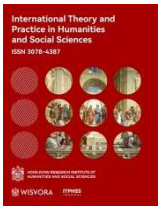
WISVORA

International Theory and Practice in Humanities and Social Sciences
2025 Volume2,Issue6 ISSN 3078-4387



The Role of Intrinsic Motivation in Enhancing Deep Learning in Early Childhood Education

Xinxin Wang[1] Chen Wang[2*] Tao Guo[3] Pingzhi Ye[1]

[1]Guangzhou University, Guangzhou, China
[2]Guangzhou Preschool Teachers College, Guangzhou, China
[2]Shenzhen Ronghu Shiji Kindergarten?, Shenzhen, China

Accepted

2025-5-22

Keywords

Intrinsic Motivation, Deep Learning, Early Childhood Education, Self-Determination Theory, Play-Based Learning

Corresponding Author

Chen Wang

https://doi.org/10.70693/itphss.v2i6.847

Abstract

This study investigates the role of intrinsic motivation in enhancing deep learning in early childhood education (ECE), a critical period for cognitive, emotional, and social development. Intrinsic motivation, driven by children's natural curiosity and desire to explore, is essential for fostering active engagement, critical thinking, and problem-solving abilities. However, as children progress through their educational journey, intrinsic motivation often diminishes in favor of extrinsic rewards, leading to surface-level learning. This research, grounded in Self-Determination Theory (SDT), examines how meeting children's psychological needs—autonomy, competence, and relatedness—supports intrinsic motivation in preschool classrooms. Through case studies, this paper highlights various teaching strategies, including inquiry-based learning, emotional support, play-based exploration, and collaborative learning, that promote intrinsic motivation and deepen engagement with academic content. The study's findings underscore the importance of creating supportive learning environments that nurture intrinsic motivation, contributing to children's long-term academic success and personal development. Practical recommendations for educators and policymakers are provided, focusing on curriculum design, teacher-student interactions, and fostering autonomy-supportive practices in the classroom. Ultimately, the research emphasizes the crucial role intrinsic motivation plays in creating lasting, meaningful learning experiences, laying the foundation for lifelong learning.

1. Introduction

Early childhood education (ECE) represents a foundational stage in human development, shaping children's cognitive, emotional, and social capacities in ways that influence their long-term academic and life outcomes (Piaget, 1972). During this critical period, learning is predominantly fueled by intrinsic motivation—the innate curiosity, interest, and satisfaction children experience when exploring, asking questions, and solving problems (Ryan & Deci, 2000). This internal drive is vital for early learning, as it encourages children to actively engage with their environment and develop essential competencies such as critical thinking, creativity, and problem-solving. However, as children progress through formal education systems, intrinsic motivation often declines, gradually replaced by extrinsic motivators such as grades, praise, and competition (Deci & Ryan, 2000). This shift in motivational orientation can have far-reaching consequences. When

children become more focused on external outcomes, their engagement tends to become more superficial—emphasizing task completion and fact memorization rather than deep understanding. As a result, opportunities for deeper learning and personal growth are diminished. Preserving and nurturing intrinsic motivation during early childhood is thus essential to fostering long-term engagement and deeper cognitive and emotional investment in learning.

Deep learning, in contrast to surface learning, involves sustained inquiry, meaningful connection-making, and the application of knowledge across contexts (Biggs, 2003). It requires children not only to remember information but to integrate it with prior experiences, critically analyze new ideas, and use this knowledge to solve problems creatively. In this sense, deep learning cultivates not just academic skills but also social-emotional resilience, collaboration, and lifelong learning dispositions (Vygotsky, 1978). Because intrinsic motivation drives the self-directed exploration and effortful thinking that deep learning demands, understanding how to cultivate this form of motivation in early childhood settings is a critical concern for educators and policymakers.

Accordingly, this study explores how intrinsic motivation can be nurtured in preschool classrooms and how it contributes to both academic and social-emotional development in early learners. Grounded in Self-Determination Theory (SDT), the research seeks to offer both theoretical insight and practical guidance for early childhood educators. Specifically, the study is guided by the following research questions:

Q1: How does intrinsic motivation contribute to deep learning in early childhood education?

Q2: What teaching strategies can educators use to foster intrinsic motivation in preschool classrooms?

Q3: How can environments be designed to support intrinsic motivation and encourage deeper engagement in learning activities?

By addressing these questions, the paper aims to provide a coherent framework for supporting deep, meaningful learning through the cultivation of intrinsic motivation, ultimately promoting lifelong learning and holistic development among young children.

2. Literature Review

2.1 Intrinsic motivation in early childhood education

Intrinsic motivation refers to the inherent desire to engage in activities for the pleasure and satisfaction derived from the activity itself, rather than for external rewards such as grades, praise, or prizes (Deci & Ryan, 1985). In early childhood education (ECE), this form of motivation serves as a foundational pillar in fostering a lifelong love of learning. Studies consistently show that intrinsically motivated children demonstrate greater curiosity, persistence, and enthusiasm when engaging in learning tasks (Ryan & Deci, 2000). Their natural inquisitiveness drives them to explore their environments, ask questions, and seek out answers, leading to the development of essential cognitive skills such as problem-solving, critical thinking, and creativity (Piaget, 1972; Schunk, Pintrich, & Meece, 2008).

However, longitudinal research indicates that intrinsic motivation tends to decline as children transition into more structured educational environments, where extrinsic motivators such as

standardized assessments and performance-based recognition increasingly dominate (Grolnick & Ryan, 1989). This shift may inadvertently discourage deep engagement and reduce learners' autonomy and sense of agency. Deci and Ryan's (2000) Self-Determination Theory (SDT) posits that the undermining of intrinsic motivation occurs when external pressures inhibit the satisfaction of basic psychological needs — namely, autonomy, competence, and relatedness. Recent studies have emphasized that this decline in motivation is not culturally uniform. For example, Jang et al. (2016) found that in East Asian contexts, where educational systems often emphasize compliance and high-stakes testing, children exhibit lower levels of self-directed motivation compared to those in Scandinavian countries, where learner autonomy and child-centered curricula are prioritized. Similarly, Chirkov (2017) explored the cultural universality and variability of SDT, demonstrating that although the need for autonomy is globally significant, its expression is shaped by cultural values and norms. These findings highlight the importance of adapting motivational strategies to diverse cultural settings within early childhood classrooms.

2.2 Intrinsic motivation and deep learning

Deep learning is characterized by meaningful engagement with learning content, including the integration of new information with existing knowledge, critical evaluation, and application in varied contexts (Biggs, 2003). This contrasts with surface learning, which focuses on memorization and passive information intake. According to Ryan and Deci (2000), intrinsically motivated learners are more likely to engage in deep learning because they are driven by interest and internal goals rather than external performance metrics. Vygotsky's (1978) sociocultural theory further supports this by emphasizing that meaningful learning emerges from active engagement in socially and culturally relevant tasks.

A significant body of research supports the connection between intrinsic motivation and higher-order cognitive processes. Bloom's Taxonomy (1956), later revised by Anderson and Krathwohl (2001), categorizes learning outcomes from basic recall to complex tasks like analysis and evaluation. Children motivated by intrinsic interest are more likely to reach these higher levels of cognitive engagement. For instance, a child curious about how shadows work might not only observe light and shadow play but also design informal experiments, reflect on outcomes, and discuss their reasoning with peers—hallmarks of deep learning.

Emerging technologies are also playing a growing role in shaping motivational dynamics in early education. Ahn, Cunningham, and Miller (2021) found that digital storytelling tools, when used in autonomy-supportive ways, enhance children's intrinsic engagement with narrative construction and comprehension tasks. Similarly, Barzilai and Blau (2020) highlight how digital learning environments that support learner autonomy—such as gamified platforms or exploratory apps—can increase intrinsic interest in academic content. These findings suggest that digital tools, if designed and implemented thoughtfully, can support deep learning by satisfying children's psychological needs.

2.3 Impact of extrinsic motivation on learning

While extrinsic motivation can serve as a short-term catalyst for performance, it often undermines sustained, meaningful learning. The Overjustification Effect (Deci & Ryan, 1985) explains how

the introduction of external rewards for intrinsically enjoyable tasks can reduce the internal drive to engage in those tasks. When the focus shifts from the activity to the reward, learners may disengage once the incentive is removed. Empirical research by Deci et al. (1999) confirms that contingent rewards tend to diminish intrinsic motivation, particularly when they are perceived as controlling.

This issue is particularly salient in early childhood, where children's motivation is still being shaped. Ginsburg (2007) warned that overreliance on extrinsic rewards can diminish children's capacity for independent exploration and reflective thought. More recent research by Lin et al. (2021) found that children in classrooms emphasizing performance-based rewards displayed lower levels of creativity and persistence compared to peers in autonomy-supportive environments. These findings reinforce the importance of structuring educational experiences that promote self-determination, rather than external compliance, particularly in early childhood.

2.4 Strategies for nurturing intrinsic motivation in early childhood education

To counteract the negative effects of extrinsic motivators and cultivate intrinsic motivation, educators can employ several evidence-based strategies. One of the most effective is play-based learning, which allows children to explore their interests in a low-pressure, autonomy-rich environment. Ginsburg (2007) and Bodrova and Leong (2007) argue that play facilitates experimentation, creativity, and independent thinking — all of which are linked to intrinsic motivation. In recent years, play-based curricula have been supported by neurocognitive research demonstrating how self-directed play enhances executive functioning and emotional regulation (Whitebread et al., 2017).

Inquiry-based learning also plays a vital role in fostering intrinsic motivation. In this approach, children are encouraged to pose questions, test hypotheses, and reflect on outcomes. Such methods promote both autonomy and competence by positioning the child as an active co-constructor of knowledge. As documented by van der Veen et al. (2018), inquiry-based science activities in preschool settings lead to higher engagement levels, especially when teachers act as facilitators rather than directors. Providing children with choices is another essential strategy. Reeve (2009) found that opportunities for choice in early education significantly increase intrinsic motivation by supporting autonomy. Importantly, the choices offered must be meaningful and developmentally appropriate. For example, offering a child the choice between drawing or building when exploring the concept of measurement enhances engagement far more than offering trivial or irrelevant options. Additionally, creating a supportive emotional climate is indispensable. According to Grolnick and Ryan (1989), a secure and emotionally responsive classroom enhances feelings of relatedness, which in turn fuels motivation. When children feel respected and connected to their teachers and peers, they are more likely to take intellectual risks and persist through challenges. This assertion is supported by more recent findings from Chen, Wang, and Li (2020), who found that warmth and responsiveness from educators were strongly correlated with increased motivation and self-regulation in preschool-aged children across both collectivist and individualist cultures.

2.5 The Role of emotions and social context in intrinsic motivation

Emotional and social dimensions are increasingly recognized as integral to motivation. Children

are not merely cognitive processors — they are emotional beings whose learning is shaped by feelings of safety, joy, and belonging. When educators provide encouragement, validate children's efforts, and help them navigate frustration, they foster resilience and a growth mindset (Dweck, 2006). Research by McDowell and Gauvain (2018) demonstrates that emotion coaching in preschool classrooms is associated with increased self-regulated learning and sustained attention — both markers of deep learning. Collaborative learning also promotes intrinsic motivation by enhancing relatedness. Children working together on shared tasks—such as constructing models, role-playing, or storytelling—develop social bonds that reinforce their interest and investment in learning activities. Vygotsky (1978) emphasized the role of peer interaction in scaffolding new cognitive abilities, and more recent research by Pino-Pasternak and Whitebread (2019) illustrates how peer-supported problem-solving increases both motivation and metacognitive awareness.

In summary, intrinsic motivation is a multifaceted construct deeply tied to emotional, social, and cognitive development. Strategies such as play-based and inquiry-based learning, autonomy support, emotional scaffolding, and collaborative experiences converge to promote deep, sustained engagement in learning. Incorporating recent research on digital tools, cultural perspectives, and emotional safety broadens the traditional scope of SDT and offers a more comprehensive understanding of how educators can nurture meaningful learning from the earliest years.

3. Methodology and Procedures

3.1 Data collection

This study adopted a qualitative research design, utilizing a multiple-case study approach to explore how intrinsic motivation fosters deep learning in preschool settings. According to Creswell (2013), qualitative case studies offer nuanced insights into complex phenomena by allowing researchers to investigate behaviors and interactions within authentic, real-life contexts. In this study, the cases selected represent preschool classrooms where teachers intentionally implemented strategies aligned with Self-Determination Theory (SDT), focusing on autonomy, competence, and relatedness (Ryan & Deci, 2000).

Data were gathered from four diverse preschool classrooms across urban and suburban areas to reflect varied cultural, socioeconomic, and institutional contexts. Participant demographics—including age (children aged 4 to 6), gender balance, teacher experience, and school type (public/private)—were documented in a summary table (provided in Table 1). Selection criteria for each case included: (1) the teacher's demonstrated use of autonomy-supportive instructional methods, (2) the classroom's demographic diversity, and (3) administrative approval for extended observation access.

Case	School Type	Location	Number of Children	Age Range (Years)	Gender Ratio (Boys:Grils)	Lead Teacher Experiences (Years)
1	Public	Urban	32	4-5	5:3	12
2	Private	Suburban	16	5-6	7:9	7
3	Public	Urban	30	4-6	1:1	15

4	Private	Suburban	17	5-6	8:9	5

The data collection period spanned 6–8 weeks per classroom, enabling the researchers to observe a broad range of pedagogical strategies and their longitudinal impact on children's engagement and learning behaviors. Observations focused on how teachers structured activities, scaffolded autonomy, provided emotional and cognitive support, and facilitated social interactions. These field notes captured not only instructional methods but also children's verbal and non-verbal responses, persistence, enthusiasm, and peer collaboration (Patton, 2002).

To deepen and triangulate findings, semi-structured interviews were conducted with each classroom's lead teacher. Interview protocols followed Rubin and Rubin's (2012) guidelines and included questions on the teacher's understanding of intrinsic motivation, classroom strategies employed, and challenges encountered in maintaining student engagement. Teachers were encouraged to reflect on both successful and less successful experiences to avoid positivity bias and reveal areas for instructional improvement (Seidman, 2013). The interviews offered critical context to interpret classroom behaviors and instructional choices. In addition to teacher input, child-centered methods were incorporated to enhance methodological inclusiveness. Drawing activities and short, developmentally appropriate conversations with children were used to explore their perspectives on learning tasks, preferences, and classroom experiences. This component helped balance adult-reported data and added an important dimension to understanding how children interpreted autonomy, competence, and support in their own terms.

3.2 Data analysis

The data were analyzed using thematic analysis grounded in Self-Determination Theory (SDT), as outlined by Braun and Clarke (2006). This approach enabled the identification of recurring themes related to autonomy, competence, relatedness, and emotional support across all data sources. The coding process followed both deductive (theory-driven) and inductive (data-driven) pathways, allowing researchers to capture both expected and emergent patterns.

Initial codes were organized according to SDT's three psychological needs, with subthemes developed for specific teacher behaviors, child responses, and contextual influences. The analysis also paid particular attention to emotionally significant moments, such as expressions of frustration, joy, persistence, or withdrawal. These instances were examined to understand how classroom climate and teacher response influenced children's motivation and engagement. Additionally, moments where strategies failed—such as when children disengaged or resisted autonomy—were analyzed for underlying causes, including environmental constraints (e.g., overstimulation, lack of materials), teacher uncertainty, or peer dynamics.

To ensure credibility and reliability, data triangulation was conducted across observation notes, interview transcripts, and child-generated input. For example, if a teacher reported using open-ended questioning to support autonomy, the researchers cross-checked this claim against field notes and children's responses to confirm consistency. Triangulation not only reinforced the trustworthiness of individual findings but also facilitated a more holistic understanding of how motivational strategies functioned across multiple classroom layers (Patton, 2002).

3.3 Ethical considerations

Given the sensitivity of working with young children, strict ethical protocols were maintained throughout the research process. Written informed consent was obtained from parents or guardians for each child participant, and teachers provided formal agreement to participate. Additionally, child assent was secured through age-appropriate explanations, ensuring that children were aware of their right to opt out at any time without penalty.

Researchers remained unobtrusive during observations, maintaining a non-disruptive presence in the classroom and using pseudonyms for all participants to ensure confidentiality. All interview and observational data were securely stored and anonymized during analysis and reporting.

In moments where children experienced emotional difficulty—such as during a challenging task or peer conflict—teachers and researchers applied responsive strategies such as emotional coaching, guided withdrawal from the task, or peer mediation. These moments were carefully documented, not only to uphold ethical standards but also to analyze how emotional support shaped motivational resilience. Ethical reflections on how motivational strategies impacted children's emotional well-being were integrated into the thematic analysis, contributing to a more ethically informed interpretation of the findings.

4. Results

4.1 Case study 1: inquiry-based learning

In the first case study, an inquiry-based learning approach was utilized to promote intrinsic motivation in preschool children. The central inquiry question, "Why do plants need sunlight?" served as the foundation for an engaging six-week project. The children were tasked with planting seeds in pots, some placed in direct sunlight while others were placed in shaded areas. Over the course of the experiment, the children monitored the growth of the plants, recording changes such as plant height, leaf color, and general health. During observations, children actively engaged with the task, noting their observations and asking questions like, "What happens if the plants don't get enough sunlight?" This curiosity-driven inquiry was further highlighted by one child, Emma, who stated, "I want to see if the plants will grow better in the sun because plants need light, right?"

The teacher adopted a facilitative approach, providing minimal direct instruction and instead fostering autonomy by encouraging the children to make decisions and explore different variables. For example, the children were asked whether adjusting light exposure or changing watering schedules might affect plant growth. The teacher emphasized the importance of discovery through questioning, explaining in a follow-up interview, "I want them to think like scientists, where they make observations, ask questions, and come up with conclusions. I believe it's important that they don't just receive answers, but instead explore and find things out on their own."

This instructional intent was further supported by data from child-centered interviews. One child, Leo, explained in a drawing activity that "plants are like us, they need food and light," reflecting internalized conceptual understanding. These responses, documented using age-appropriate conversation protocols and thematic visual coding, enriched the triangulation of observational and interview data.

The observational data, supported by teacher and child input, revealed that this sense of autonomy was pivotal in fostering intrinsic motivation. Children showed sustained interest and involvement throughout the project, making connections between their observations and broader concepts. The freedom to experiment and explore independently allowed them to feel competent and capable, fueling their intrinsic motivation to continue learning. This case reinforces the critical role of autonomy in promoting intrinsic motivation and deep learning, as children who are given the freedom to explore, question, and make decisions are more likely to engage deeply and meaningfully in the learning process.

4.2 Case study 2: emotional support and positive feedback

In the second case study, emotional support and positive feedback were key strategies used to foster intrinsic motivation during a puzzle-solving activity. The children were tasked with completing a large, challenging puzzle that required problem-solving skills, persistence, and patience. Some children initially struggled with the task, showing signs of frustration as they attempted to fit the pieces together. During these moments, the teacher intervened with encouragement, focusing on effort rather than results. For example, when one child, Tom, expressed frustration, the teacher reassured him, saying, "You're doing a great job trying different pieces, keep going, you're almost there!" Another child, Lily, was reassured with, "It's okay to feel frustrated, but you're learning and trying new ways to make it work." The teacher's feedback focused on the process rather than simply rewarding the end result. She guided the children with suggestions such as, "Let's try looking for pieces with straight edges first, that might help," helping them navigate the task while building a sense of competence. The teacher's emphasis on effort and perseverance allowed the children to view challenges as opportunities to learn, rather than obstacles. This approach helped children build resilience and motivation to continue, even when faced with difficult tasks.

This instructional approach was contextualized through semi-structured teacher interviews. The teacher reflected, "It's not just about finishing the puzzle—it's about how they feel when they keep going. I want them to see that they can figure things out when it's hard." Complementing these adult perspectives, brief child interviews asked, "How did you feel when the puzzle didn't fit?" or "What did you do next?" Most children responded with phrases indicating emotional regulation and strategy use, e.g., "I tried again," or "I looked for the corner."

Through the combination of emotional support, process-oriented feedback, and scaffolded persistence, the children developed a growth mindset, learning to value persistence over immediate success. As they continued to work through the puzzle, they became more confident in their problem-solving abilities. The teacher's approach allowed the children to experience success through their own efforts, which greatly enhanced their intrinsic motivation. This case underscores the importance of emotional support and positive reinforcement in fostering intrinsic motivation, showing that when children feel supported and encouraged to persist, their motivation and engagement with the task increase significantly.

4.3 Case study 3: play-based learning and exploration

The third case study examined the role of play-based learning in fostering intrinsic motivation. The children were provided with a variety of open-ended materials, such as building blocks, art

supplies, and sensory materials like sand and water. One child, Sam, chose to build a tower with blocks. Initially, the tower kept toppling over, leading to frustration. However, Sam persisted, experimenting with different ways to stack the blocks. With time, he successfully constructed a stable tower, feeling a sense of accomplishment. Throughout the activity, the teacher offered minimal guidance, providing encouragement such as, "You're making great progress, keep going!" and "What happens when you try stacking the blocks differently?" This approach allowed Sam to experience a sense of competence as he navigated the challenge of building a stable tower. The teacher's role was to support his exploration, offering just enough guidance to help him reflect on his actions and adjust his strategy. A child drawing accompanying this event depicted a tall structure with a smiley face, with Sam later stating, "I built it strong this time." These forms of self-expression illustrated how competence could be visually and verbally reflected in children's own narratives.

Through this case, it became evident that play-based learning is a powerful tool for nurturing intrinsic motivation. By allowing children to engage with materials and solve problems on their own, they not only develop skills and knowledge but also build confidence and a sense of agency. The teacher's role is crucial in providing the right balance of autonomy and support, enabling children to take ownership of their learning. This case highlights the importance of play in cultivating intrinsic motivation, as it provides children with the opportunity to engage in self-directed learning and explore their ideas freely.

4.4 Case study 4: collaborative learning and social interaction

The fourth case study focused on the role of collaborative learning and social interaction in promoting intrinsic motivation. The children worked in small groups to create a mural based on the theme of "The Four Seasons." The task required them to negotiate ideas, share opinions, and collaborate to create a cohesive visual representation. During the activity, the teacher asked open-ended questions such as, "How could we show that it's autumn?" and "What other things happen during winter?" These questions encouraged the children to reflect on their personal experiences with the seasons and integrate these ideas into their mural. As the children collaborated, they built a sense of relatedness and belonging. They engaged in discussions, listened to one another's ideas, and made decisions together. This social interaction fostered a sense of connection, which in turn enhanced their motivation to participate in the activity. One child, Jake, enthusiastically suggested, "We can draw a snowman for winter, and add leaves for autumn!" This social exchange deepened the children's connection to the content, making the learning experience more meaningful.

The teacher emphasized in her interview that "when children work together, they're not just learning from me—they're learning from each other." Brief peer interviews and observational logs confirmed this; children often cited each other's names when describing what they liked about the mural task, indicating emotional reciprocity and collective engagement.

This case highlights the value of social interaction and collaborative learning in fostering intrinsic motivation. By providing opportunities for children to work together, teachers can enhance their sense of relatedness and create a more engaging and rewarding learning experience.

5. Discussion

This study illustrates how autonomy, competence, relatedness, and emotional support function as interrelated pillars in cultivating intrinsic motivation and promoting deep learning in early childhood education. Grounded in Self-Determination Theory (Deci & Ryan, 2000), the findings underscore that intrinsic motivation flourishes in environments where children's basic psychological needs are met in developmentally sensitive, pedagogically intentional, and emotionally attuned ways. Each case study—through its unique learning context—illuminates how these motivational dimensions dynamically interact, fostering sustained engagement, agency, and meaningful cognitive and socio-emotional development.

5.1 Autonomy as the catalyst for engagement and inquiry

Autonomy consistently emerged as a central driver of intrinsic motivation, particularly in inquiry- and play-based contexts (Case Studies 1 and 3). Children demonstrated higher levels of curiosity, perseverance, and ownership when they were empowered to choose learning paths, pose questions, and problem-solve with minimal adult intervention. These findings echo the conclusions of Pino-Pasternak et al. (2020), who argue that agency in early childhood is foundational for metacognitive development and sustained engagement. In our study, autonomy was not limited to decision-making freedom; it was further expressed in how children interpreted and narrated their learning experiences. Data derived from child-led drawing activities and informal interviews enriched this understanding, capturing children's intrinsic rationales for pursuing particular tasks and highlighting how autonomy was internalized through both affective and cognitive dimensions.

Importantly, autonomy was most effective when coupled with sensitive adult scaffolding. As Vygotsky's Zone of Proximal Development (1978) suggests, optimal learning occurs when children operate just beyond their independent capabilities with timely, non-intrusive guidance. This balance was evident in the way teachers facilitated inquiry—stepping back to allow exploration but stepping in when children encountered conceptual or procedural impasses. This supports Reeve's (2016) assertion that autonomy-supportive pedagogy is not laissez-faire but demands strategic responsiveness to children's cues, encouraging deep learning without overwhelming learners with excessive freedom or disengaged instruction.

5.2 Competence as the engine of motivation and mastery

Competence—defined as the perception of effectiveness in one's actions—was another key theme, demonstrated most clearly in Case Studies 2 and 3. Here, children's sense of accomplishment stemmed not from task completion alone, but from the process of overcoming challenge through trial, error, and persistence. The role of the teacher in this process was critical: by emphasizing effort over outcomes and offering specific, constructive feedback, teachers supported the development of mastery-oriented mindsets. These practices align with Dweck's (2006) theory of growth mindset, which holds that learners who perceive ability as malleable are more likely to embrace challenge and remain engaged despite setbacks.

The findings also show that competence is reinforced not just through teacher feedback but

through reflective dialogue and peer sharing. In the puzzle-solving and tower-building tasks, children articulated their learning strategies and progress, thereby reinforcing their understanding and motivation. This was supported by triangulated data from classroom transcripts, child drawings, and teacher interviews, which consistently revealed the motivational significance of incremental mastery. When competence is situated within meaningful contexts and supported by scaffolded feedback, children are more likely to adopt adaptive learning behaviors and maintain intrinsic motivation.

5.3 Relatedness as a social and cognitive anchor

Relatedness—the need to feel connected to others—was most vividly illustrated in Case Study 4, where collaborative learning fostered a strong sense of belonging and shared purpose. As children negotiated artistic choices, expressed opinions, and built on each other's ideas in the mural project, they experienced a dynamic form of co-construction that enriched both motivation and understanding. This resonates with sociocultural theories of learning (Vygotsky, 1978), which emphasize the centrality of social interaction in shaping cognitive development.

The observational and interview data confirm that peer interaction served dual functions: it offered emotional safety and a scaffold for deeper engagement. Children's willingness to contribute ideas and assume leadership roles reflected a classroom climate where relational trust had been cultivated. As Grolnick and Ryan (1989) and Laevers (2005) suggest, when learners feel valued and emotionally connected to both teachers and peers, they are more likely to take risks, engage in higher-order thinking, and persist through cognitive or interpersonal challenges. Relatedness in this context was not passive affiliation but active co-engagement—an essential component of motivational ecology in early childhood settings.

5.4 Emotional support as the bedrock of resilience

Emotional support emerged as a cross-cutting theme, particularly vital during moments of difficulty or frustration (Case Study 2). The teachers' use of encouraging language, empathy, and emotion coaching helped children frame challenges as natural and surmountable parts of the learning process. This aligns with research by Grolnick and Ryan (1989) and Hamre & Pianta (2005), who identify emotionally supportive teaching as a key predictor of engagement and self-regulation in early learners.

Child-centered data—such as comments like "I felt okay when I tried again"—revealed how emotional scaffolding was internalized by children. Such expressions underscore the affective dimension of learning: when children feel emotionally secure, they are more willing to persist, explore, and take intellectual risks. Teachers who validated emotions while reinforcing effort created a classroom ethos where struggle was normalized and resilience was cultivated. This is especially crucial in early learning, where emotional security underpins both motivation and executive functioning.

5.5 Toward an integrated model of motivational support

What these findings collectively suggest is that the four motivational pillars—autonomy, competence, relatedness, and emotional support—are not discrete components but mutually

reinforcing elements in a cohesive motivational ecology. Autonomy enables exploratory behavior; competence sustains it through feelings of mastery; relatedness contextualizes it within meaningful social interactions; and emotional support undergirds it by ensuring psychological safety. This integrative model echoes Katz and Chard's (2000) conception of the "rich learning context" and advances it by showing how strategic pedagogical and emotional practices, when grounded in respect for the child's voice and agency, can deepen both motivation and learning outcomes.

These conclusions are further supported by the multi-source data collection methods used in this study—including classroom observations, semi-structured teacher interviews, child drawing reflections, and informal conversations—which allowed for triangulated insights into how young learners experience motivation in context. Importantly, this approach also addressed potential positivity bias by including child perspectives on both challenges and successes, offering a more nuanced view of how motivation unfolds in real-world classrooms.

To sum up, cultivating intrinsic motivation in early childhood education is not a matter of isolated strategy implementation but of building environments rooted in psychological responsiveness, instructional intentionality, and respect for the child's voice. When these elements converge—through autonomy-supportive practices, competence-building tasks, emotionally attuned relationships, and peer-connected learning—children are more likely to engage in sustained, meaningful, and deep learning experiences that lay the foundation for lifelong learning.

While Self-Determination Theory (SDT) provided the primary lens through which this study examined intrinsic motivation, the findings also invite consideration of complementary motivational theories that could further inform early childhood pedagogy. For instance, Achievement Goal Theory distinguishes between mastery goals and performance goals, emphasizing that children who are motivated by personal growth and learning (mastery) are more likely to demonstrate intrinsic motivation than those focused on outperforming others (Ames, 1992). Similarly, learning-oriented motivational strategies, which prioritize curiosity, process engagement, and meaning-making, contrast with task-oriented approaches that emphasize outcome completion and extrinsic rewards (Schunk, Pintrich, & Meece, 2008).

These perspectives resonate with the study's findings, particularly in illustrating how process-focused feedback, authentic peer collaboration, and exploratory play environments foster motivational climates conducive to deep learning. Integrating such frameworks with SDT could yield a more holistic understanding of how motivation unfolds in diverse early childhood classrooms—particularly those shaped by cultural variability and different pedagogical traditions. As educators seek to design learning environments that are both inclusive and developmentally attuned, drawing from multiple motivational theories may prove instrumental in tailoring effective practices for fostering children's engagement, resilience, and agency.

6. Limitations and Future Research Directions

While this study offers valuable insights into how intrinsic motivation can enhance deep learning in early childhood education, several limitations must be acknowledged to contextualize the findings and inform directions for future research.

First, the use of a multiple case study design, while enabling in-depth, context-rich analysis,

inherently limits generalizability. The findings, grounded in specific classroom environments with particular teachers and children, may not fully represent broader early childhood education settings across varying demographic, institutional, or cultural contexts. Although the triangulated use of observations, teacher interviews, and child-participatory methods strengthened the credibility of the results, future studies could employ a mixed-methods approach to achieve broader applicability. By integrating qualitative insights with large-scale quantitative data—such as standardized assessments of motivation and learning outcomes—researchers could establish stronger empirical linkages and assess how intrinsic motivation operates across different populations and educational systems.

Second, while the study was situated within a specific cultural framework, it did not explicitly examine the influence of cultural variability on motivational development. Cultural values shape not only educational expectations but also children's internalized beliefs about autonomy, authority, success, and failure. For instance, autonomy may manifest differently in collectivist versus individualist cultures, with potential implications for how motivation-supportive strategies are perceived and received. Therefore, future research should investigate cross-cultural dimensions of intrinsic motivation in early childhood settings, exploring how cultural norms, parenting practices, and educational policies affect children's motivational profiles. This line of inquiry would be particularly valuable in multicultural classrooms or regions undergoing rapid demographic shifts, where culturally responsive pedagogy becomes essential to sustaining engagement and inclusion.

Third, with the increasing integration of digital tools in early learning environments, there is a growing need to critically examine the role of technology in shaping intrinsic motivation. While interactive media, gamified platforms, and digital storytelling can offer engaging, individualized learning experiences, they may also carry the risk of overstimulation or reliance on extrinsic reinforcements. Future studies should explore how different types of educational technologies—ranging from touchscreen apps to AI-driven tutoring systems—either support or inhibit children's autonomy, competence, and relatedness. Longitudinal studies could be particularly informative, tracking whether early exposure to technology-based learning environments cultivates sustained motivation or undermines attention, persistence, and curiosity over time.

Finally, additional research is needed to examine how teacher training and institutional support influence the successful implementation of motivation-sensitive pedagogical practices. While this study demonstrated the potential of autonomy-supportive, emotionally responsive, and socially inclusive teaching strategies, their effectiveness depends on teachers' confidence, pedagogical knowledge, and access to resources. Future research might explore professional development models that equip early childhood educators with the theoretical and practical tools to nurture intrinsic motivation consistently and effectively across diverse classroom contexts.

7. Conclusion

This study contributes to the growing body of research affirming the central role of intrinsic motivation in early childhood education and its powerful impact on fostering deep, meaningful learning. Drawing on Self-Determination Theory, the study identified autonomy, competence, relatedness, and emotional support as key motivational levers that, when carefully integrated into classroom practice, can transform children from passive participants into active, curious, and resilient learners. By creating opportunities for choice, encouraging self-initiated exploration, and emphasizing process over outcomes, educators can support the development of children's autonomy and competence—critical foundations for motivation and engagement. The case studies further revealed how emotionally safe and socially connected learning environments nurture children's willingness to take risks, embrace challenges, and collaborate meaningfully with peers.

These experiences go beyond short-term academic achievement; they shape how children perceive themselves as learners and contribute to the development of lifelong dispositions such as persistence, self-regulation, empathy, and reflective thinking.

Importantly, the findings underscore that intrinsic motivation is not simply a trait inherent to some children and absent in others—it is a dynamic, malleable process that can be actively cultivated through intentional pedagogy. Teaching strategies such as inquiry-based learning, open-ended play, collaborative projects, and effort-focused feedback offer rich opportunities for motivating young children intrinsically. These strategies must be accompanied by emotionally attuned teaching practices that validate children ' s experiences, support their emotional needs, and encourage resilience in the face of difficulty.

The implications of this research extend beyond the classroom. For school leaders and policymakers, the findings advocate for curriculum designs and institutional cultures that prioritize psychological well-being, teacher autonomy, and relationship-driven pedagogy. Moreover, as the educational landscape continues to evolve—with increasing emphasis on digital learning, inclusion, and cultural responsiveness — it is imperative that the development of motivation-supportive environments remains a central concern.

In essence, fostering intrinsic motivation in early childhood is not only about enhancing learning outcomes — it is about empowering children to see themselves as capable, engaged, and purposeful individuals. When young learners are given the tools and trust to explore, express, and grow, they are more likely to carry forward the confidence, curiosity, and motivation that form the bedrock of lifelong learning and personal development. Thus, the intentional cultivation of intrinsic motivation is not simply a best practice; it is a fundamental commitment to the holistic flourishing of every child.

Acknowledgment

This study was supported by the Philosophy and Social Science Planning Project of Guangdong Province (Grant No. GD24XJY22).

References

Ahn, J., Cunningham, C. A., & Miller, D. (2021). Exploring young children's digital storytelling practices: A design-based research study. Computers & Education, 164, 104124. https://doi.org/10.1016/j.compedu.2020.104124

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. Journal of Educational Psychology, 84(3), 261–271. https://doi.org/10.1037/0022-0663.84.3.261

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. Longman.

Barzilai, S., & Blau, I. (2020). Scaffolding game-based learning: Impact on learning achievements, motivation, and self-regulation. Computers & Education, 144, 103694. https://doi.org/10.1016/j.compedu.2019.103694

Biggs, J. (2003). Teaching for quality learning at university (2nd ed.). Open University Press.

Bloom, B. S. (Ed.). (1956). Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain. David McKay.

Bodrova, E., & Leong, D. J. (2007). Tools of the mind: The Vygotskian approach to early childhood education (2nd ed.). Merrill/Prentice Hall.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Chen, X., Wang, C., & Li, X. (2020). Classroom emotional climate and young children's academic and social-emotional adjustment. Early Childhood Research Quarterly, 50, 68–78. https://doi.org/10.1016/j.ecresq.2019.02.004

Chirkov, V. (2017). Culture and autonomy: A commentary on cross-cultural perspectives. Motivation and Emotion, 41, 121–129. https://doi.org/10.1007/s11031-017-9590-6

Creswell, J. W. (2013). Qualitative inquiry and research design: Choosing among five approaches (3rd ed.). Sage Publications.

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. Psychological Bulletin, 125(6), 627–668. https://doi.org/10.1037/0033-2909.125.6.627

Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. Springer.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. Psychological Inquiry, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Dweck, C. S. (2006). Mindset: The new psychology of success. Random House.

Ginsburg, K. R. (2007). The importance of play in promoting healthy child development and maintaining strong parent–child bonds. Pediatrics, 119(1), 182–191. https://doi.org/10.1542/peds.2006-2697

Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. Journal of Educational Psychology, 81(2), 143–154. https://doi.org/10.1037/0022-0663.81.2.143

Hamre, B. K., & Pianta, R. C. (2005). Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure? Child Development, 76(5), 949–967. https://doi.org/10.1111/j.1467-8624.2005.00889.x

Jang, H., Reeve, J., & Deci, E. L. (2016). Engaging students in learning activities: It is not autonomy support or structure but autonomy support and structure. Journal of Educational Psychology, 102(3), 588–600. https://doi.org/10.1037/a0019682

Katz, L. G., & Chard, S. C. (2000). Engaging children's minds: The project approach (2nd ed.). Ablex.

Laevers, F. (2005). Deep-level learning and the experiential approach in early childhood and primary education. International Journal of Educational Research, 39(1-2), 39–57. https://doi.org/10.1016/j.ijer.2004.06.001

Lin, X., Li, H., & Wong, J. M. S. (2021). Teacher support for creativity and motivation in Chinese preschoolers. Early Education and Development, 32(3), 430–447. https://doi.org/10.1080/10409289.2020.1744233

McDowell, D. J., & Gauvain, M. (2018). The role of emotion in learning and memory. Annual Review of Psychology, 69, 571–588. https://doi.org/10.1146/annurev-psych-122216-011702

Patton, M. Q. (2002). Qualitative research and evaluation methods (3rd ed.). Sage Publications.

Piaget, J. (1972). The psychology of the child. Basic Books.

Pino-Pasternak, D., & Whitebread, D. (2019). The role of co-regulation in children's development of metacognition: A longitudinal study. Metacognition and Learning, 14(3), 309–339. https://doi.org/10.1007/s11409-019-09194-1

Pino-Pasternak, D., Whitebread, D., & Neilsen-Hewett, C. (2020). Supporting young children's agency in early childhood education. Contemporary Issues in Early Childhood, 21(1), 20–35. https://doi.org/10.1177/1463949118805121

Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. Educational Psychologist, 44(3), 159–175. https://doi.org/10.1080/00461520903028990

Reeve, J. (2016). Autonomy-supportive teaching: What it is, how to do it. In W. Liu, R. M. Ryan, & V. Levesque-Bristol (Eds.), Building autonomous learners (pp. 129–152). Springer. https://doi.org/10.1007/978-981-287-630-0_7

Rubin, H. J., & Rubin, I. S. (2012). Qualitative interviewing: The art of hearing data (3rd ed.). Sage Publications.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. American Psychologist, 55(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic dialectical perspective. In E. L. Deci & R. M. Ryan (Eds.), Handbook of self-determination research (pp. 3–33). University of Rochester Press.

Schunk, D. H. (2012). Learning theories: An educational perspective (6th ed.). Pearson.

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). Motivation in education: Theory, research, and applications (3rd ed.). Pearson Merrill Prentice Hall.

Seidman, I. (2013). Interviewing as qualitative research: A guide for researchers in education and the social sciences (4th ed.). Teachers College Press.

van der Veen, C., Kroesbergen, E. H., & Leseman, P. P. M. (2018). The role of explicit scaffolding and feedback in young children's scientific exploration. Learning and Instruction, 55, 58–70. https://doi.org/10.1016/j.learninstruc.2018.02.005

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.

Whitebread, D., Pino-Pasternak, D., & Coltman, P. (2017). Self-regulation in young children's learning: Developing foundational skills. In R. Perry, L. D. VandeKamp, & T. Urdan (Eds.), Handbook of self-regulation of learning and performance (2nd ed., pp. 15–35). Routledge.