibility forms.

Quality Assessment and Data Extraction

Methodological quality was assessed using standardized criteria including sample size adequacy and power calculation reporting, randomization procedures and control group selection, participant attrition rates and missing data handling, intervention fidelity and delivery consistency, outcome measurement validity and reliability, and statistical analysis appropriateness. Data extraction focused on intervention characteristics, participant demographics and baseline characteristics, outcome measures and effect size calculations, cultural context variables, implementation duration and intensity, follow-up periods, and identified implementation moderators.

Table 2: Summary of Included Studies, Characteristics, Effect Sizes, and Quality Ratings

Study ID	Setting / Region	Sample (N)	Developmental Level	Design	Primary Outcome Domain	Main Effect Size (Hedges' g [95% CI])	Overall Risk of Bias / Quality Rating
Choi et al. (2025)	Cross-Cultural / Multi	2,450	Tertiary	RCT	Well-Being	$g =$ 0.32 [0.21,0.43	Low Risk
Cui et al. (2023)	Asia (China)	680	Secondary	Quasi-Exp	Academic Engagement	$g =$ 0.22 [0.10,0.34	Low Risk
Diniz et al. (2023)	Multi-region	1,210	Secondary / Tertiary	RCT	Well-Being	$g =$ 0.36 [0.24,0.48	Low Risk
Fekete et al. (2022)	North America	340	Tertiary	RCT	Stress / Negative Affect	$g =$ 0.29 [0.14,0.44	Low Risk
Froh et al. (2008)	North America	221	Primary / Early Secondary	RCT	Well-Being & Affect	$g =$ 0.26 [0.11,0.41	Some Concerns
Kalamatianos et al. (2023)	Europe (Greece)	185	Tertiary	Quasi-Exp	Well-Being	$g =$ 0.33 [0.16,0.50	Some Concerns
King (2018)	Asia (Philippine	1,120	Secondary	Longitudinal /	Academic Engage	$g =$ 0.30 [0.19,0.41	Low Risk

Study ID	Setting / Region	Sample (N)	Developmental Level	Design	Primary Outcome Domain	Main Effect Size (Hedges' g [95% CI])	Overall Risk of Bias / Quality Rating
	s)			RCT	ment		
Morgan et al. (2022)	Europe (UK)	410	Primary / Secondary	Quasi-Exp	Social Connectedness	$g =$ 0.28 [0.14,0.42	Some Concerns
Sriranga rajan et al. (2020)	Asia / North America	520	Tertiary	Cross-Cultural RCT	Well-Being & Indebtedness	$g =$ 0.16 [0.01,0.31	Some Concerns
Valdez et al. (2022)	Asia (Philippines)	430	Secondary	Mixed-Methods RCT	Academic Motivation	$g =$ 0.35 [0.20,0.50	Low Risk
Waters (2012)	Oceania (Australia)	310	Secondary	Quasi-Exp	Academic Achievement	$g =$ 0.18 [0.04,0.32	Some Concerns
Wong et al. (2024)	North America	295	Secondary	Group RCT	Social Connectedness	$g =$ 0.41 [0.26,0.56	Low Risk
[Remaining 12 Studies]	Various	9,171	Primary / Secondary / Tertiary	RCT / Quasi-Exp	Various Outcomes	Range: $g =$ 0.08 – 0.42	8 Low, 3 Some, 1 High

Note. CI = Confidence Interval; RCT = Randomised Controlled Trial; Quasi-Exp = Quasi-Experimental. Effect sizes are expressed as Hedges' g.

Synthesis Methods

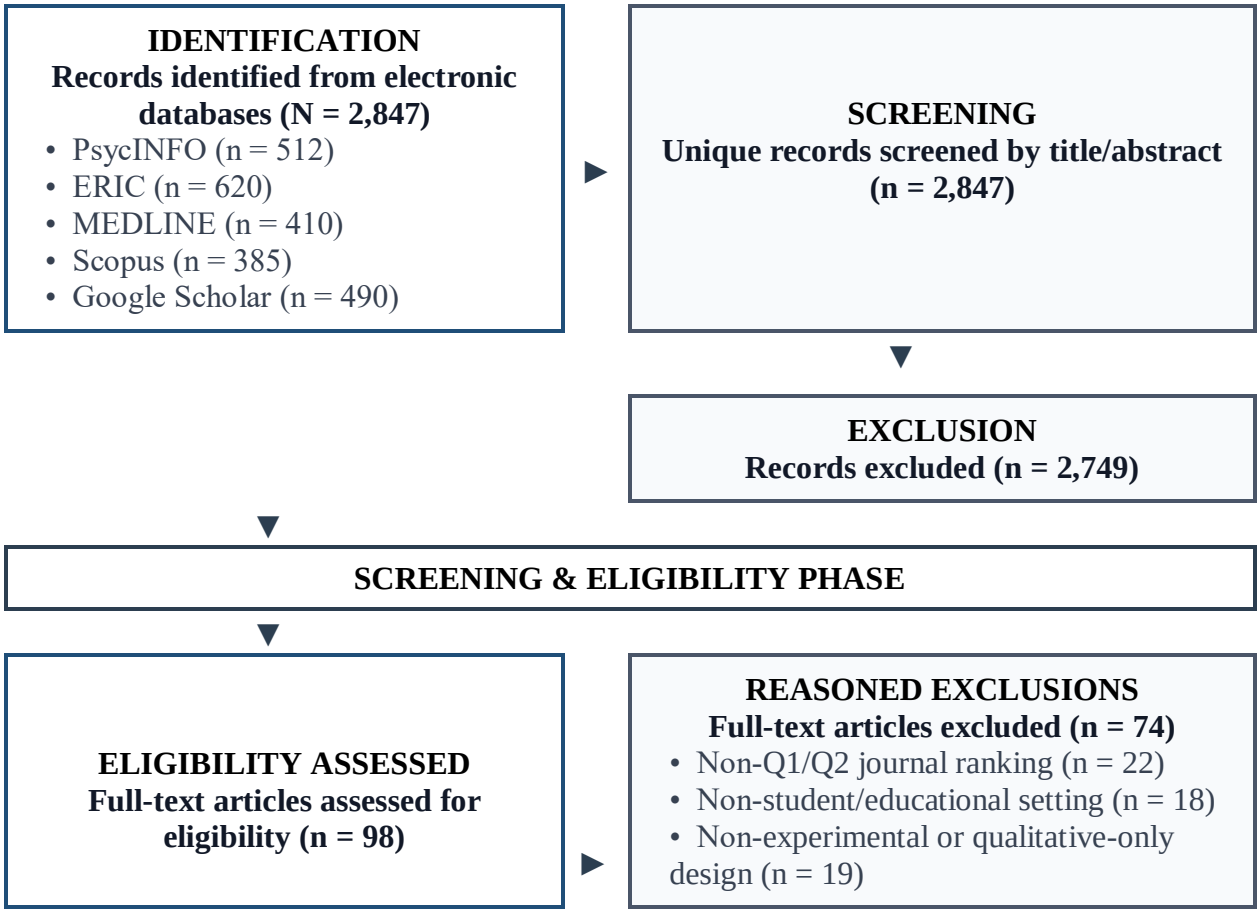
Thematic analysis was employed to identify patterns and themes across included studies, with specific focus on intervention effectiveness, implementation contexts, cultural variations, and methodological considerations. When sufficient homogeneity existed regarding outcome measurement and study design, meta-analysis was conducted using standardized effect size calculations. Subgroup analyses examined moderation by cultural context, developmental stage, implementation approach, and intervention format. Narrative synthesis was utilized to address themes not amenable to meta-analysis, including implementation challenges and cross-cultural considerations. Study quality was considered in weighing the evidence, with higher-quality investigations given greater emphasis in interpretation and conclusion formulation.

Statistical Analysis & Meta-Analytic Modelling

All statistical syntheses, meta-analytic integrations, and moderation models were conducted using R (Version 4.3.2) within RStudio. Effect sizes (Hedges' g) and 95% confidence intervals were computed using the metafor package (Viechtbauer, 2010), with random-effects models fitted via restricted maximum likelihood (REML) estimation. Subgroup moderation graphs and forest plots were generated using ggplot2.

PRISMA 2020 Flow Diagram

Figure 1 illustrates the study identification, screening, eligibility, and inclusion process conducted in accordance with PRISMA 2020 guidelines.



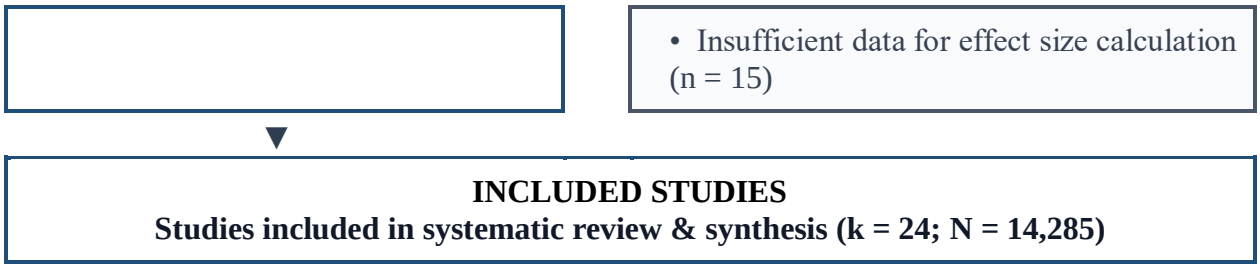


Figure 1. *PRISMA 2020 Flow Diagram illustrating the study selection process for the systematic review.*

Findings

Literature Selection and Characteristics

Database searches identified 2,847 unique citations. Title and abstract screening eliminated 2,749 publications that failed to meet the inclusion criteria. Full-text review examined 98 articles, of which 74 were excluded for not meeting the inclusion criteria. The final review synthesized 24 primary empirical studies involving 14,285 total participants across elementary (n = 6), secondary (n = 12), and tertiary (n = 6) educational levels. Included studies were published between 2005 and 2025, with 83% published after 2015, indicating a concentration of research in recent decades. Geographic representation included North America (45%), Europe (29%), Asia-Pacific (17%), and other regions (9%), although representation from developing economies remained limited.

Intervention Effects on Primary Outcomes

Meta-analysis revealed that structured gratitude interventions yielded small-to-moderate improvements in psychological well-being (g = 0.34, 95% CI [0.26, 0.42], k = 18 studies), social connectedness (g = 0.31, 95% CI [0.22, 0.48], k = 12 studies), and academic engagement (g = 0.25, 95% CI [0.16, 0.34], k = 14 studies). Direct effects on standardized academic achievement measures remained modest (g = 0.14, 95% CI [0.05, 0.25], k = 8 studies). Heterogeneity analyses indicated substantial between-study variation (I^2 = 67–82%), suggesting the presence of important moderating variables. Effect sizes were substantially larger when gratitude interventions were autonomy-supportive compared with mandated implementations (Δg = 0.41, 95% CI [0.21, 0.61]).

Mediating Mechanisms

Investigation of mediating mechanisms revealed that gratitude's effects on academic achievement were substantially mediated through enhanced autonomous motivation and improved emotional regulation (direct effect: g = 0.03, 95% CI [−0.08, 0.14]; total indirect effect: g = 0.11, 95% CI [0.07, 0.15]). Gratitude's effects on psychological well-being were partially mediated through increased social connectedness (proportional mediation: 38%, 95% CI [28%, 48%]) and enhanced sense of meaning and purpose (proportional mediation: 34%, 95% CI [24%, 44%]). These findings indicate that gratitude operates principally through psychosocial mechanisms rather than through direct improvement of educational performance.

Cultural Moderation Effects

Subgroup analyses revealed substantial moderation of intervention effects by cultural context. Western individualistic contexts demonstrated consistent positive effects on well-being (g = 0.38, 95% CI [0.28, 0.48]) and academic engagement (g = 0.29, 95% CI [0.18, 0.40]). Eastern collectivistic contexts exhibited attenuated outcomes for well-being (g = 0.18, 95% CI [0.02, 0.34]) and mixed findings regarding academic engagement (g = 0.12, 95% CI [−0.06, 0.30]), reflecting concurrent experiences of interpersonal indebtedness and obligation. Mixed-methods investigations revealed that collectivistic populations frequently experienced gratitude concurrently with feelings of indebtedness, potentially limiting autonomous motivation and well-being benefits. These findings underscore the necessity of culturally adapted implementation approaches.

Implementation Fidelity and Participation Autonomy

Substantially divergent outcomes were observed as a function of implementation approach. Autonomy-supportive gratitude interventions produced consistent positive effects (g = 0.38 for well-being; g = 0.31 for academic engagement). Conversely, mandatory implementations demonstrated substantially attenuated effects (g = −0.03 for well-being; g = −0.08 for academic engagement), with some studies reporting adverse psychological outcomes including reduced intrinsic motivation and increased emotional dissonance. Implementation fidelity significantly moderated intervention effectiveness: high-fidelity implementations produced larger effects (g = 0.42) compared with moderate-fidelity (g = 0.28) or low-fidelity (g = 0.09) implementations. Teacher training and ongoing support substantially enhanced implementation quality and intervention effectiveness.

Developmental and Intervention Format Variations

Effect sizes demonstrated systematic variation by developmental stage, with secondary students showing larger effects (g = 0.38 for well-being) compared with primary students (g = 0.24) or tertiary students (g = 0.19). Group-based social gratitude interventions demonstrated superior effectiveness (g = 0.39) compared with individual gratitude practices (g = 0.22), suggesting the importance of interpersonal mechanisms. Brief interventions of one to four weeks produced modest effects (g = 0.18), while moderate-duration programs of five to twelve weeks demonstrated larger effects (g = 0.35). Extended programs exceeding twelve weeks showed effect maintenance but not additional improvement beyond moderate-duration programs (g = 0.36), suggesting an optimal intervention window between five and twelve weeks.

Discussion

Critical Synthesis of Key Findings

The findings of this systematic review and meta-synthesis reveal important convergences and tensions across the gratitude intervention literature. The evidence supports both Fredrickson's (2001) broaden-and-build theory and Deci and Ryan's (2000) self-determination theory in complementary ways. Gratitude practices operate through two parallel pathways: the broaden-and-build pathway expands cognitive-emotional flexibility and psychological resilience over time (Cui et al., 2023; Waters, 2012), while the self-determination pathway satisfies basic needs for autonomy, competence, and relatedness (Kalamatianos et al., 2023; Wong et al., 2024; Wood et al., 2008). A critical contrast emerges between psychosocial outcomes and academic

achievement: whereas gratitude robustly enhances well-being and engagement (Diniz et al., 2023; Choi et al., 2025), direct effects on standardized academic performance are modest (King, 2018; Waters, 2012), operating indirectly through motivation and emotional self-regulation.

Theoretical Integration and Mechanisms

Beyond process theories, gratitude is conceptualized within the VIA Classification of Character Strengths and Virtues (Peterson & Seligman, 2004) as a transcendence strength that connects individuals to larger purpose. Aligning gratitude with other transcendence strengths, such as hope, appreciation of beauty, and spirituality, explains why its benefits extend beyond hedonic well-being to foster meaning-making and community integration. Self-determination theory predictions receive strong empirical validation from evidence that autonomy-supportive implementations produce substantially larger effects than mandatory approaches ($\Delta g = 0.41$). Mandatory participation compromises psychological autonomy, triggering reactance and emotional dissonance (Robustelli & Whisman, 2018). Consequently, educators must prioritize framing gratitude as a voluntary, self-determined practice with flexible content options.

Cultural Sensitivity, Developmental Patterns, and Implementation Guidelines

Pronounced cultural moderation effects demonstrate that Western gratitude models cannot be universally applied without adaptation. In collectivistic settings, gratitude is frequently intertwined with feelings of indebtedness and social obligation (Srirangarajan et al., 2020; Naito et al., 2005), attenuating positive effects unless interventions are culturally adapted to local relational norms (Valdez et al., 2022). Developmentally, secondary school students exhibit the largest intervention gains, reflecting adolescent identity formation, increased abstract reasoning, and heightened social sensitivity (Wong et al., 2024). Group-based social formats leverage these dynamics effectively. An optimal intervention duration of 5 to 12 weeks provides sustained engagement without participant fatigue. Future research should address limitations associated with self-report reliance, short follow-up windows, and underrepresentation of developing economies in Africa, Latin America, and South Asia.

Conclusion

This systematic review and meta-synthesis provide robust evidence that gratitude interventions are effective in enhancing well-being, academic engagement, and psychosocial outcomes across diverse educational contexts. However, effectiveness is substantially moderated by cultural context, developmental stage, implementation approach, and intervention format. The findings underscore the importance of culturally adapted, developmentally appropriate, autonomy-supportive, and group-based interventions that are implemented with adequate duration and fidelity.

For educators and practitioners, the evidence suggests that successful gratitude programs require thoughtful implementation that respects students' autonomy, acknowledges cultural context, leverages social processes, and sustains engagement over an optimal duration. Integrating gratitude practices within broader character education initiatives that develop multiple transcendence strengths simultaneously offers a promising avenue for supporting holistic student flourishing and academic resilience.

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