

Unpacking the Pedagogical Mechanisms of Storytelling for Empathy Development in Early Childhood: A PRISMA-Based Systematic Review

Marvella Cynthia Dewi* & Farida Kurniawati

Faculty of Psychology, University of Indonesia, Indonesia

*Corresponding email: marvella.cynthia@ui.ac.id

Received: 23 November 2025

Accepted: 06 January 2026

Published: 28 January 2026

Abstract: This systematic literature review synthesizes empirical evidence on how different storytelling modalities, traditional oral storytelling, picture books, drama-based storytelling, digital storytelling, and multisensory approaches support empathy development in children aged 0-8 years. The review maps intervention designs, identifies targeted empathy dimensions, and examines underlying pedagogical mechanisms. Following PRISMA 2020 guidelines, a systematic search was conducted across four academic databases (Taylor & Francis Online, ProQuest, Scopus, and ScienceDirect). Eight peer-reviewed empirical studies met the inclusion criteria and were analyzed using descriptive and thematic synthesis. Storytelling interventions were generally associated with improvements in emotion recognition, perspective-taking, and prosocial tendencies, with stronger effects observed in interactive, moral, and culturally grounded storytelling. Digital and multisensory approaches showed potential to enhance emotional engagement, although evidence remains limited. Storytelling is a developmentally appropriate and promising approach for fostering empathy in early childhood. However, findings should be interpreted cautiously due to methodological heterogeneity. Further longitudinal and rigorously controlled research is needed.

Keywords: storytelling, empathy, early childhood, social emotional learning.

Article's DOI: <https://doi.org/10.23960/jpp.v16i1.pp195-210>

■ INTRODUCTION

Empathy is a core socio-emotional competency that enables children to understand and respond to others' feelings and perspectives. In early childhood, empathic responding is closely linked with prosocial behaviours such as helping, sharing, and comforting, and serves as a foundational asset for children's social adjustment and interpersonal functioning (Takamatsu, 2022). Empirical developmental research shows that empathy is a multidimensional construct comprising affective, cognitive, and behavioural components that jointly support children's prosocial actions and social understanding (Stern et al., 2019). Recent integrative work indicates that empathic capacities begin to consolidate from infancy through the preschool years, underscoring the importance of intentional stimulation during this sensitive developmental window (Davidov et al., 2025).

Developmental research suggests that empathy emerges through a gradual integration of affective resonance and cognitive perspective-taking during early childhood (Simon & Nader-Grosbois, 2021). Affective empathy, reflected in emotional contagion and concern for others, emerges earlier. In contrast, cognitive empathy develops alongside language, theory of mind, and executive functioning during the preschool and early school years. Consequently, pedagogical approaches targeting empathy must align with children's developmental capacities and provide concrete, emotionally salient, and socially meaningful experiences (Cigala & Mori, 2022; Du et al., 2024; Li et al., 2025).

Age-related patterns are well documented: affective empathy emerges early. It may fluctuate with developmental changes, whereas cognitive and behavioural empathy typically increase as children acquire more advanced social

understanding and perspective-taking abilities (Simon & Nader-Grosbois, 2023). Additionally, contextual factors, including preschool type and the daily emotional climate, have been shown to shape empathic development, underscoring the significant role of early educational environments in nurturing children's socio-emotional competencies (Ernst et al., 2022). Together, these findings highlight the need for developmentally appropriate experiences that foster empathy during the foundational early years.

In parallel, empathy has gained prominence within social and emotional learning (SEL) frameworks in early childhood education (ECE). The evidence base for SEL in preschool settings is strengthened by high-quality quantitative syntheses. A comprehensive meta-analysis reported that universal and targeted SEL programs significantly improve young children's behavioural regulation, interpersonal skills, and socio-emotional competencies (Murano et al., 2020). A mapping review by Djamnezhad et al. (2021) further highlights rapid growth in SEL implementation but notes the need for clearer alignment between targeted competencies, such as empathy, emotion understanding, and social problem-solving, and the pedagogical approaches used in early years classrooms. Large-scale reviews highlight persistent variability in the quality of SEL implementation. In early childhood settings, instructional practices often differ substantially across classrooms, and program fidelity remains inconsistent, limiting the potential impact of SEL initiatives (Blewitt et al., 2018; Jones et al., 2019).

Despite the growing emphasis on Social Emotional Learning (SEL) globally, early childhood education settings continue to face persistent challenges, including limited instructional time, insufficient teacher training, and a lack of developmentally appropriate pedagogical tools. Large-scale reviews indicate substantial variability in SEL implementation

quality and program fidelity across early childhood classrooms, which may limit the effectiveness of SEL initiatives (Blewitt et al., 2018; Jones et al., 2019). In Indonesia, SEL implementation in early childhood education remains uneven and is often embedded implicitly rather than systematically within classroom practices, further constraining opportunities for intentional socio-emotional instruction (Safira et al., 2025). These systemic challenges are reflected at the classroom level, where many early-childhood interventions continue to prioritize compliance-oriented behaviour management rather than deeper socio-cognitive and emotional engagement (Djamnezhad et al., 2021; Shi et al., 2022; Simon & Nader-Grosbois, 2021). Such practices may limit children's opportunities to actively engage in perspective-taking and empathic reasoning. This pattern is further reinforced by evidence from the exclusionary discipline literature, which shows that punitive approaches remain widespread in early childhood settings and underscores the importance of proactive, relational, and instructional strategies that support children's social understanding and empathic competencies (Farjam & Emamirizi, 2024; Zinsser et al., 2022). Taken together, these findings highlight the need for low-cost, culturally adaptable, and pedagogically flexible approaches that can be systematically integrated into everyday classroom practices, such as storytelling (Khayankij, 2024; Linarsih et al., 2023).

Within this landscape, storytelling has emerged as a widely used yet methodologically diverse pedagogical practice with strong potential to support empathy-related skills. Narrative experiences place children in emotionally meaningful situations and invite them to infer characters' feelings, intentions, and moral reasoning. Recent systematic reviews and meta-analyses show reliable associations between storybook exposure and empathy-related outcomes, including emotional understanding,

perspective taking, prosocial behaviour, and theory of mind (Batini et al., 2021; Jones et al., 2019; Farjam & Emamirizi, 2024). Experimental studies also demonstrate that narrative engagement, whether through oral storytelling, dialogic reading, dramatized narratives, or digital story media, can improve children's emotion comprehension and prosocial decision-making (Chen et al., 2025; van Huisstede et al., 2024).

At the same time, contemporary research emphasizes that empathy-related outcomes in early childhood are multidimensional and method-sensitive. Evidence from large multi-informant studies shows that parent reports, teacher reports, and child self or task-based measures often produce divergent patterns, suggesting that each method captures only partially overlapping facets of children's prosociality and empathic responding (Blewitt et al., 2018; 'tefan et al., 2022; Sun et al., 2021). Longitudinal research further shows that different components of empathy, such as affective arousal, attention to emotions, and prosocial actions, develop along distinct trajectories during early childhood (Halliday et al., 2025).

Despite growing interest in storytelling-based approaches, including traditional oral stories, shared picture-book reading, drama-based narratives, and newer multisensory or digital formats, the empirical evidence remains fragmented across modalities, age groups, intervention durations, and outcome measures. Meta-analytic findings show substantial heterogeneity in effect sizes depending on the type and context of storybook reading (Ciesielska et al., 2025), while experimental work indicates that picture-book interventions and dramatized storytelling can yield highly variable outcomes depending on narrative structure, facilitation style, and child characteristics (van Huisstede et al., 2024). As a result, educators and researchers may struggle to determine which storytelling features most effectively support affective empathy

and cognitive perspective taking across diverse early childhood contexts.

Therefore, this study aims to identify, categorise, and synthesise empirical storytelling interventions used to enhance empathy in early childhood and to summarise the evidence regarding their effectiveness. Guided by the PRISMA 2020 framework and structured using the PICO approach, to address the identified gaps in the literature, this systematic review is guided by the following research questions:

RQ1: How are different storytelling modalities used to support empathy development in early childhood?

RQ2: Which dimensions of empathy (affective, cognitive, social) are most consistently targeted across storytelling-based interventions?

RQ3: What pedagogical mechanisms underlie the effectiveness of storytelling in fostering empathy among children aged 0-8 years?

■ METHOD

Research Design

This study employed a Systematic Literature Review (SLR) guided by the PRISMA 2020 framework. The design was chosen to allow a transparent, structured, and reproducible synthesis of empirical evidence regarding the influence of storytelling on empathy development in early childhood. The review focused exclusively on peer-reviewed empirical studies to ensure methodological rigor and relevance. Searches were conducted using online access to four major international databases, Taylor & Francis Online, ProQuest, Scopus, and ScienceDirect, selected for their comprehensive coverage of developmental psychology, early childhood education, and storytelling-based interventions.

Search Strategy

A structured search strategy was developed using standardized keywords combined with

Boolean operators (AND, OR, NOT). The main search string used across the databases was:

((empathy OR “empathy development” OR “empathic skills” OR “affective empathy” OR “cognitive empathy” OR “emotional understanding” OR “perspective-taking” OR “prosocial behavior”)

AND (“storytelling” OR “story-based intervention” OR “digital storytelling” OR “multisensory storytelling” OR “narrative-based learning” OR “storytelling program”)

AND (“early childhood” OR preschool OR kindergarten OR “young children” OR “children aged 0-8” OR PAUD OR TK)).

AND (experiment OR intervention OR “educational program” OR “learning activity” OR “teaching method”)*

NOT (adolescent OR teenager OR adult OR “college student” OR “university student” OR “high school” OR “medical student” OR nursing OR “artificial intelligence” OR “machine learning” OR “virtual reality” OR “literary analysis” OR “fiction writing” OR “film” OR “narrative therapy”).

To ensure rigor and relevance, additional filters were applied to limit results to peer-reviewed journal articles, full-text availability, English-language publications, and publications from 2015–2025. The initial search across four major academic databases, Taylor & Francis Online, ProQuest, Scopus, and ScienceDirect, yielded 378 records. After applying database-specific filters, 165 articles remained eligible for title and abstract screening (Table 1).

Table 1. Data source

Database	Initial Hits	Filters Applied	Final Articles	Justification
Taylor & Francis Online	37	Last 10 years, full access, article	12	One of the leading databases in education, early childhood, developmental psychology, and literacy studies, it publishes a substantial proportion of research on storytelling, socio-emotional learning, and pedagogical interventions.
ProQuest	213	Last 10 years, peer-reviewed, full-text, English	84	A multidisciplinary database with broad coverage of education, child development, and the social sciences, highly relevant for capturing diverse empirical studies, including those on storytelling and empathy.
Scopus	8	Last 10 years, article, English, open access	8	One of the largest indexing platforms for high-impact international journals, selected to ensure comprehensive coverage of globally indexed research and to strengthen the academic validity of the review findings.
Science Direct	120	Last 10 years, reviewed and researched articles, open access	61	Contains extensive publications in psychology, education, child development, and neuroscience, particularly useful for identifying studies on empathy mechanisms and storytelling-based interventions.
Total	378	—	165	—

Although the final synthesis included only eight empirical studies, this number does not

indicate a restrictive search strategy. The keyword set was intentionally broad, covering diverse

storytelling modalities (traditional, digital, drama-based, multisensory), various empathy constructs (affective, cognitive, emotional understanding, perspective-taking, prosocial behavior), and multiple early childhood terms. The large initial pool (n = 378) confirms the breadth of the search. The reduction to eight studies primarily occurred because most articles did not involve an empirical storytelling intervention, target children aged 0-8, or assess empathy-related outcomes. Thus, the limited number of included studies reflects the current scarcity of empirical research in this specific domain rather than methodological constraints of the review.

The screening process involved two stages. First, titles and abstracts were reviewed to remove articles unrelated to early childhood, not involving storytelling, or lacking empathy measures. Second, the full-text screening assessed methodological fit, including study design, participant characteristics, the type of

storytelling intervention, and the clarity of the empathy assessment. Studies failing to meet these criteria were excluded. In accordance with PRISMA 2020 procedures, eight studies met all inclusion criteria and were retained for final analysis.

Inclusion and Exclusion Criteria

To enhance the transparency and reproducibility of the review process, predefined inclusion and exclusion criteria were applied during the screening and selection of studies. These criteria guided the identification of relevant empirical research and the elimination of studies that did not align with the scope of the review. For methodological clarity, the complete list of inclusion and exclusion criteria is summarized in Table 2, enabling readers to trace the decision-making process used to determine study eligibility. The PRISMA flow diagram is shown in Figure 1.

Table 2. Inclusion and exclusion criteria

Category	Inclusion Criteria	Exclusion Criteria
Publication Type	Peer-reviewed empirical research articles	Reviews, conceptual papers, meta-analyses, theoretical essays, dissertations, theses
Publication Year	2015-2025	Articles published before 2015
Language	English	Non-English publications
Access	Full-text available	Full text not accessible
Population	Children aged 0-8 years (early childhood)	Studies involving children >8 years, adolescents, adults
Intervention	Storytelling in any form: oral storytelling, read-alouds, drama-based storytelling, picture books, digital storytelling, interactive storytelling, multisensory storytelling	Studies that do not involve storytelling as an intervention or activity
Outcome Measures	Empathy outcomes: affective empathy, cognitive empathy, prosocial empathy, emotional understanding, perspective taking	Studies that do not measure empathy or socio-emotional outcomes
Study Design	Experimental, quasi-experimental, qualitative, mixed method with empathy assessment	Studies without a clear methodology or without an assessment of storytelling effects

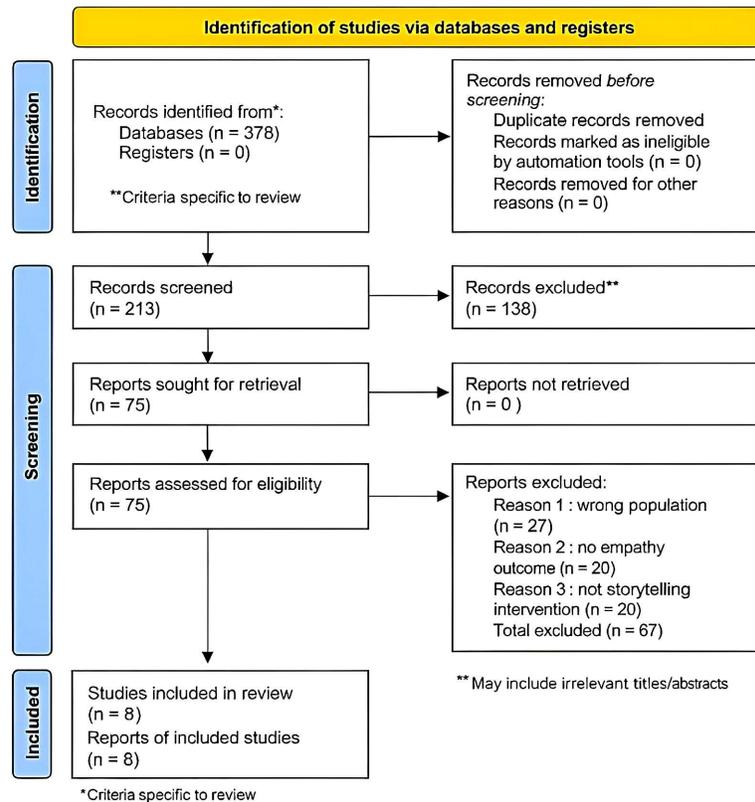


Figure 1. PRISMA flow diagram for the study selection process

Data Analysis

Data extracted from the eligible studies were analyzed using a descriptive and thematic synthesis approach, a commonly used approach in systematic reviews in education and developmental psychology when the heterogeneity of research designs precludes meta-analysis. The analysis aimed to identify patterns, similarities, and divergences across studies regarding how storytelling interventions support the development of empathy in early childhood.

Each study was coded using a predefined extraction framework that included: research design, sample characteristics, type of storytelling intervention, duration and procedure, dimensions of empathy assessed, and key findings. The coding process allowed the reviewers to categorize studies into thematic clusters, particularly based on (a) the modality of storytelling (traditional, digital, drama based, or

multisensory), (b) the methodological rigor of the study (experimental, quasi experimental, mixed method, or qualitative), and (c) the specific empathy outcomes measured (affective, cognitive, or prosocial behavior).

A cross-study comparative analysis was then carried out to synthesize the evidence. This process involved identifying recurring themes, such as the importance of interactive engagement, the role of moral modeling, and the influence of multisensory or technology-enhanced storytelling, while also noting variations attributable to sample size, context, or implementation. The evidence was aggregated narratively to answer the research objective, following the PRISMA 2020 recommendations to ensure transparency and methodological rigor. Potential biases, including the limited number of empirical studies and variations in measurement tools, were also considered when interpreting the overall findings.

Data extraction was conducted independently by the first author using a structured extraction form. To enhance reliability, extraction decisions were cross-checked against predefined criteria and discussed where ambiguity arose. The following variables were systematically extracted from each included study: (1) author(s) and publication year, (2) country and educational context, (3) study design (e.g., quasi-experimental, randomized controlled trial, qualitative study), (4) sample characteristics, including sample size (N) and participant age range, (5) storytelling modality (e.g., traditional oral storytelling, picture books, drama-based storytelling, digital or interactive storytelling, multisensory storytelling), (6) intervention characteristics, including duration, frequency, and implementation setting, (7) empathy-related outcomes measured (affective, cognitive, behavioral, or social empathy), (8) measurement

instruments used, and (9) key findings, including statistical significance and effect sizes where reported.

In addition, a formal assessment of methodological quality and potential risk of bias was conducted for each included study. Experimental and quasi-experimental studies were evaluated using criteria adapted from the Cochrane Risk of Bias framework, including selection bias, performance bias, detection bias, attrition bias, and reporting bias. Qualitative studies were assessed using criteria adapted from the CASP qualitative checklist, focusing on clarity of research aims, appropriateness of methodology, rigor of data analysis, and credibility of findings. Each study was independently categorized as having low, moderate, or high risk of bias. Disagreements were resolved through discussion to ensure consistency in appraisal.

Table 3. Risk of bias

No	Study (Author, Year)	Study Design	Selection Bias	Performance Bias	Detection Bias	Attrition Bias	Reporting Bias	Overall Risk of Bias
1	Yao & Enright (2020)	RCT	Low	Moderate	Low	Low	Low	Low
2	Mori & Cigala (2019)	Quasi-experimental	Moderate	Moderate	Moderate	Low	Low	Moderate
3	Bratitsis & Ziannas (2015)	Case study / quasi-experimental	Moderate	Moderate	Moderate	Moderate	Low	Moderate
4	Law et al. (2017)	Quasi-experimental	Moderate	Moderate	Moderate	Low	Low	Moderate
5	Løkken et al. (2024)	Experimental	Low	Moderate	Moderate	Low	Low	Moderate
6	Wallwork et al. (2024)	Qualitative (thematic analysis)	–	–	–	–	–	Low
7	Hu & Ødemotland (2021)	Qualitative case study	–	–	–	–	–	Moderate
8	Herman et al. (2025)	Quasi-experimental	Moderate	Moderate	Moderate	Low	Low	Moderate

Overall, the methodological quality of the included studies ranged from low to moderate risk of bias. One randomized controlled trial

demonstrated a low overall risk of bias, whereas the majority of quasi-experimental studies showed a moderate risk due to limited

randomization and blinding challenges. Qualitative studies were generally assessed as having low to moderate risk of bias, supported by detailed research aims and rigorous analytical procedures, although transferability was limited by context-specific designs. These findings suggest that while

existing evidence supports the potential of storytelling for empathy development, conclusions should be interpreted cautiously.

Experimental and quasi-experimental studies were assessed using criteria adapted from the Cochrane Risk of Bias framework. Qualitative

Table 4. Risk of bias assessment of included studies (traffic light plot)

Study (Author, Year)	Selection Bias	Performance Bias	Detection Bias	Attrition Bias	Reporting Bias
Yao & Enright (2020)	●	●	●	●	●
Mori & Cigala (2019)	●	●	●	●	●
Bratitsis & Ziannas (2015)	●	●	●	●	●
Law et al. (2017)	●	●	●	●	●
Løkken et al. (2024)	●	●	●	●	●
Wallwork et al. (2024)	-	-	-	-	-
Hu & Ødemotland (2021)	-	-	-	-	-
Herman et al. (2025)	●	●	●	●	●

Legend: Green indicates low risk of bias, yellow indicates moderate risk of bias, red indicates high risk of bias, and dashed cells indicate not applicable for qualitative studies

studies were appraised using adapted CASP criteria and are therefore marked as not applicable for quantitative bias domains. Green indicates a low risk of bias; yellow, a moderate risk of bias. As illustrated in the traffic light plot, most included studies demonstrated a moderate risk of bias, primarily related to limitations in randomization procedures and blinding. Only one randomized controlled trial showed consistently low risk across domains. Qualitative studies generally demonstrated acceptable methodological

rigor, although their findings were context-specific.

■ **RESULT AND DISCUSSION**

Following the study selection process, Figure 2 illustrates the distribution of the included studies across different storytelling modalities.

To further examine patterns across storytelling modalities, empathy dimensions, and study characteristics, Figure 3 provides a visual synthesis of the included studies.

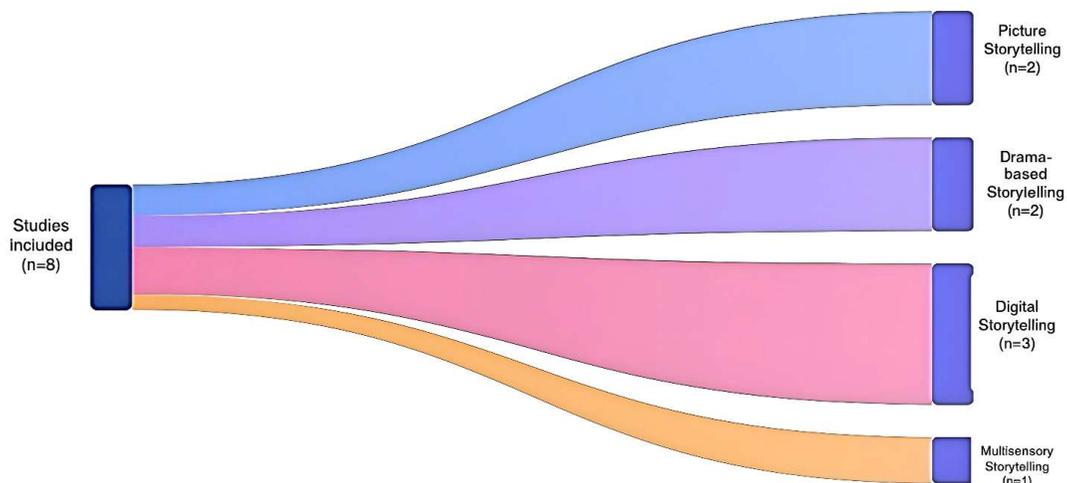


Figure 2. PRISMA-based Sankey diagram illustrating the distribution of included studies by storytelling modality

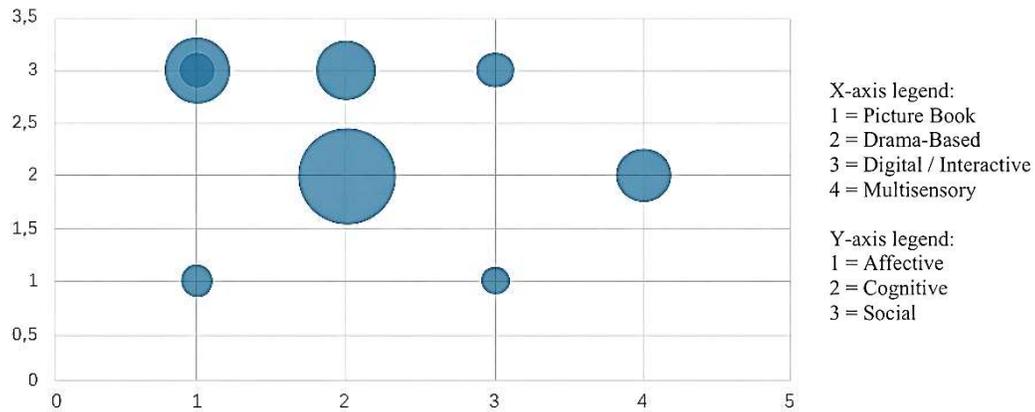


Figure 3. Bubble plot illustrating storytelling modalities and empathy dimensions across included studies

The x-axis represents the storytelling modality, the y-axis the primary empathy dimension targeted, and the bubble size reflects the sample size. Table 5 summarizes the key characteristics and findings of the eight studies included in this systematic review.

Table 5. Synthesis matrix of included study

Author & Year	Design	Sample (N, Age, Country)	Storytelling Modality	Intervention Details	Empathy Measure	Key Findings
Mori & Cigala (2019)	Quasi-experimental	N ≈ preschool children, 3–5 years, Italy	Drama-based storytelling	Role-play and guided discussion based on narrative scenarios	Observational empathy and perspective-taking indicators	Interactive drama activities enhanced children’s perspective-taking and social understanding compared to passive storytelling
Bratitsis & Ziannas (2015)	Quasi-experimental	Kindergarten children, 4–6 years, Greece	Drama-based storytelling	Dramatized moral stories with facilitated reflection	Teacher-rated prosocial and empathic behaviors	Drama-based narratives promoted empathic concern and prosocial responses
Yao & Enright (2020)	Experimental	Kindergarten children, 5–6 years, China	Moral story-based storytelling	Repeated exposure to moral stories emphasizing kindness and fairness	Behavioral sharing and helping tasks	Moral storytelling significantly increased prosocial and empathic behaviors
Law et al. (2017)	Quasi-experimental	Preschool children, 3-5 years, UK	Dialogic picture-book reading	Interactive shared reading with adult questioning	Teacher-report empathy scales	Dialogic reading supported emotional understanding and early

						empathic responding
Herman et al. (2025)	Experimental	Early childhood sample, 4-6 years; Europe	Multisensory storytelling (digital + sensory cues)	Digital stories combined with sensory stimuli (e.g., visual, olfactory cues)	Observational affective empathy indicators	Multisensory engagement heightened emotional arousal and affective empathy
Løkken et al. (2024)	Qualitative	Preschool children, 3-6 years, Norway	Digital interactive storytelling	Interactive digital narratives with child choice-making	Qualitative observation and thematic analysis	Digital storytelling supported emotional engagement but required adult scaffolding
Hu & Ødemotland (2021)	Qualitative	Preschool children, 4-6 years, Norway/China	Culturally grounded storytelling	Storytelling using culturally familiar narratives	Observational and interview-based empathy indicators	Cultural relevance enhanced emotional identification and empathic meaning-making
Van Huisstede et al. (2024)	Experimental	Preschool children, 4-6 years, Netherlands	Picture-book & dramatized storytelling	Shared reading and dramatized story enactment	Multi-informant empathy measures	Effects on empathy varied by narrative structure and facilitation style

RQ1: Storytelling Modalities and Empathy Outcomes

Theme 1: Interactive Engagement

Across the included studies, interactive storytelling modalities, particularly drama-based storytelling, dialogic reading, and interactive digital narratives, were consistently associated with improvements in children's empathy-related outcomes. Studies employing role-play, guided discussion, and participatory narrative activities reported enhanced engagement with characters' emotional states and social situations. Evidence from Mori & Cigala (2019) and Bratitsis & Ziannas (2015) indicates that children exposed to interactive storytelling demonstrated stronger perspective-taking abilities and more adaptive social responses compared to those receiving passive narrative exposure. These effects were most prominent in interventions targeting preschool and early school-aged children.

Interactive engagement appears to support the development of empathy by activating both emotional and cognitive processes through active participation. When children are invited to assume roles, discuss characters' intentions, or make narrative choices, they are required to move beyond emotional resonance toward reflective understanding. This process facilitates perspective shifting, a key developmental mechanism underlying cognitive empathy. From a sociocultural perspective, interactive storytelling functions as a form of guided participation, where adult scaffolding and peer interaction support children's emerging socio-cognitive skills.

Theme 2: Moral and Narrative Modeling

Moral and narrative modeling emerged as a central feature across several storytelling interventions. Studies focusing on moral stories and value-laden narratives reported increases in

children's prosocial behaviors and empathic concern. For example, Yao & Enright (2020) demonstrated that stories emphasizing kindness, fairness, and helping behaviors significantly enhanced children's sharing and supportive responses. Narratives that clearly depicted emotional consequences and moral dilemmas were particularly effective in fostering affective concern and socially appropriate behavior.

Moral and narrative modeling supports the development of empathy through internalization. By repeatedly observing characters experiencing emotional consequences of moral choices, children begin to organize their understanding of emotions, intentions, and social norms. Rather than relying on direct instruction, narrative modeling allows empathy to emerge through identification with characters and reflection on story outcomes. This mechanism aligns with social learning principles, suggesting that storytelling can serve as an implicit yet powerful medium for moral and empathic socialization.

RQ2: Empathy Dimensions Targeted Across Storytelling Interventions

Theme 1: Affective Empathy Enhancement

Affective empathy outcomes were most frequently reported in interventions involving shared picture-book reading and emotionally expressive storytelling. Studies using picture books and shared reading contexts documented increases in children's emotional responsiveness, concern for others, and sensitivity to emotional cues. These outcomes were particularly evident among younger children, for whom emotional contagion and affective resonance are developmentally salient. Visual illustrations, expressive narration, shared emotional attention appeared to facilitate children's immediate emotional engagement with story characters.

Shared picture-book storytelling supports affective empathy by providing concrete and emotionally salient cues that help young children recognize and resonate with others' emotions.

Illustrations, narrative tone, and pacing create emotionally accessible entry points for children who are still developing language and reflective capacities. As such, affective empathy enhancement through picture books may represent an early developmental pathway that lays the groundwork for later cognitive empathy and prosocial reasoning.

Theme 2: Cognitive Empathy and Perspective-Taking

Cognitive empathy and perspective-taking were predominantly targeted in drama-based and discussion-oriented storytelling interventions. Studies incorporating role-play, narrative questioning, and guided reflection reported improvements in children's ability to infer others' thoughts, intentions, and emotional causes. These effects were more consistently observed among older preschool and early school-aged children, whose linguistic and executive functioning skills are more developed.

The emphasis on cognitive empathy in drama-based and dialogic storytelling reflects the developmental importance of language and reflective reasoning during the preschool years. By prompting children to explain characters' motivations and anticipate emotional outcomes, these interventions scaffold the emerging theory of mind and executive functioning skills. This suggests that storytelling modalities emphasizing dialogue and reflection are particularly effective for fostering cognitive dimensions of empathy, especially when supported by adult facilitation.

RQ3: Pedagogical Mechanisms Underlying the Effectiveness of Storytelling

Theme 1: Multisensory Emotional Salience

Several studies highlighted the role of multisensory engagement in enhancing empathy-related outcomes. Interventions incorporating digital media, augmented reality, or sensory cues reported heightened emotional engagement and attention. Studies by Herman et al. (2025) and

Løkken et al. (2024) demonstrated that multisensory storytelling environments increased children's emotional arousal and focus, which were associated with gains in affective empathy.

Multisensory emotional salience appears to support empathy by intensifying emotional arousal and attentional focus, both of which are psychological precursors to affective empathy. Sensory-rich experiences make emotional content more vivid and memorable, facilitating children's attunement to others' feelings. However, heightened engagement alone may not guarantee deeper empathic understanding. The reviewed studies suggest that multisensory approaches are most effective when combined with reflective dialogue and adult scaffolding that help children emotional experiences meaningfully.

Theme 2: Socio-Cognitive Scaffolding

Across storytelling modalities, adult guidance and structured discussion emerged as critical mechanisms for developing empathy. Studies that incorporated explicit questioning, guided reflection, and facilitated discussion reported more consistent empathy-related outcomes than those relying solely on narrative exposure. Socio-cognitive scaffolding was particularly evident in drama-based and interactive storytelling interventions.

Socio-cognitive scaffolding supports empathy development by helping children articulate emotions, connect emotional experiences to social contexts, and reflect on others' perspectives. Through guided questioning and shared reflection, adults help children move from immediate emotional responses to more regulated, cognitively informed empathic understanding. This mechanism underscores the importance of facilitation quality in storytelling-based interventions and aligns with developmental theories emphasizing the role of social interaction in learning.

Taken together, the findings across RQ1-RQ3 indicate that storytelling supports empathy development in early childhood through multiple, interacting pathways. Interactive engagement and moral narrative modeling facilitate perspective-taking and internalization of social values, while multisensory emotional salience enhances affective resonance. These mechanisms operate synergistically, contributing to the development of affective, cognitive, and social empathy. Consistent with the conceptual framework (Figure 4), storytelling emerges not as a unitary instructional method but as a multifaceted pedagogical approach that integrates emotional, cognitive, social, and cultural processes.

Building on the patterns observed in the Sankey diagram and bubble plot, Figure 4 presents a conceptual framework that synthesizes how storytelling supports the development of empathy in early childhood. Across the included studies, diverse storytelling modalities, including picture book, drama-based, digital/interactive, and multisensory storytelling, operate through three central pedagogical mechanisms: interactive engagement, moral and narrative modeling, and multisensory emotional salience. These mechanisms facilitate children's emotional resonance, perspective-taking, and social understanding, which in turn contribute to the development of affective, cognitive, and social empathy. The framework highlights that storytelling functions not merely as a delivery method for content, but as a developmentally appropriate socio-emotional scaffold that integrates emotional experience, narrative meaning-making, and social interaction. By explicitly mapping modalities to mechanisms and empathy outcomes, this framework clarifies the pathways through which storytelling interventions may foster empathy in early childhood and provides a foundation for future empirical testing

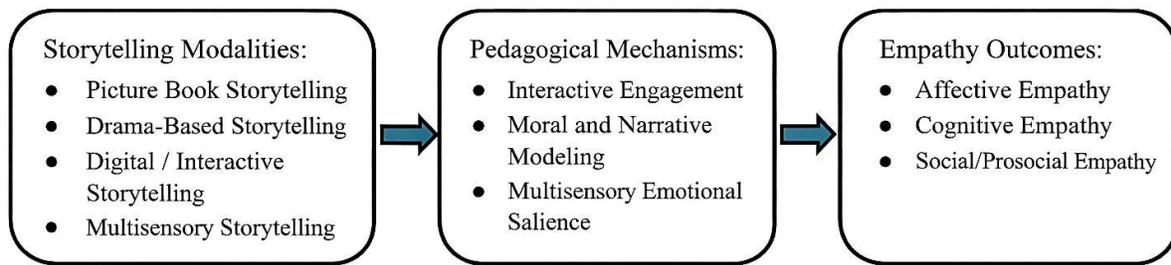


Figure 4. Conceptual framework illustrating mechanisms through which storytelling supports empathy development in early childhood

The framework synthesizes findings from the systematic review, linking storytelling modalities to pedagogical mechanisms and empathy-related outcomes. While this framework integrates consistent patterns across studies, its interpretation should be considered in light of the methodological limitations identified in the reviewed literature. Taken together, these findings reinforce storytelling as a developmentally grounded and pedagogically flexible approach for fostering empathy in early childhood education.

The included studies demonstrate several methodological strengths, including diverse storytelling modalities, both quantitative and qualitative designs, and a focus on developmentally relevant empathy outcomes in early childhood. Together, these features provide a rich descriptive foundation for understanding how storytelling interventions are implemented across varied educational contexts.

Nevertheless, several methodological limitations should be acknowledged. First, many studies relied on relatively small sample sizes, which may limit statistical power and reduce the generalizability of reported effects. Second, intervention durations were often short, ranging from single-session exposures to brief multi-session programs, constraining the ability to assess the sustainability of empathy-related outcomes over time.

Third, standardized, validated empathy measures were used infrequently across studies. A wide range of outcome indicators, including observational ratings, task-based assessments, and teacher or parent reports, were employed,

making direct comparison across studies challenging and increasing the risk of measurement-related bias. Fourth, the evidence base was dominated by quasi-experimental designs, with relatively few randomized controlled trials. While quasi-experimental approaches offer valuable ecological validity in educational settings, they are more vulnerable to selection bias and confounding variables.

Taken together, these methodological characteristics suggest that the findings of this review should be interpreted cautiously. Although consistent patterns emerged across studies, stronger causal inferences will require future research employing larger samples, more extended intervention periods, standardized empathy measures, and more rigorous experimental designs.

Several limitations should be acknowledged. Although this review included studies involving children aged 0-8 years, the heterogeneity of age ranges across studies limited the ability to conduct age-specific subgroup analyses. Given that empathy development differs substantially between toddlers, preschoolers, and early school-age children, future research should employ more age-differentiated designs. This limitation should be considered when interpreting the generalizability of the findings.

■ CONCLUSION

This systematic review concludes that storytelling, across traditional, dramatized, digital, and multisensory formats, positively supports the development of affective and cognitive empathy

in children aged 0-8 years. Across the eight included empirical studies, three consistent pedagogical mechanisms were identified: (1) interactive engagement, which facilitates perspective-taking, (2) moral and culturally grounded narratives, which guide children's empathic reasoning, and (3) sensory or digital enhancements, which heighten emotional salience. Together, these findings demonstrate that storytelling functions as a developmentally appropriate socio-emotional scaffold through which young children learn to recognize emotions and understand others' perspectives.

Despite these positive patterns, the current evidence base remains constrained by small sample sizes, short intervention durations, and heterogeneous empathy measurement tools. Future research would benefit from longitudinal designs, standardized and multi-method empathy assessments, and direct comparisons across storytelling modalities to strengthen causal inference. Taken together, the findings suggest that storytelling represents a low-cost, flexible, and pedagogically robust approach for fostering empathy in early childhood, with strong potential for broader integration into social-emotional learning frameworks and early childhood education practice.

■ REFERENCES

- Batini, F., Luperini, V., Cei, E., Izzo, D., & Toti, G. (2021). The association between reading and emotional development: a systematic review. *Journal of Education and Training Studies*, 9(1), 12–48. <https://doi.org/10.11114/jets.v9i1.5053>
- Blewitt, C., Fuller-Tyszkiewicz, M., Nolan, A., Bergmeier, H., Vicary, D., Huang, T., McCabe, P., McKay, T., & Skouteris, H. (2018). Social and emotional learning associated with universal curriculum-based interventions in early childhood education and care centers: a systematic review and meta-analysis. *JAMA Network Open*, 1(8), e185727. <https://doi.org/10.1001/jamanetworkopen.2018.5727>
- Bratitsis, T., & Ziannas, P. (2015). From early childhood to special education: interactive digital storytelling as a coaching approach for fostering social empathy. *Procedia Computer Science*, 67, 231–240. <https://doi.org/10.1016/j.procs.2015.09.267>
- Chen, H., Lyu, D., & Zhu, L. (2025). The effectiveness of social-themed picture book reading in promoting children's prosocial behavior. *Frontiers in Psychology*, 16. <https://doi.org/10.3389/fpsyg.2025.1569>
- Ciesielska, M., Kucirkova, N., & Thomson, J. (2025). How the type and context of children's storybook reading relate to select empathy skills: a meta-analysis. *Early Education and Development*, 36(8), 1888–1914. <https://doi.org/10.1080/10409289.2025.2516989>
- Cigala, A., & Mori, A. (2022). Perspective taking ability in psychologically maltreated children: a protective factor in peer social adjustment. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.8165>
- Davidov, M., Roth-Hanania, R., Paz, Y., Orlitsky, T., Uzefovsky, F., & Zahn-Waxler, C. (2025). Empathy development from birth to three: Advances in knowledge from 2000 to 2025. *Infant Behavior and Development*, 81. <https://doi.org/10.1016/j.infbeh.2025.102144>
- Djamnezhad, D., Koltcheva, N., Dizdarevic, A., Mujezinovic, A., Peixoto, C., Coelho, V., Achten, M., Kolumbán, E., Machado, F., & Hofvander, B. (2021). Social and emotional learning in preschool settings: a systematic map of systematic reviews. In *Frontiers in Education* (Vol. 6). Frontiers Media S.A. <https://doi.org/10.3389/feduc.2021.691670>
- Du, J., Liang, Y., Guo, D., & Xiao, Y. (2024). The relationship between theory of mind and moral sensitivity among Chinese preschool children: the mediating role of empathy. *BMC Psychology*, 12(1). <https://doi.org/10.1186/s12975-024-00000-0>

- /doi.org/10.1186/s40359-024-01600-4
- Ernst, J., Curran, C., & Budnik, L. (2022). Investigating the impact of preschool type on young children's empathy. *Sustainability (Switzerland)*, *14*(15). <https://doi.org/10.3390/su14159320>
- Farjam, N. K., & Emamirizi, K. (2024). The effectiveness of social-emotional competence training on social skills and empathy of preschool children. *International Journal of Education and Cognitive Sciences*, *5*(3), 69–77.
- Halliday, S. E., Dahinden, F. M., & Hascher, T. (2025). Prosocial behavior in early childhood across boys and girls: associations among parent- and teacher-report and child behavior on the dictator game. *Early Education and Development*, *36*(2), 410–430. <https://doi.org/10.1080/10409289.2024.2389370>
- Herman, H., Hasan, M., & Ahmar, A. S. (2025). Integrating social learning and experiential learning theories: a novel augmented reality approach to enhancing social skills in early childhood education. *Cogent Education*, *12*(1). <https://doi.org/10.1080/2331186X.2025.2556889>
- Hoffman, M. L. (2000). *Empathy and moral development implications for caring and justice*.
- Hu, A., & Ødemotland, S. (2021). Fostering cultural sustainability in early childhood education through a neighbourhood project. *Sustainability (Switzerland)*, *13*(9). <https://doi.org/10.3390/su1309520>
- Jones, S. M., McGarrah, M. W., & Kahn, J. (2019). Social and emotional learning: a principled science of human development in context. *Educational Psychologist*, *54*(3), 129–143. <https://doi.org/10.1080/00461520.2019.1625776>
- Khayankij, S. (2024). Teachers' perspectives of, and strategies for, promoting the social and emotional learning of preschoolers: a comparative study of thailand and the republic of korea. *Humanities, Arts and Social Sciences Studies*. <https://so02.tci-thaijo.org/index.php/hasss>
- Law, Y. K., Lam, S. F., Law, W., & Tam, Z. W. Y. (2017). Enhancing peer acceptance of children with learning difficulties: classroom goal orientation and effects of a storytelling programme with drama techniques. *Educational Psychology*, *37*(5), 537–549. <https://doi.org/10.1080/01443410.2016.1214685>
- Li, Z., Li, B., Tsou, Y. T., Frijns, J. H. M., Meng, Q., Yuen, S., Wang, L., Liang, W., & Rieffe, C. (2025). Empathy development in preschoolers with/without hearing loss and its associations with social-emotional functioning. *Research on Child and Adolescent Psychopathology*, *53*(2), 179–192. <https://doi.org/10.1007/s10802-024-01271-0>
- Linarsih, A. R. M., Yuniarni, D., & Miranda, D. (2023). *Implementasi pendekatan saintifik untuk menginternalisasi nilai cinta damai bagi anak usia dini* [implementing a scientific approach to internalize the value of peace and love for early childhood]. *Jurnal Obsesi/: Jurnal Pendidikan Anak Usia Dini*, *7*(2), 1745–1753. <https://doi.org/10.31004/obsesi.v7i2.3912>
- Løkken, I. M., Campbell, J. A., Dale, P. S., & Kucirkova, N. I. (2025). Exploring the sense of smell in shared digital book reading: An experiment. *International Journal of Educational Research Open*, *8*. <https://doi.org/10.1016/j.ijedro.2024.100430>
- Mori, A., & Cigala, A. (2019). 'Putting oneself in someone else's shoes during childhood: How to learn it' Training for preschool age children. *British Journal of Educational Psychology*, *89*(4), 750–766. <https://doi.org/10.1111/bjep.12255>

- Murano, D., Sawyer, J. E., & Lipnevich, A. A. (2020). A meta-analytic review of preschool social and emotional learning interventions. *Review of Educational Research*, 90(2), 227–263. <https://doi.org/10.3102/0034654320914743>
- Safira, S., Mauliyah, A., & Wahyudi, M. (2025). Application of storytelling method in literacy teaching to support early childhood social-emotional support in kindergarten kb darusalam. *Jurnal Smart Paud*, 8(1), 106–118.
- Shi, J., Cheung, A. C. K., & Ni, A. (2022). The effectiveness of promoting alternative thinking strategies program: a meta-analysis. In *Frontiers in Psychology* (Vol. 13). Frontiers Media S.A. <https://doi.org/10.3389/fpsyg.2022.1030572>
- Simon, P., & Nader-Grosbois, N. (2023). Empathy in preschoolers: exploring profiles and age- and gender-related differences. *Children*, 10(12). <https://doi.org/10.3390/children10121869>
- Simon, P., & Nader-Grosbois, N. (2021). Preschoolers' empathy profiles and their social adjustment. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.782500>
- ‘tefan, C. A., Dănilă, I., & Cristescu, D. (2022). Classroom-Wide school interventions for preschoolers' social-emotional learning: a systematic review of evidence-based programs. In *Educational Psychology Review* (Vol. 34, Issue 4, pp. 2971–3010). Springer. <https://doi.org/10.1007/s10648-022-09680-7>
- Stern, J. A., Botdorf, M., Cassidy, J., & Riggins, T. (2019). Empathic responding and hippocampal volume in young children. *Developmental Psychology*, 55(9), 1908–1920. <https://doi.org/10.1037/dev0000684>
- Sun, Y., Lamoreau, R., O'connell, S., Horlick, R., & Bazzano, A. N. (2021). Yoga and mindfulness interventions for preschool-aged children in educational settings: A systematic review. In *International Journal of Environmental Research and Public Health* (Vol. 18, Issue 11). MDPI AG. <https://doi.org/10.3390/ijerph18116091>
- Takamatsu, R. (2022). Empathy and group processes in Japanese preschool children: The odd one out among friends receives less empathic concern than out-groups. *Journal of Experimental Child Psychology*, 221. <https://doi.org/10.1016/j.jecp.2022.105460>
- Van Huisstede, L., Marley, S. C., Bernstein, K. A., Pierce-Rivera, M., Schmidt, A., Millinger, J., Kelley, M. F., Restrepo, M. A., & Vargas Cesario, C. (2024). Drama during story time supports preschoolers' understanding of story character feeling states. *Journal of Early Childhood Literacy*. <https://doi.org/10.1177/14687984241240413>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press
- Wallwork, S. B., Nichols, S., Jordan, A., Noel, M., Madden, V. J., & Lorimer Moseley, G. (2024). Harnessing children's picture books to socialize children about pain and injury: a qualitative study. *Journal of Pain*, 25(8). <https://doi.org/10.1016/j.jpain.2024.03.016>
- Yao, Z., & Enright, R. (2020). The influence of moral stories on kindergarteners' sharing behaviour*. *Early Child Development and Care*, 190(6), 891–901. <https://doi.org/10.1080/03004430.2018.14990>
- Zinsser, K. M., Silver, H. C., Shenberger, E. R., & Jackson, V. (2022). A systematic review of early childhood exclusionary discipline. *Review of Educational Research*, 92(5), 743–785. <https://doi.org/10.3102/00346543211070047>