

Exploring Creative Thinking through StoryJumper-based Generative Learning: A Preliminary Literature Review

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Abstract

This study provides a preliminary synthesis of theoretical and empirical literature on the integration of generative learning and digital storytelling, with a focus on StoryJumper as a creative learning platform for elementary students. The review highlights that generative learning supports deeper cognitive processing through activities such as explaining, creating narratives, and revising ideas, which contribute directly to the development of creative thinking skills. Digital storytelling platforms, particularly StoryJumper, offer multimodal environments that facilitate idea generation, visual expression, and iterative refinement, making them compatible with generative learning principles. The analysis also emphasizes the role of self-regulated learning in supporting students' planning, monitoring, and revising processes during open-ended creative tasks. Findings indicate that combining generative learning with StoryJumper holds strong potential to enhance fluency, flexibility, originality, and elaboration in children's creative thinking. This literature-based exploration establishes a conceptual foundation for future empirical studies that examine the effectiveness of this integrated approach in real classroom settings.

Kata kunci: Creative Thinking, Generative Learning, Self-Regulated Learning, Storyjumper

1 INTRODUCTION

The development of digital technology in the 21st century has presented a great opportunity to transform learning practices, including at the elementary school level. Digital platforms and tools now allow students to no longer just passively receive information, but to construct and generate knowledge through rich multimodal activities (Li, 2020; Mayer, 2011). One of the challenges of education today is how to cultivate creative thinking skills from an early age as part of 21st century competencies (4Cs: critical thinking, creativity, communication, collaboration) (Thornhill-Miller et al., 2023). Creative thinking includes the ability to generate multiple ideas, move between categories of ideas, generate original ideas, and develop details (Guilford, 1950; Torrance, 1974). To achieve this, a learning design is needed that provides space for the process of planning, producing ideas, revising, and reflecting (Rusmann & Ejsing-Duun, 2022).

The generative learning model puts the activity of meaning production at the center of the learning process (Fiorella, 2023): learners are asked to generate new representations or products such as stories, concept maps, or summaries that tie new ideas to existing cognitive structures. Generative Learning theory asserts that learning occurs when students actively organize, integrate, and transform information (Wittrock, 1992; Wittrock & Alesandrini, 1990). Empirical studies show that generative approaches, including variants that incorporate cognitive conflict or scaffolding, can improve students' high-level

thinking skills and creativity (Fiorella & Mayer, 2016, 2021). The results provide evidence that generative interventions are associated with improved creative skills when designed with open tasks and appropriate instructional support (Faujiah et al., 2024; Petersen et al., 2023; Ruiz-Rojas et al., 2023).

In the realm of digital media, digital storytelling has been identified as one of the effective strategies to encourage engagement, multimodal literacy, and creative ability. A systematic review of digital storytelling studies shows that Digital Storytelling (DS) is used at various levels of education and produces positive cognitive, affective, and social outcomes, including increased creativity, motivation, and communication skills (Moradi & Chen, 2019). Other findings suggest that DS becomes more effective when integrated with explicit pedagogical strategies such as reflective activities, peer feedback, and creative rubrics (C.-H. Chen & Yeh, 2025; Smeda et al., 2014).

Specific platforms like StoryJumper provide an intuitive digital storytelling environment through drag-and-drop features, illustration galleries, and page layout, making it easy for elementary students to express narrative and visual ideas without technical barriers (Fitriyani et al., 2023). The development of generative technologies, such as generative AI, has also opened up new discussions about how ideas produced automatically or assisted by machines can affect human creativity. In addition to media and model aspects, Self-Regulated Learning (SRL) is an important factor that affects how effectively students utilize open assignments and digital media to think creatively. SRL theory emphasizes the tri-phases of planning, control/monitoring, and evaluation regulation that allow learners to manage the learning process and revise their creative products (Zimmerman, 2002). Research shows that SRL can moderate the effects of learning interventions: students with high SRL benefit more from generative tasks because they are able to plan, monitor, and optimize the process of producing ideas (J. Chen, 2022; Järvelä et al., 2023). Therefore, the design of the implementation of StoryJumper-based generative learning should ideally also contain scaffolding elements that support SRL, such as story planning guidelines, revision checklists, and peer/teacher feedback.

While there is promising evidence on the positive effects of digital storytelling and generative learning on creativity, there is an important research gap: relatively few experimental studies explicitly test the integration of generative learning + StoryJumper in primary school student populations. SRL's role as a moderator or mediator in this context is also rarely tested systematically. This gap demonstrates the need for a literature review that summarizes theoretical and empirical evidence as a basis for designing stronger pre-experimental and experimental studies. Based on the description above, this study has specific objectives: (1) to identify the concepts and supporting evidence of generative learning in the context of developing children's creativity; (2) describe the potential of StoryJumper as a medium that enables generative activities in elementary grades; and (3) formulate a conceptual framework that links generative learning + StoryJumper + SRL to the development of creative thinking skills of elementary school students.

2 RESEARCH METHODS

This study uses a descriptive qualitative approach with a literature review method. This approach was chosen because it was able to provide a comprehensive understanding of the concept of generative learning, StoryJumper-based digital storytelling, and creative thinking skills in elementary school students. The descriptive qualitative method is suitable for research that aims to explore phenomena, map the relationships between concepts, and build an initial theoretical framework before empirical research is carried out (Garvey & Jones, 2021).

2.1 Research Design

The research design uses *library research* with strategy *integrative review*, which combines conceptual, methodological, and empirical findings from various reputable sources. This approach is commonly used to summarize and synthesize evidence in education resulting in new, more structured understandings (Cronin & George, 2023). In the context of this research, literature studies are used to: 1) identify the main concepts of generative learning; 2) review empirical use of digital storytelling, especially StoryJumper; 3) Analyze the conceptual relationship between the three and the ability to think creatively.

2.2 Literature Sources and Criteria

Literature is taken from reputable international journals Q1, accredited national journals, international proceedings, and scientific books. The search was conducted using the following databases: 1) Scopus; 2) Web of Science; 3) Taylor & Francis; 4) SpringerLink; 5) ScienceDirect 6) Google Scholar. The criteria for inclusion of literature are as follows: 1) published in the 2015–2025 time frame; 2) focus on the topic of generative learning, creativity, digital storytelling, or StoryJumper; 3) published in a Q1 or Q2 journal, or a reputable national journal; 4) using empirical methodologies or in the form of relevant theoretical studies; 5) Accessible in *full-text*.

Exclusion criteria include: 1) articles that are not relevant to the context of basic education; 2) opinion articles without supporting data; 3) articles that do not go through the process *peer review*. The decision to use literature from reputable journals was made due to the high methodological quality, credibility of the findings, and significant contribution to the development of theories (Paul et al., 2021).

2.3 Data Collection Procedures

The data collection procedure is carried out through three steps:

a. Identification and literature search

Keywords are used in various combinations: "*generative learning model*", "*digital storytelling*", "*StoryJumper*", "*creative thinking skills*", "*elementary education*". Boolean search techniques (AND, OR, NOT) are used to narrow and expand search results as needed.

b. Literature selection

The selection was carried out in two stages: 1) initial screening based on titles and abstracts; 2) Advanced screening based on the content of the article (full-text). The selection follows the PRISMA guidelines as a systematic standard in conducting literature review.

c. Data extraction

Information from each article is recorded in a synthesis matrix which includes: 1) research objectives, 2) methodological design, 3) key findings, 4) implications for generative learning and creativity, 5) relevance to StoryJumper media. This approach is standard practice in *evidence-based review*.

2.4 Data Analysis Techniques

Data analysis is carried out using the content analysis and thematic synthesis approaches, which are commonly used in qualitative research to explore core themes and relationships between concepts (Braun & Clarke, 2021). The analysis steps are as follows: 1) Data reduction: selecting important findings according to the focus of the research; 2) Thematic classification: grouping findings into key themes such as: a. generative learning principles; b. digital storytelling features; c. the role of visualization in creativity; d. the role of Self-Regulated Learning (SRL); 3) Interpretation and synthesis: connecting literature into a whole conceptual narrative. The analysis process follows qualitative rigor standards:

credibility, transferability, dependability and confirmability (Johnson et al., 2020). The use of multiple reputable sources also supports the validity and reliability of the study.

2.5. The Role of Researchers in Literature Review

In descriptive qualitative research, the researcher plays the role of the main instrument that conducts the sorting, interpretation, and synthesis of literature. In this study, the researcher ensured that the literature analysis was carried out objectively, without bias, and following the principles *systematic qualitative review* (Snyder, 2019).

3 RESULT AND DISCUSSION

This section presents the results of a synthesis of literature that has been analyzed through a descriptive qualitative approach. The results of the study are grouped into three main themes: (1) the characteristics and effectiveness of generative learning in the development of creativity, (2) the potential of digital storytelling, especially StoryJumper in creative learning, and (3) the integration of the two as a conceptual framework for improving the creative thinking skills of elementary school students.

3.1 Generative Learning and the Development of Creative Thinking

Reputable international literature shows that generative learning is consistently associated with improved high-level thinking skills, including creative thinking skills. Fiorella (2023); Fiorella & Mayer (2016, 2021) explained that generative activities such as re-explaining, illustrating, summarizing, and fabricating stories can trigger deeper mental elaboration (deep cognitive processing). The activity requires students to organize, connect, and rerepresent information, so that students play the role not only as recipients of information, but as producers of meaning.

The findings are reinforced by research Akmam et al. (2024), which shows that cognitive conflict-based generative learning models significantly improve students' creative thinking abilities. The study found that generative activities affect four indicators of creativity formulated by Torrance, namely fluency, flexibility, originality, and elaboration. When students engage in storytelling, concept mapping, and idea formation independently, the ability to generate new ideas (originality) and enrich ideas through detail (elaboration) increases significantly.

In addition, the research Pratschke (2024), found that hybrid-generative learning was able to significantly increase students' creativity and interest in learning. This shows that generative models are flexible and relevant when integrated with various digital learning approaches. Research García-Alvarado et al. (2024), also confirms that generative-based activities, including the use of digital tools that enable the production of ideas, enhance individual creativity through broader exploration and continuous revision of ideas. The literature consistently shows that generative learning creates learning conditions that enable divergent thinking processes, increase the authenticity of ideas, and strengthen elaboration skills through the creation of new representations. This becomes a strong theoretical foundation that generative learning can be effectively integrated to enhance creativity in elementary school students.

3.2 Digital Storytelling and Storyjumper in Increasing Creativity

Literature review also shows that the use of digital storytelling is an effective strategy in increasing students' creativity, engagement, and multimodal literacy. Several studies have found that digital storytelling: 1) increases intrinsic motivation; 2) support creative expression; 3) develop visual and verbal narratives, as well as; 4) Strengthen cognitive

processing through the integration of text, images, and sound. (Aşık, 2022; Shahid & Khan, 2022)

Digital storytelling allows students to convert experiences and knowledge into a form of multimodal narrative. This is important because creativity does not only arise from verbal innovation, but from the ability to combine different modes of representation. In the context of elementary education, StoryJumper is one of the most accessible and widely used digital storytelling platforms. Research Vretudaki et al. (2024), showing that creating digital books using StoryJumper significantly improves students' literacy, visual imagination, and language skills. StoryJumper's interactive feature: a combination of text, images, illustrations, and animations serves as a stimulus for visual and imaginative creativity.

In addition, the research Anal (2025) prove that StoryJumper can improve elementary school students' participation, learning motivation, and narrative writing skills. This is in line with the findings Huang & Liang (2025), that the production of digital stories enhances creative thinking skills through a multi-stage process: exploration of ideas, concept creation, revision, and publication of works. Recent research shows that immersive digital media such as 3D digital storybooks can increase imagination, curiosity, and creative problem-solving skills in children (S.-J. Chen et al., 2024).

3.3 Integrasi Generative Learning dan StoryJumper

A synthesis of the literature shows that the integration between Generative Learning and StoryJumper creates a rich and contextual learning experience to encourage the creativity of elementary school students. The generative model provides a cognitive foundation in the form of the process of activating initial knowledge, exploring ideas, restructuring understanding, and applying concepts, while StoryJumper provides visual-digital media to realize these creative ideas. The integration of both approaches allows students to: 1) Create new representations of stories, which require divergent thinking skills and knowledge restructuring; 2) Visualize ideas digitally, thus strengthening the relationship between concrete and abstract experiences; 3) Revise and reflect, according to the generative learning syntax and StoryJumper editing feature; 4) Exploring multimodality through a combination of text, image, sound, and narrative structure.

Breitwieser (2021), found that production-based generative learning tasks (such as creating stories, concept maps, and illustrations) were much more effective at improving understanding and creativity than reproductive tasks. When this is collaborated with digital media such as StoryJumper, the creative thinking process becomes more dynamic and directed. In addition, the research Pantaleo (2021), showing that visual and multimodal media, including comics and digital books, are able to foster children's creativity through the process of transduction, which is the conversion of ideas and experiences into new forms of representation. This is in line with StoryJumper's function as a tool that encourages students to transform ideas into creative products. The literature supports that the combination of generative models and StoryJumper has great potential in improving the creative thinking skills of elementary school students, as they work in harmony in stimulating divergent thinking, ideation elaboration, and multimodal creative expression.

4 CONCLUSION

This literature review concludes that StoryJumper-based generative learning has great potential to develop the creative thinking skills of elementary school students. This approach emphasizes meaning-producing activities that involve ideas, imagination, and creative problem-solving. StoryJumper as a digital storytelling media supports this process by providing visual and narrative spaces that enrich students' learning experiences. However, empirical research related to the implementation of the integration of these two approaches is still limited, so further research needs to be conducted through pre-experiments and experiments in the context of learning in elementary schools.

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