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# Fostering Creativity and Moral Values Among Preschool Children Through Multimedia Storyboards

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**Abstract**

This study found the need to explore the abilities of preschool children in developing creativity and applying moral values while interacting with multimedia storyboards. The study conducted is a case study involving a group of 5 preschool children aged 6 years old in Melaka. The study's findings were processed using a qualitative approach and the NEMD Theory from the generated storylines. The study's results recorded that when children tell stories using multimedia storyboards, the resulting storylines are more complex and incorporate moral values spontaneously compared to storytelling without multimedia storyboards. The findings of this study can fulfill the Student Aspirations in the Education Development Plan (20132025), which aims to produce students with communication skills. Furthermore, this study can serve as a guide not only for children but also for maximizing the emergence of talents that can enhance the quality of the country's education.

**Keywords**: Creativity, Moral Values, Storytelling, NEMD Theory, Preschool Students

## Introduction

Preschool education is advancing, and to catch up, we must embrace innovative and effective approaches. Old methods are being replaced by interactive teaching that promotes creativity and children's understanding, alongside instilling moral values in their language activities. According to Ganieva (2022), the widespread use of modern interactive, communicative, and

gaming technologies with preschool students has the potential to enhance the quality of education and the proficiency of teachers in utilizing innovative educational technology.

Creative thinking is a vital skill in the 21st century, driving human progress and survival (Lucchiari et al., 2019). It's not limited to artistic or genius thinking but is the ability most people have to generate new ideas and solutions, starting in childhood. Creative thinking includes divergent and convergent thinking, along with associative, imaginative, and reverse thinking (Lucchiari et al., 2019; Yildiz & Yildiz, 2021; Rahimi & Shute, 2021 & Hoyng, 2022).

To create a learning environment that can prepare students for a more challenging phase of education and become more independent, mature in thinking, collaborative, the selection of suitable teaching tools is one of the crucial considerations to ensure that the 21st-century education system brings students into real-world situations by bringing these situations into the classroom (Habibi et al., 2019; Sumardi, 2020 & Mohamad et al., 2022). To meet this need, the required learning environment in the 21st century is an interactive learning environment. Among the infrastructure that meets these requirements is the interactive whiteboard (KPM, 2017).

This study was conducted to examine and investigate the development of children's oral speech when exposed to multimedia stimuli in their language activities. This is because the use of multimedia in language learning is a suitable approach to enhance speaking proficiency, especially in children (Liu et al., 2015). The results of this study can shed light on the development of oral speech, imagination, and creativity produced by children in storytelling activities using multimedia. Research on oral speech with the aid of multimedia can help children generate spontaneous and context-based oral expressions. The data from this study are crucial for understanding the cognitive development of children through multimedia storytelling approaches. Additionally, this research can assist adults in selecting suitable multimedia materials for children's language activities. *-Tracked changes*

**Nurturing creative thinking among preschool children**

The learning and teaching phase at the preschool level is the most important and critical stage because during this time, children have the ability to absorb knowledge and cultivate creative and critical thinking skills (Behnamnia, Kamsin, Ismail, et al., 2020). Therefore, teachers need to create a learning environment that encourages children to express their ideas and creativities.

From previous research, there are some important factors that can enhance the development of creativity among preschool students. First, learning through Interaction. Children learn not only from their teachers but also from their interactions with peers and adults. These interactions expose them to various perspectives, ideas, and ways of thinking. When they collaborate and engage in discussions with others, it stimulates their cognitive development and helps them see the world from different angles. This process of learning from others fosters creativity as it encourages them to think beyond their immediate experiences and consider alternative solutions to problems (Faizi, Azari & Maleki, 2012; Diener, Wright, Brehl, & Black, 2016 & Yildiz & Yildiz, 2021).

Second, creating a creative environment. Early childhood is a critical period for cognitive and emotional development. Creating an environment that encourages creativity during this time is vital (Ganieva, 2022; Lucchiari et al., 2019). Adults, whether parents or teachers, play a significant role in shaping this environment. They can provide children with stimulating materials, open-ended activities, and opportunities for exploration, which can spark their imagination and creativity. This kind of nurturing environment allows children to feel safe and inspired to explore their ideas and interests (Behnamnia, Kamsin, Ismail, et al., 2020). In addition, Kupers et al. (2019) stated that creativity can be approached when the learning activity is socially situated, for example, the interactions between the student and the direct social environment as the fact that the environment plays a key role in learning has been widely recognized in educational sciences as evidenced. The critical difference with research from a complex dynamic systems approach is that the student and the student's environment shape each other. The teacher not only influences the student but also the other way around. Therefore, from the previous study shows the right environment in learning activities could affect the outcome of children's creativity.

Third, embracing mistakes and risks. In a creative atmosphere, children are more likely to take risks and make mistakes without fear of judgment or criticism. This is essential for creativity because creativity often involves trying out new ideas, experimenting, and sometimes failing. When children know that their errors are seen as part of the learning process and not as failures, they become more willing to explore innovative solutions and think outside the box.

The fourth point is respecting children's ideas. Respecting children's ideas is crucial for nurturing creativity. When children feel that their thoughts and contributions are valued and taken seriously, they are more likely to continue generating and sharing their ideas. This validation boosts their self-confidence and motivates them to continue exploring and creating.

The fifth and last point is positive attitudes of preschool teachers: Preschool teachers are instrumental in shaping a child's early experiences with education. Their positive attitudes, encouragement, and support can significantly impact a child's creative development (Xiong et al., 2022; Lee & Koubek, 2010). When teachers display enthusiasm for exploration, a willingness to listen to children, and an appreciation for their creativity, it creates a positive learning environment that empowers children to express themselves creatively (Ganieva, 2022).

Therefore, there are 2 research objectives that will be achieved:

1. Analyzing the production of stories created by preschool students without and with multimedia storyboards.
2. Evaluating the moral values embedded in the stories without and with multimedia.

## Methodology

This study is a qualitative case study aimed at exploring a phenomenon or issue faced by rural preschool students regarding their oral skills. The choice of a case study aligns with Khairul Nizam (2017), which was conducted to gather qualitative findings to examine and understand a particular event. Through this study, the problems and issues that serve as causes can be examined and understood more clearly. This study involves 5 preschool students from the state of Melaka, Malaysia, who have similar levels of intelligence and share nearly identical backgrounds.

The theory used in this study is the NEMD Theory, which explains the characteristics of design that can enhance user enjoyment when interacting with multimedia, whether in physical or software form. The NEMD Theory was pioneered by Normahdiah Sheik Said (2007) and emphasizes the multimedia features that can capture the user's attention and interest without being prompted or forced. This theory also discusses the effects of multimedia features on changes in user communication, behavior, and addiction when engaging with multimedia content.

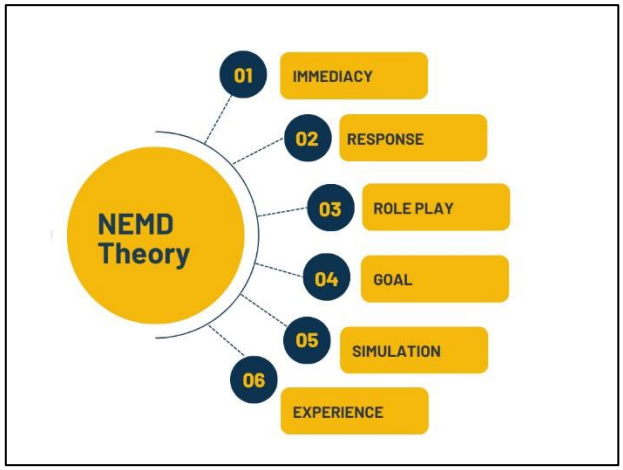


Chart 1: NEMD Theory

The NEMD Theory outlines six important factors, namely immediacy, feedback, goals, roleplaying, construction, and past experience. Immediacy, in the context of multimedia storytelling, can be translated as a responsiveness that can influence interactive activities, the speed of input and output production, which generates enjoyment. Direct manipulation with multimedia will make users feel like they are moving and interacting with the multimedia content being used. This factor can help maintain the level of engagement and also enhance user behavior patterns.

The intervention tool used in this study is the Storytelling Augmented Reality Kit, commonly known as STAR KIT. It is a storytelling set comprising five different scenario storyboards, 10 characters that can be manipulated, a storybook, and the STAR KIT application. STAR KIT represents the latest innovation in the field of child education, particularly in cultivating moral values through storytelling approaches. STAR KIT incorporates hybrid technology, which combines physical elements (storyboards) with Augmented Reality (AR) technology. However, in this study, the researcher focused solely on the physical components without involving the technological aspects in collecting data related to the narratives created by the study subjects to assess the creative elements.


Picture 1: Game board STAR KIT

The simulation factor in this theory is closely related to fostering creativity. This factor aims to ensure that user enjoyment is enhanced. It demonstrates that users can achieve maximum enjoyment and engagement when a multimedia presentation allows them to use their imagination fully. Users should be given the opportunity to explore creativity from their imagination and experiences. The more opportunities are provided for constructing and creating, the greater user engagement can be achieved within a multimedia context. In the conducted study, subjects had the opportunity to determine the endings of their own stories, and the construction of these stories was the result of their imagination and creativity. The findings of this study support the statements made by Xiong et al. (2022) Lucchiari et al. (2019), and Ganieva (2022), which suggest that providing a conducive and creative learning environment encourages children to explore and express their thoughts and ideas more effectively without any constraints.

Furthermore, the "past experience" factor in this theory also influences the outcomes of stories generated by users. This is because this factor plays the most crucial role in user engagement behavior. With past experiences, users are able to plan, monitor, and assess cognitive strategies crucial in determining the level of engagement. These skills are primarily acquired through experiences. In the context of multimedia storytelling, the past experience factor is considered the most important because users rely on the experiences they have gained from their environment, and these experiences are translated into their storytelling throughout the storytelling activity. Therefore, the NEMD theory is highly suitable for investigating the relationship between idea generation conducted by preschool students when they use multimedia storyboards.

The study consists of two stages: the procedure for storytelling sessions without and with multimedia, data collection, and data analysis. Prior to the storytelling sessions, the research subjects are informed about how to use the STAR KIT storytelling set. Following these instructions is essential to ensure the authenticity and validity of the study's findings. The researcher takes a period of 5 weeks between the storytelling sessions without and with multimedia to record and collect the second set of data. This is done to ensure that the research subjects do not recall what they had previously done during the storytelling sessions without and with multimedia.

The chosen study subjects are Malay-speaking students who also come from the same ethnic and rural background. Since this study focuses on children's oral speech aspects in activities involving multimedia, all language-related activities during storytelling sessions, both with and without multimedia, will be recorded and analyzed. In line with the research's objectives, the

aim is to observe and understand the phenomena that occur when exposed to a specific element under investigation. What needs to be gleaned from the sampling process is the depth, complexity, and richness of data (Connaway & Powell, 2010). Therefore, the purpose of this study is to comprehend phenomena, rather than to make generalizations and conclusions. -*Tracked changes*

Picture 1: Storytelling session without multimedia

Picture 1: Storytelling session with multimedia

**Findings and Discussion**

In this study, the subjects were provided with the same brief story during the storytelling sessions without and with multimedia, titled 'Respecting Others.' The researcher read the story to them at the beginning of the session, and in the middle of the story, the subjects were asked to continue the narrative using the multimedia materials provided. They were encouraged to use their imagination and creativity to complete the story. The following is a summary created by the researcher based on the verbal statements made by the subjects during both storytelling sessions.

Storytelling development without multimedia:

> *…David felt bored and went to the kitchen, surprising his mother who was cooking. At that moment, his mother was handling a knife and got cut when startled by David's presence. She groaned in pain, and blood started to flow from the wound. His sister instructed David to call their father. His father said*

*he would come home immediately. His father took his mother and grandmother to the clinic. David felt sorry and guilty for causing his mother's injury, and he cried. The sound of an ambulance could be heard, and his mother was taken to the hospital. David apologized to his mother and promised never to repeat that mistake again.*

Storytelling development with multimedia:

*…David went to the kitchen, and his mother was cleaning fish. His mother was singing while cleaning the fish, and David surprised her. His mother was startled and screamed. She immediately called his sister and instructed her to call their father. His sister asked why they needed to call their father, and their mother explained that her hand was bleeding a lot. His sister quickly called their father and explained the situation. Their father asked who had caused their mother's hand to bleed, and his sister told him it was David. Their father said he would come home immediately.*

*Upon arriving home, their father greeted everyone, and his sister informed him that their mother needed to go to the hospital. Their father advised David not to do such things to their mother again. David replied that he wanted to sleep. Their mother told his sister that she should be taking a bath, and his sister responded that she had already bathed. Their grandmother was still wondering why David had taken her remote control. Their father once again advised David to behave well towards everyone. He directed everyone to gather in the bedroom. Their mother said they were all going to the hospital. Again, their father advised David, but David replied that he wanted to sleep. His father instructed David to apologize first, and David apologized to his mother and then went back to sleep playfully. His father, mother, and grandmother forgave David. David then apologized to his grandmother and father. His sister immediately invited everyone to go to the hospital.*

From the two stories created by the subjects, significant differences in the construction and plot of the stories can be observed. During the storytelling session without multimedia, the story generated by the research subjects was relatively brief, with a straightforward and uncomplicated plot. The story was also based on the narrative they had heard before the storytelling session commenced. However, during the storytelling session with multimedia, the constructed plot varied, and there were elements of emphasis, such as the father character repeatedly instructing David to apologize. Subject 4 played their role more effectively and produced several types of sentences that were appropriate to the characters and the storyline.

In terms of time duration, the subjects completed their stories in 9.01 minutes during the storytelling session without multimedia, whereas in the storytelling session with multimedia, it took them 6.43 minutes. The difference in time duration between the two storytelling sessions reduced by 2.58 minutes, representing a -28.6% decrease. Although the time duration decreased, it was found that the research subjects were able to develop their stories in a more interesting and complex manner when storytelling with multimedia compared to without multimedia. This demonstrates that the selection of the right type of multimedia can

maximize student engagement in learning activities and enhance their understanding (Nazmi, 2019 & Lucchiari et al., 2019).

The development of the story arises from the questions posed by the well-acted story characters by the research subjects, making the story more dynamic and engaging. The production of diverse sentences and new ideas contributed by the stimuli received (Griffith et al., 2008; Bus, Takacs & Kegel, 2015 & Zulkifli et al., 2022) had an impact on the development of the plot and helped the research subjects create more numerous and varied statements. For example, the character of the father, played by subject 4, played a significant role in the development of the story during the storytelling session with multimedia. Subject 4 diversified the types of sentences, such as statement sentences, interrogative sentences, imperative sentences, and exclamatory sentences when storytelling using the STAR KIT storyboard. The variety of sentence production indicates that the subjects were striving to express their ideas based on the storyline, the characters they were portraying, and the multimedia illustrations provided.

The presence of multimedia also contributes to the generation of ideas throughout the storytelling sessions with multimedia. For example, when the research subjects were storytelling using the multimedia storyboard, they were able to construct sentences based on the location and visuals provided. For instance, subject 3 greeted with "Assalamualaikum" upon entering the house, and this statement was not present in the storytelling session without multimedia, even though the situations were the same in both stories. Additionally, the sentence "Yes, I want to sleep...” uttered by subject 3 while placing the doll on the bed also demonstrates that with the presence of multimedia, research subjects can use their imagination based on the visuals they see and produce sentences that are appropriate to the situation (Gayatri, 2018 & Bus, Takacs & Kegel, 2015; Zulkifli. Het al., 2022). The findings of this study have addressed research objective 1, which is that children can develop stories and generate new ideas when exposed to multimedia stimulus materials.

Regarding the cultivation of moral values, the researcher found that children were able to incorporate moral values into their stories more effectively during the storytelling sessions with multimedia compared to those without multimedia. When the researcher asked, "So, in conclusion, we should respect?" during the session without multimedia, the research subjects only replied with "ibu" (mother). The most appropriate answer should have been "respecting others," based on the chosen story title. In contrast, there was a different emphasis on moral values during the storytelling session with multimedia. When the researcher posed the same question, the research subjects responded strongly with "Respecting others!" This indicates that the research subjects understood the moral values taught and conveyed by them more effectively with multimedia compared to without it. Furthermore, the character of the father repeatedly instructing his child to apologize to the mother for the mistakes made. Hence, these findings address objective 2 in this study, which is 2. Evaluating the moral values embedded in the stories without and with multimedia.

From these findings, it is clear that the provision of a creative learning environment and the use of creative teaching materials have an impact on understanding, the smooth expression of ideas and views, and the willingness to voice opinions (Yates & Twigg, 2017; Dere, 2019). Furthermore, storytelling activities using multimedia have the potential to enhance the creativity of preschool children, as they encompass other activities indirectly such as playing, engaging in drama, and spontaneous speech, all of which can also boost creativity.

Additionally, it can be said that the rich and stimulating environment created in the classroom, which supports creativity, has a positive impact on the creativity of children.

**Conclusion**

The incorporation of moral values through multimedia materials that have the potential to maximize the cognitive and affective skills of children needs to be emphasized. The selection of this multimedia has a long-term impact on language mastery, critical thinking skills, creativity generation, and children's character development. Therefore, this study can serve as a guide for the multimedia elements that can be highlighted and utilized by educators in effective language learning activities. The findings of this study can also serve as a Multimedia Storytelling Model not only for school students but can also be utilized by corporate professionals who want to master language skills using a storytelling approach. This approach also meets the criteria of 21st-century learning, which emphasize communication skills, collaboration, critical and creative thinking skills, as well as moral values in the holistic development of children as outlined by the Ministry of Education in the Malaysia Education Development Plan 2013-2025.

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