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WHEEL OF LIFE: TEACHING SCIENCE THROUGH AN ADAPTED VERSION OF SPIN THE WHEEL GAME

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Abstract

The research attempted to examine a teaching aid designed to teach basic learning skills of recognizing, naming, and describing among preschool children on a science topic. The teaching aid referred to as "Wheel of life" is based on the conventional concept of a board game that allows

unpredictability and control. Preschool teachers often find it difficult to get children to pay attention during class and this could hinder them from gaining understanding on how to link different pieces of information and explain them properly in any specific topic. Thus, this research aimed to explore the potential of this game in increasing children's level of engagement in the lesson to the extent of being able to link different pieces of information. A popular science topic related to life cycles of different animals was chosen since it was one of the most difficult topics to teach in science lessons for preschool children. A group of six children, along with a teacher, was chosen as subjects for this study. There were two research methods: observation through a checklist on the children's behavioural responses and semi-structured interviews for the parents and teachers. The findings from this research revealed children's increased level of engagement in the classroom as they challenged themselves to identify the right answers within a competitive yet collaborative atmosphere.

Keywords

Teaching Aids, Screen Time, Preschool, Board Game, Basic Learning Skills

1. Introduction

Preschool education is the prerequisite of children's formal education and this necessitates the heavier emphasis on teachers' ability in nurturing young learners' skills and interest by providing them an exciting and interactive learning experience. This suggests that teachers must be well-versed in utilizing a variety of teaching materials and methods in order to increase children's level of engagement in the class. Malaysia Ministry of Education (2010) encourages preschool teachers to be innovative by offering them opportunities and platforms to develop and adapt numerous teaching approaches and aids that could assist them in their practice. This includes preschool teachers who play a major role in educating children at a younger age so they can master the basic yet fundamental skills and strategies that will help them in their future schooling.

This research project introduced and examined a teaching aid developed for the purpose of teaching the preschool students on the basic names and characteristics of animals. The teaching aid referred to as "Wheel of Life" comprised two main components: a rotating wheel-shaped board and darts. The wheel could be spun to increase the level of the difficulty of the activity. The dart was the object that the children used to hit their targets on the board. The wheel and the dart were magnetic which allowed them to attract and attach to each other. This eliminated the need for the darts to be sharp. The wheel depicted different images of animals and the children were expected to name and describe the animal picture that they hit when they threw the dart. The basic cognitive and language skills they were expected to develop were recognizing, naming, and describing. To a lesser extent, it

was also a lesson on basic science since the learners needed to recall their background knowledge as well as facts from past lessons to describe the different stages of how certain animal species evolved.

Figure 1: *The Prototype of Wheel of Life*

Figure 2: *The Authors explaining the Project to Visitors during a Board Game Convention*

Figure 3: *Preschool Children during the Classroom application of the Project*

2. Problem Statement

There was a lack of variety in teaching materials that were available in most preschools. This could hinder teachers from maximizing the interactive and engaging learning environment that involved more kinaesthetic styles and tactile approach. If teachers were not able to diversify their learning activities and utilized a wide range of teaching materials, they might not be able to draw and retain the children's interest in learning through hands-on activities and physical as well as social interaction. Hence, this research project sought to introduce a new teaching aid known as "wheel of life" and examine its potential in assisting teachers to implement engaging learning activities.

Teaching preschool children had become more challenging with the increasing screen time that reduced children's attention span while making them more attached to their devices to the extent of developing addictions. However, these growing issues called for teaching techniques that could encourage these children to explore social interaction and hands-on activities in order to overcome their overreliance on gadgets. In order to counter screen time, teachers at preschools required a variety of teaching materials that could capture' children's attention and keep them engaged actively in learning activities.

3. Research Questions

1. What were the young learners' responses when the teaching aid was used in their class?
2. What was the teacher's perception of the potential of the teaching aid as educational material for preschool children?

4. Use of Teaching Aids among Preschool Teachers

Preschool teachers are aware of the importance of teaching aids in teaching children but certain factors like a limited variety of teaching aids, lack of preparation time, and inadequate training might influence preschool teachers' decisions in utilizing more teaching aids in their lessons. Rajapaksha and Chathurika (2015) conducted research on 20 public preschools in several states in Malaysia and found that almost all of the preschool teachers used teaching aids frequently in their lessons and more than half of them believed that teaching aids were very useful in teaching. It was also discovered that teachers utilized a range of teaching materials such as flashcards, concrete objects, toys, charts, electronic devices, and boards. However, some of the preschool teachers claimed that they had limited teaching aids and this caused them to rarely use any in their lessons. Another research carried out by Suppiah and Norwahida (2014) revealed that although Malaysian preschool teachers were able to put an effective teaching approach into practice, they lacked creativity in planning their lessons. Nachiappan et al. (2018) argued that Malaysian preschool teachers did not have enough time to prepare their teaching aids and this resulted in the decreasing emphasis on the usage of teaching materials in their lessons. It was suggested that teachers required training in improving their creativity and their schedule should allow them more time to develop an alternative approach for their class. These past studies suggested how important it is to understand the issues that preschool teachers had in class in order to devise possible solutions based on their needs.

According to Onu et al. (2010), children who attended early childhood education programmes that were child-directed and less academically performed better in creativity and skills assessment than children who attended programmes that overemphasized drilling and memorization. These findings were consistent with most studies in the education system that suggested learner-centeredness and practical experience might have better effects on learning. Hence, having multiple options of teaching aids that could be used in preschool lessons could be vital for teachers in delivering quality education to children.

5. Strategies in Reducing Children's Screen Time

According to Clemer (n.d.), there are recommended strategies on how adults can help children reduce their screen time by getting them to do other activities. These strategies were adapted from Montessori approach: get physical, encourage independent play, get them started and back away, implement a routine, and prepare the environment. The first strategy requires the incorporation of movement into children's indoor times through distance games that necessitate them to move physically. The second strategy is to encourage them for independent activities that they can do without their parents or adults. The next strategy is to assist the children in doing an activity before gradually letting them do it on their own without the assistance of the parents or other adults. The fourth strategy is to implement a routine so the children become accustomed to scheduled activities and the final strategy is to prepare a safe and supportive environment for them to engage in these activities. These five strategies were consistent with how "Wheel of Life" can be introduced to preschool children and integrated as their regular activity.

6. Methodology

A preschool class located in the interior region of Sabah, a Malaysian state, was chosen as the subjects for this research. There were seven children aged 4 to 6-year-old who came from diverse indigenous backgrounds in the class and one teacher who volunteered to partake in this study as respondents. There were two main instruments used to collect data from the children and the teachers: observation checklist and semi-structured interviews. The research observed the children during the lessons where this teaching aid was used and recorded their behavioural responses while the adults were orally interviewed.

The observation checklist focused more on the children's behavioural responses towards the teaching aid "Wheel of Life" as interpreted by the researchers. Their behaviours were categorized into "yes" which indicated that they exhibited the specific responses as listed and "no" if they did not display the specific behaviour. Another section "remark" was for the researcher to record any interesting responses that should be taken into account.

The interview questions were designed to elicit the teachers' opinions on how effective the teaching aid was in capturing the children's attention, retaining their interest, and improving their understanding.

7. Findings

The data from the two instruments, checklist, and interviews, were analysed in order to determine how the children responded to the teaching aid and what the teachers and parents thought about its potential. Table 1 indicated the observed behaviour of the children during the research. The seven children were represented by the numerical indicators of 1,2,3,4,5,6 and 7.

Table 1: *Subjects' Observed Behaviours*

No.	**Items**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	The children responded to the teachers	/	/	/	/	/	/	/
2	The children were actively involved in the activities	/	/	/	/	/	/	/
3	The children worked well in a team	/	/	/	/	/	/	/
4	The children were able to provide answers to questions given to them.	/	/	/	/	/	/	/
5	The children exhibited an interest in the activities	/	/	/	/	/	/	/
6	The children remained motivated throughout the activities	/	/	/	/	/	/	/
7	The children were attracted to the teaching aid	/	/	/	/	/	/	/
8	The children were able to understand the topic	/	/	/	/	/	/	/

The responses from the observation behaviour suggested that the children expressed enthusiasm in taking part in the activity while displaying collaboration, accuracy in answers, and an adequate understanding of the topic that was being taught to them. This implied that this teaching aid was effective in enabling them to understand the subject matter through active participation in the learning activities. Clemer (n.d.) proposed several principles on how to reduce children's attachment to mobile gadgets which includes the need to encourage them to immerse themselves in independent play within a safe and supportive environment. The collaboration that these children exhibited when playing the game signified the successful diversion of the children's attention from mobile devices by stimulating their level of engagement in this activity.

This finding was corroborated with the data from the interview as the teacher explained how the students were working together in getting the correct answer for each question while offering them a level of healthy competition that encouraged them to think harder. The teacher also highlighted the level of motivation that the children exhibited during the task as the appeared enthusiastic and engaged in taking their turns to throw the dart and answer the questions that they received. It is common for school education regardless of levels to fall into an exam-oriented mode

that learners are being drilled to prepare for written tests, introducing games that encourage play and learning might trigger children's motivation more effectively as past research showed that children developed creativity and skills better through activities that are less academic and learner-centered (Onu et al., 2010).

8. Conclusion

It could be deduced from the data that "Wheel of Life" might have the potential to be introduced to other preschools and tutorials on how to utilize this teaching aid in preschool lessons might help teachers in understanding this technique. Hence, this teaching aid should be studied further in order to make it more feasible to be carried out in any classroom environment.

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