

Storytelling and Preschool Children's Creativity: From Traditional Narratives to Digital and AI- Supported Learning

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Abstract

Storytelling in preschool children's education has been a well-established practice for many years. However, the majority of existing research has been scattered throughout the realms of traditional storytelling, picture storybooks, digital storytelling and even more recent artificial intelligence (AI) supported storytelling practices. Consequently, a synthesis of research that systematically explores the various manifestations of storytelling in relation to preschool children's creativity and learning is lacking. This study examines the ways in which a variety of forms of storytelling support children's creativity, imagination, language and literacy, cognitive development and emerging co-creativity. Utilizing a library research design, the study retrieved and reviewed journal articles, conference papers, books and other academic sources. Sources were selected that had been published between the years 2000 and 2026. The resulting body of literature was analyzed thematically to create four categories of storytelling: traditional storytelling, language and literacy, cognitive development and digital/AI-supported creative storytelling. The findings of the study reveal that, in addition to facilitating children's imagination and creative expression, storytelling also contributes to children's vocabulary, comprehension, verbal expression, narrative thinking and literacy. In addition to these outcomes associated with traditional forms of storytelling, digital storytelling also supports children's cognitive learning and a range of skills including narrative writing, observation, classification and prediction. Recently, AI-supported creative storytelling has begun to be researched with a focus on children's verbal creativity, reporting increases in children's fluency, flexibility and elaboration; however, results for originality have been less consistent. The study concludes that storytelling has evolved into a highly multimodal, interactive and co-creative site of pedagogy and that traditional and technology-supported storytelling can be integrated in order to support preschool children's creative learning.

Keywords: Storytelling, Preschool Children, Creativity, Digital Storytelling, Traditional Narratives

Introduction

Preschool children learn through stories, meet characters, learn about situations, solve problems, encounter human emotions and enter into imaginary worlds of experience. Phillips (2000) noted that storytelling is an educational tool in its own right and supports children's creative potential. Within the space of stories preschool children can develop their language, imagination, creative expression and sense of the world around them. Recently, however, the medium of storytelling has moved into the space of the picture book, the multimedia environment, and interactive storytelling using AI systems and social robots.

Preschool children can engage with stories and be exposed to a wide variety of them through illustrated books, multi-media environments, storytelling software, and interactions with AI systems and social robots. Research in this area has shown that preschool children's verbal creativity can be stimulated by an autonomous creative storytelling robot (Elgarf et al., 2024), and that there are emerging systems designed to support co-creativity between children and AI (Oliveira et al., 2026). Such developments highlight how storytelling is continuing to evolve in order to remain a creative and educational experience for children.

Preschool children's creativity and imagination are also important aspects of their development, through which they are able to generate ideas, explore different possibilities, construct meaning and express themselves in various ways. Preschool children's imagination in storytelling can take the form of making up settings and characters and predicting what might happen next in a story. They can also interpret events in a number of ways or re-tell a story from a different perspective and able to generate their own stories.

Phillips (2000) acknowledged storytelling as an educational tool to support preschool children's creative potential, while Silaban et al. (2024) revealed that picture storybooks could foster creativity and imagination in early childhood. Zuhdi et al. (2024) identified that picture storybooks could be used as learning media to support students' creativity, while Bunayyah et al. (2025) revealed that in children aged 5-6 years old, storytelling assisted in developing literacy, vocabulary, verbal communication, comprehension, narrative thinking, imagination and socio-emotional development.

The storytelling practice can also be transformed by digital technology, such as in digital storytelling. Ngoi et al. (2024) explored digital storytelling and preschool children's narrative writing in educational settings, and Al-Barakat et al. (2025) investigated the role of digital storytelling in developing preschool children's observation, classification and prediction skills. However, a new and promising area of research in the storytelling practice is the use of AI in storytelling, such as the use of AI in LLM-driven storytelling with children and social robots, investigated by Elgarf et al. (2024), and in storytelling-based co-creativity between preschool children and AI in emerging systems, explored by Oliveira et al. (2026).

There are many, varied studies on the topic of storytelling and learning outcomes. While there are some studies that look at traditional means of storytelling, such as picture storybooks, there are a growing number of studies that report on preschool children's learning with digital storytelling and with social robots and other forms of AI. These studies report on children's learning of a variety of outcomes including creativity, imagination, literacy, narrative writing, critical thinking, science process skills and social-emotional learning.

However, studies on creativity through storytelling have been fragmented and mostly conceptualized and measured differently. For example, Elgarf et al. (2024) measured children's verbal creativity by means of fluency, flexibility, elaboration, and originality whereas other studies referred to creativity and imagination more broadly.

- This study aims to review and to synthesize the findings of the previous studies which investigated the effects of storytelling, as a pedagogical approach, on children's creativity and related learning outcomes.
- The review restricted to the studies that have employed traditional means of storytelling, as well as those which have employed digitalized versions of storytelling, and also those which have used AI in order to create novel types of storytelling.
- In the review, major learning outcomes of preschool children who engaged in storytelling sessions summarized, and also limitations of the previous studies and future research directions will be discussed.

Literature Review

Research on storytelling and preschool children's development can be organized into four major categories. First, traditional storytelling, children's creativity and imagination explores how children's oral stories and picture storybooks support children's imaginative thinking and creativity. The second category, storytelling and preschool children's language and literacy development, investigates the ways in which children's storytelling supports preschool children's vocabulary, listening, verbal expression, comprehension, and narrative abilities. The third category, storytelling and children's cognitive development, explores a broader range of cognitive skills including preschool children's observation, classification, prediction, and critical thinking skills. Finally, digital and AI-supported creative storytelling explores how digital media, large language models, and social robots are changing the nature of creative storytelling with children to support children's creativity and learning in new ways.

Traditional Storytelling, Creativity, and Imagination

Storytelling is a traditional way for preschool children to experience imaginary situations and to work out meanings from stories. Phillips (2000) described storytelling as an educational approach that could expand the creative potential of young children. More recently, Dadaboyeva (2026) described relationships between children's storytelling, their imagination, creativity, language, thinking, and emotions. The addition of pictures to a story provides a further dimension and children can use illustrations to imagine situations and characters beyond their everyday experiences (Silaban et al., 2024). For this reason, a number of studies have been developed into picture storybooks which aim to encourage students' creativity through character education (Zuhdi et al., 2024). In this way, a combination of a narrative and visual elements can be used to provide children with opportunities to engage imaginatively and creatively with a story.

Storytelling and Language and Literacy Development

Storytelling and language and literacy development. Bunayyah et al. (2025) in their study on storytelling and preschool children aged 5 and 6 found positive results with aspects of attention, vocabulary, verbal expression, comprehension, confidence and narrative thinking. Children were able to retell a story and use newly acquired vocabulary in communication. Ngoi, et al. (2024) explored the use of digital storytelling for enhancing children's and learners' English narrative writing. Storytelling thus moves a step forward from simply receiving stories

and being exposed to them, and instead helps children and learners to organize and to create their own stories.

Storytelling and Cognitive Development

Storytelling also has many benefits beyond creativity and language. In a recent study, Al-Barakat et al. (2025) examined the impact of a digital storytelling-based learning environment on the science process skills of 238 preschool children, and found positive effects on their skills of observation, classification, and prediction within this context. Thus, there are many learning environments that are based on narratives and that can be integrated into various learning areas. Moreover, there is evidence of the connection between creative activities and all aspects of human development. A synthesis of evidence-based play interventions with preschool children conducted by Garaigordobil et al. (2022) shows the relationship between play, creativity, and social-emotional competencies. Even though this work was not carried out with the aim of studying storytelling, it contributes to an understanding of this activity as imaginative and participative.

Digital and AI-Supported Creative Storytelling

Many recent technological advancements enable new forms of storytelling. Elgarf et al. (2024) studied the stories preschool children told in interactions with a social robot driven by a Large Language Model (LLM). The second of their experiments compared children's storytelling with an autonomous creative robot to their storytelling with a non-creative robot. preschool children interacted with the autonomous creative robot to a greater extent than with the non-creative robot, and they showed greater fluency, flexibility, and elaboration than children who interacted with the non-creative robot. However, the children in both conditions showed on average the same level of originality. Recently, Oliveira et al. (2026) started to investigate systems that support children in their co-creativity with artificial intelligence in the area of storytelling. These studies move from a purely tellatory use of technology to a scenario in which children and an intelligent agent create a story together.

Methodology

The research is based on a library study by means of a literature review on the subject of storytelling as well as on preschool children's creativity, imagination and learning. Relevant academic publications were retrieved from online platforms of journal publishers and from academic databases and repositories, such as SAGE Journals, Springer Nature Link, PubMed Central (PMC), Frontiers, ResearchGate, as well as from institutional repositories, from the websites of journals and from the DOI of scholarly publications. The reviewed literature consists of journal articles, conference reports, academic books and other relevant studies, which were published between 2000 and 2026. All studies were included in the analysis if they dealt with the subject of storytelling or another relevant aspect, such as children's literacy, language, critical thinking and cognitive development, as well as digital and picture storybooks and AI-supported storytelling in general. The analyzed studies were organized according to themes. The analysis focused on identifying recurring themes concerning (i) Traditional Storytelling, Creativity, and Imagination (ii) Storytelling and Language and Literacy Development (iii) Storytelling and Cognitive Development and (iii) Digital and AI-Supported Creative Storytelling.

Finding and Discussion

The studies concerning children's development, such as creativity, imagination, language, and literacy as well as their cognitive and learning development through the process of storytelling indicated that there were several key findings. Firstly, the studies found that preschool children could use their imagination through traditional oral stories and picture storybooks. This was because stories contained characters, settings, and events that children could not experience in their everyday lives. Preschool children could therefore use their imagination and create their own ideas and stories about the characters and events in the stories. In addition, preschool children could also express their creativity through the stories that they created using their imagination. Phillips (2000) found that storytelling was an educational approach that could help to foster the creative potential of preschool children. Silaban et al. (2024) also found that picture storybooks were able to stimulate preschool children's creativity and imagination through the combination of stories and images. Zuhdi et al. (2024) discovered that picture storybooks had the potential to be used as an educational tool to help preschool children increase their creativity.

Storytelling also enables language and literacy development. The act of storytelling and sharing stories exposes preschool children to a wide vocabulary, sentence structures, sequences of events and stories, dialogue and many ways of expressing an idea or story. Bunayyah et al. (2025) reported that storytelling and sharing stories in a series of activities enabled children to pay attention, to acquire and use new vocabulary, to express verbal ideas, to comprehend stories and to develop confidence in their ability to tell stories and to engage in narrative conversation. The preschool children were also able to retell stories and to use newly-acquired vocabulary in their verbal communication. Thus, listening to stories and sharing them in an interactive manner can simultaneously enhance children's foundational literacy and their ability to verbalize their imaginative ideas.

Storytelling and preschool children's learning: Other cognitive abilities. In relation to other cognitive abilities and curriculum areas, children's creative imagination and ideas can be supported through narrative. Ngoi et al. (2024) utilized digital storytelling for narrative writing and found that through digital narratives learners were able to organize and communicate their ideas effectively. Al-Barakat et al. (2025) utilized storytelling in science education to support young children's observation, classification and prediction skills. These fundamental science process skills require preschool children to identify details, recognize relationships, organize and make sense of information and anticipate what may happen in a given situation. Through storytelling children are able to connect information, make sense of situations, solve problems and make predictions in order to understand events and circumstances. Hence, storytelling is not confined to language and literacy but can be used as a pedagogical tool in other learning areas as well.

The pedagogy of storytelling is changing from traditional oral stories and picture storybooks to digital interactive stories, and recently to AI-supportive storytelling. Storytelling is now transformed and enhanced by various visual, digital, interactive technologies and by the use of artificial intelligence (AI). Children's experiences of stories are now much more varied and richer. They are no longer limited to passively listening to or reading stories. Instead, children are actively involved in stories, exploring, interpreting, making sense of, and creating their own stories in different ways. The new forms of storytelling enable children to engage more

fully and creatively with narratives and to take on a more active role in learning about the world around them.

While the studies found that LLM-driven storytelling with social robots facilitated creative storytelling by children, there were significant differences between the children interacting with the autonomous creative robot and those interacting with the non-creative robot. Specifically, preschool children interacting with the creative robot showed greater fluency, flexibility, and elaboration than those interacting with the non-creative robot. However, there were no significant differences in average originality between the two conditions of storytelling. These findings suggest that while technology can facilitate creative storytelling by children, it may have a greater impact on some aspects of creativity than others. The growing body of work around the use of AI in storytelling by children, which includes work on child–AI co-creativity, is outlined in the work of Oliveira et al. (2026). The primary finding of this work is that there are emerging systems designed to support storytelling by preschool children in collaboration with AI. These systems go beyond the simple delivery of stories to preschool children and instead allow the AI to respond to preschool children's ideas and to extend and even stimulate children's narrative.

In summary, the storytelling from an oral and print-based practice is being transformed to become a multimodal, interactive and digital environment, whereby preschool children are able to engage with various forms of imagination and narrative construction within the contexts of learning. The imagination and narratives within the various contexts of learning enable children to explore and express their ideas through creativity and imagination, as well as through language and literacy. Thus, the growing use of digital media and AI within education does not mean that storytelling is going to be taken away from children and are replaced by other forms of learning and imagination. Rather, children's imagination and narratives will be embedded within various storytelling practices that are enhanced by traditional narrative, visual media, digital media and AI within various learning environments and contexts.

Conclusion

From the reviewed studies on storytelling in early childhood, it can be concluded that this type of activity still has much to offer children's learning and development in terms of creativity, imagination, language, literacy, thinking and learning in general. Traditional as well as digitalized forms of storytelling by means of picture storybooks are a good starting point for preschool children's imagination and creative expression. New forms of storytelling that are supported by AI offer new ways of interactive and co-creative storytelling for children.

A key limitation of this review is that studies investigated preschool children of different ages, employed different methodologies, were conducted in a variety of educational settings, and used different technologies to support children's creativity. In addition, whereas some studies measured children's creativity directly, others investigated a range of related outcomes including children's literacy, narrative writing, and science process skills, as well as their social-emotional development. Moreover, studies included in this review consisted of a range of different publication types, and thus provided varying amounts and types of empirical evidence.

From the reviewed literature, it is evident that preschool children's creativity could be developed through various types of storytelling such as the creative arts, through picture books, through play, through science stories and through a variety of media. Technologies, including AI, could also be integrated into storytelling for children's learning and creativity. Also from the reviewed literature, it is apparent that creativity should not be viewed as a single entity but as having four dimensions: fluency, flexibility, elaboration and originality.

The review contributes to the understanding of storytelling as a multidimensional pedagogical approach supporting children's creativity by fostering fluency, flexibility, elaboration and originality. Building on existing knowledge, the review integrates traditional, arts-based, digital and AI-supported forms of storytelling and discusses evidence obtained in a variety of educational settings and by means of different storytelling forms. Thus, the review provides a useful basis for researchers and early childhood educators to develop and implement adequate storytelling in order to support children's creative agency while being able to work in technology-rich early childhood environments.

There is a need for more longitudinal and experimental research with larger, more diverse samples to examine the lasting effects of storytelling for enhancing preschool children's creativity. Future research with children in the early childhood years could also examine the effects of various forms of storytelling include traditional, picture-storytelling, digital-storytelling, puppetry-based storytelling, and AI-supported storytelling in comparison to one another as well as to high-quality, human-led storytelling that does not incorporate technology. The extent to which children and teachers can maintain creative agency in storytelling that involves AI is also worthy of investigation.

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