



Developing a health education game for preschoolers: What should we consider?

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KEYWORDS

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Health education;
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Abstract

Objective: To provide a comprehensive picture of what preschoolers prefer in computer game so that such game may be developed as a medium in health education. This is an important step to attract the children's attention so that the learning objectives from the educational game can be achieved.

Method: This study used descriptive qualitative approach and involved seven children aged from three to six years. Purposive sampling was used to choose participants in accordance with the inclusion criteria. Participants were also chosen on the basis of whether they had good communication skills based on evaluation by their teachers. Data were collected through interviews and observation of types and models preferred by preschoolers followed by the analysis process using the Colaizzi method.

Results: Research showed there were three characteristic features of games preferred by preschoolers: 1) main character was preferred to be a moving creature, contain elements of fantasy, and have an attractive appearance; 2) game model was favored when it involved activities and rewards, and 3) the use of bright colors, particularly primary and secondary colors.

Conclusions: To develop an appealing game for preschoolers, features such as the main character, activities in the games, and bright colors should be considered.

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Introduction

Preschool is a good period for children to learn at their full potential. This period is instrumental in the formation of concepts and constant ideas. Applying an important concept in this period will help develop a child's mindset at a later date. Preschoolers may learn through play activities. Along with the rapid development of technology, the type of game preferred by preschoolers today is the computer game. Children aged 2-7 years spend an average of 3-5 hours in a week playing

video games¹. In Indonesia, children spend an average of 1-2 hours per day, twice a week, playing computer games².

A game is an activity that helps children achieve full physical, intellectual, social, moral, and emotional development. Games can help children—particularly school age and preschool children—improve their learning ability³. They are also effectively used as a health promotion approach to improve health behavior in children⁴.

Educational games are effectively used in improving linguistics⁵, mathematical logic⁶, and for motivating preschool-

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ers to learn new skills⁷. A game is a device that teaches its users to learn how to solve problems and get the best solutions⁸. Game-based learning requires active participation from the players to experimentally make decisions and solve problems, which stimulates analytical thinking, synthesis, and evaluation⁹. The initial step in providing education to change behavior is to seek and gain the desire to learn⁴.

The active participation of a player is mainly determined by the player's interest in the game and the player's ability to learn from that game. Therefore, the first step to provide education to preschoolers through game-based learning is to design a game that appeals to the target group of its players. Considering the potential of gaming as one of the strategies to teach health education to preschool students, this article contains a description of the type of game favored by preschoolers as an input in designing an effective game for education.

Method

For the purpose of this study, a descriptive qualitative approach was used to obtain more comprehensive information from the children. The study was conducted in two kindergartens in South Sulawesi. Participants were boys and girls from 3 to 6 years and able to play Android-based games. In total, there were seven participants. Informed consent was provided by parents or guardians. Only children with permission from parents or guardians served as participants. Participants were chosen purposively. They were selected by the teachers based on specific criteria as well as their communication skills. Data were collected to obtain saturated data.

The guidelines used in interviews were compiled by researchers and validated by experts in Early Childhood Development, who reviewed how to gather information from preschool children. Before conducting research, permission was gained from the Research Ethics Committee of the Faculty of Nursing at the University of Indonesia.

Data were collected through face to face interviews and observation of gameplay. Instruments used during the interviews were a cell phone voice recorder to record the information from participants, a pen and a notebook to make field notes on the observations of non-verbal responses of participants during gameplay. Data were analyzed using Colaizzi by identifying meaningful information through the coding process, organizing data into themes or categories, writing memos, and performing data interpretation or analysis.

Results

Based on the purpose of this study, three themes emerged related to the games: appealing characteristics of the main character, game type, and the use of bright colors.

Characteristics of the main character

In this study, participants revealed that the highlight of the game was the appealing main character. A good character would be a creature or moving object; it could contain ele-

ments of fantasy, and it should have an attractive appearance. Creatures or moving objects could be animals, people, or forms of transportation. The last option of transportation was only mentioned by the boys.

"[...] birds [...] Hello Kitty... and Minnie Mouse" (Ad).

"eeee hmmm Sophia... because she is a princess" (Rn).

"What is your favorite thing in a game? Train and cars" (Nf).

"Other than airplane, is there any other thing you like in a game? An airplane in a car" (Fb).

The preschoolers also conveyed that a main character was appealing if it contained elements of fantasy. Elements of fantasy preferred by preschoolers were special power or strength and game presentation in the form of cartoons or animation.

"What is so good about Bima? He can turn into robot" (Fb).

"[...] I took his power, so he was not strong enough to beat me" (Nf).

Another thing favored by preschoolers in a main character of a game was an attractive appearance. Nice clothes and accessories and a distinctive style were mentioned as elements of an interesting appearance of a main character in a game.

"What is so good in that game...? The people, and also the clothes" (cNf).

"What do you love from a princess? Her crown... her clothes and animals" (Rn).

Type of game

Characteristics of game types favored by preschoolers included activities, gifts (rewards), and in-game variety. Activities preferred in the form of gameplay were activities such as nurturing or caring for the main character, objects or color matching, coloring, shooting, drawing, taking orders, and anything that involved a rush of adrenaline.

"There is a game in my mother phone about taking care of babies who cry after being put down" (At).

"[...] Any other games you like? Cooking games..." (Ny).

"What type of game you like to play? Game consists of running" (Nf; Ir).

"Usually there are taking order games whereas we take order from the visitor of the restaurants. We have to match the color of the visitors" (Rn).

An observation was made that, out of four games chosen by the boys, three of them were shooting activity games... (Fb; Nf).

Preschool children also expressed a preference for in-game gifts (rewards). These could be either trophies, novelties or high scores in the game. Preschool children get easily bored and therefore enjoy a variety of games. Here are a few phrases from the participants:

"He really wants to have the trophy fast. If he gets 9000, he can get the trophy" (Ir).

"What is so good about football game? To get new people/players" (Nf).

Results from the observation team revealed that, on average, children played three types of games within 10 minutes.

Selected color

Another interesting aspect of a game is color. Participants revealed that they favored bright colors: primary colors and

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