

Conference Paper

Developing Children's Financial Quotient (FQ) Through the 'Tangga Uang' Educational Game

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Abstract

Financial literacy needs to be given since childhood because it will make individual growth easier to understand financial intelligence and life skills. The form of the game has an important role in internalizing the values to be invested. The game of money ladder has the advantage of side; design logo, color, content and message of education, psychology. The results shown from the games played by children that children begin to enjoy simple knowledge related to financial literacy. The role of the family remains necessary to accompany and explain knowledge into simple language.

Keywords: Financial literacy, Motor psychology of children, The game of money ladder

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Received: 8 June 2018
Accepted: 17 July 2018
Published: 8 August 2018

Publishing services provided by
Knowledge E

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Selection and Peer-review under the responsibility of the 2nd ICVHE Conference Committee.

1. Introduction

Financial literacy is a knowledge and ability to manage finance. In daily life, many people do not understand about management finance in a proper way. Concerning the phenomenon, as a part of academic community, writer interested to help the government in a case of participating to encourage financial literacy for Indonesian society. The study focus of financial literacy is to educate children at primary school age, because embedding aspects of financial literacy is better in earlier ages, so that they will be able to understand the basic concept of finance, the perspective of money, and have the attitude and behavior to manage money carefully in order to developing children's financial quotient thus provide hope for a better future.

Related to the level of financial literacy in Indonesia that is still low, then the question are: (1) What kind of characteristic's game configuration that can support children's growth and development in order to develop children's Financial Quotient (FQ) and motor skills? (2) How to develop the product of educational game to support financial quotient need of children? (3) How results of product testing of educational game?

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Before answering the question, writer would like to explain that the type of writing this article is relatively descriptive which describes the current level of financial literacy in Indonesia is still in a low level. Compared with other countries in the Asia Pacific region, Indonesia's rank is not better. The output of this article is a product of learning media for children to introduce them about basic finance.

The answer of aforementioned question is that the writer would like to present a form of financial literacy education which can develop financial quotient by considering several aspects, such as child-friendly, environmentally friendly, and also friendly to children's growth and development in a form of game. Financial literacy education which is embedded to children in a form of game is also help the role of parents to educate their children pleasantly.

2. Theoretical Background

In the process of making 'Tangga Uang' has been supported by some theories, which are; understanding basic finance theory, stages of children development, and color theory or well known as Chromotherapy which were used to design the form of the game, apply psychological game aspects, ensure financial nomenclatures in the game, and make the rules of game of 'Tangga Uang'.

2.1. Intellectual development

The main function of playing is to stimulate the development of sensory, motor, intellectual development, social development, creativity development, self-awareness development, moral development, and play therapy (Supartini, 2004: 125). Play therapy is also structured to support self-care skills, the ability to perform certain activities, adaptation to the environment, self-skill for the readiness of work in society (Sukinah, n.d.). Playing can be done using an Educational Game Tool (APE) which is a game tool that can optimize child development and is useful for the development of physical, language, cognitive, and social aspects of the child. The basic concept of APE is designed to stimulate the child's motor skills, stimulate emotional social skills, stimulate capability (intelligence) (Tarmansyah, 2003: 33-34; Nursalam, 2005: 78).

Snake and ladder game is perfect for elementary school age children. Given this game is in line with the physical development, cognitive, child psychology 6-12 years of school age, namely: (1) Physical Development Physical growth of children at primary school age tends to be more slow and consistent when compared to early childhood.

The average age of elementary school children gained weight around 2.5–3.5 kg, and the increase in height 5–7 cm per year. Therefore this period is also often called a calm period before the end of adolescence. (Santrock, 1995). (2) Cognitive Development Along with the inclusion of children to elementary school, cognitive abilities sequence experienced rapid development. Because by going to school, the world and the interests of children are growing. With widespread interest there is also a growing understanding of humans and objects that were previously less meaningful to children. (3) Development of Psychology The development of a child as noted earlier is not only limited to physical development but also to its psychological development: mental, social and emotional.

According to Kolhberg's Theory of analyzing the development of children ages 6 to 12, it also divides it into two stages:

a. First stage: 6–10 years of age.

At this age children still think pre operational thinking is random, ambiguous and not yet organized. At this age the visual perception becomes more effective and the child can maintain concentration for longer periods of time. To form a skilled and intelligent child should start from an early age.

We can lay and instill the foundations of easier knowledge to the child so that children can more easily accept it. One of them with color. Color in early childhood is very important for the development of brain nerve. In addition to visual sensitivity to vision, color is also beneficial to improve thinking power and creativity of children. The role of colors in the game is as follows: Stimuli, that color acts as a stimulus, using bright colors the child loves and attracts attention such as red, yellow and orange colors stimulate the child to engage and imagine Evaluation of child development. Color is an important element for evaluating the development of children, for example children are given objects with the same shape remains different or vice versa but the same color, puzzle, various figures and so on. Focus and distract attention. If you want to focus the child on something, give colors that attract attention, for example, red. Conversely if you want to distract, give colors that are not attracted attention, such as brown, gray.

b. The second stage: the age of 10–12 years.

At this age, according to Kolhberg, he was able to think wisely. It is characterized by his behavior in accordance with moral rules to be liked by adults, not for fear of punishment. So doing good for children of this age is more valued from the goal. He became a child who knew the rules. Based on the aforementioned description

we can know that the age of school is a period of study. At this age the child is also called the intellectual period, because it is the first stage of the child to use some of his time to develop his intellectual abilities. In support of physical, cognitive and psychological development in early childhood is actually a conventional game has a good benefit for the development of children. Many things that children get through the process of playing such as developing the power of creativity, develop emotional intelligence and intellectual children, train children's motor skills, and improve the ability to socialize.

What are the shared effects of various media on children in general? What are the diverse effects on children as individuals who experience media at different ages, with varying backgrounds and perceptions? What immediate and long-term effects have been cultivated by media exposure? The outcomes for children of mass media experiences are sometimes difficult to sort out because of the many variables involved—variables that change over time (such as child's age or a family's economic situation) and that may be bidirectional (such as a child's cognitive ability enabling him/her to understand a TV show while at the same time the show is enhancing his/her cognition). According to reviews of the research (Comstock & Scharrer, 2007; Hofferth, 2010):

1. Child variables include age, cognitive ability, gender, social experience, and psychological needs.
2. Family variables include economics, affecting what media are purchased (videos, books, CDs, computers, game consoles, cell phones, MP3 players); time, including what alternative leisure activities are pursued (games, sports, museums, trips); and mediation, or how much adult supervision accompanies media exposure.
3. Bidirectional variables include what the child brings to the media experience to change it (for example, computer knowledge can enable one to download various software) and how the media experience changes the child (for example, surfing the Internet can provide vicarious experiences such as travel). "It is not what the media does to people but what people do with the media" (Lull, 1980, p. 198).

2.2. Financial Quotient (FQ)

Nowadays, the definition of intelligences also rapidly growing that appears new aspect which can develop human intelligence called as Financial Quotient. According to Robert T. Kiyosaki, financial intelligence is divided into 5 'Financial IQs' are making more

money, protecting your money, budgeting your money, leveraging your money, and improving your financial information. All of those will be used to improve human skills to plan their financial.

In order to supporting the development of physical, cognitive, and psychological in early age, actually conventional game has some good benefits for growth and development of children. There are many things that could be learned by children through the process of playing such as develop children's emotional and intellectual intelligence, practice motor skills, and improve social skills.

'Tangga Uang' is also using an attractive 3D effect so that impress the living and attractive emoticons so that children are easier to understand the meaning of nomenclatures which are visualized attractively and fun. This game can be a tool for parents and teachers in providing financial education for children. Then if possible, active participation of parents and teachers to accompany the child during playing this game is expected in order to provide more financial information to children.

2.3. The Ladders Snake Game

The ladder snake is a board game for children played by 2 or more people. Board games are divided into small boxes and in some boxes drawn a number of 'ladders' or 'snakes' that connect it to other boxes. The game was created in 1870. There is no standard board game in the ladder snakes - everyone can create their own boards with different boxes, snakes and ladders. Each player starts with the bottom in the first box (usually the box in the bottom left corner) and in turns throws the dice. The piece is executed according to the number of cubed eye that appears. When players land on the bottom of a ladder, they can go straight to the other end of the ladder. When landing in a box with a snake, they must descend to the box at the bottom of the snake. The winner is the first player to reach the last box. Some of the benefits of snake game is among others:

1. Know the consequences of a decision to lose and win. B. Learn to work together and wait their turn.
2. Develop the imagination and remember the rules of the game.
3. Stimulate children learn pramathematics that is when calculating the steps on the game and counting the dots that are on the dice.
4. Learn to solve problems.

Technologies today is rapidly growing that make children more interested to playing gadget that tend to negative impacts for children development such as children's memory getting slower so may lead them difficult to learn, lazy to move, risky of radiation, and inhibit psychological development of children. There are several benefits of playing snake ladder, among others:

1. Game media snake ladder can be used in teaching and learning activities because this activity is fun so that children are interested to learn while playing.
2. Children can participate in the learning process directly.
3. Game media snake ladder can be used to help all aspects of child development one develops logical intelligence logic.
4. Game media snake ladder can stimulate children to learn to solve simple problems unnoticed by the child.
5. The use of a ladder snake game can be done both indoors and outdoors.

3. Methods

The methods using to develop product of 'Tangga Uang' educational game, generally can be explain in several steps, as follows:

1. Observation and literature study
2. Designing contents of financial literacy fits with kids understanding
3. Designing attractive design of game board and some icon
4. Develop the prototyping
5. Testing of prototyping and improvement
6. Testing product to user
7. Measurement and analysis of testing result
8. Final improvement
9. Commercialization

The data collection of this article is using secondary data which were obtained from financial literature books and trusted articles especially related to finance, growth and development of children at primary school age.

'Tangga Uang' is a form of a game that can be used as a learning media of financial literacy to develop children's financial quotient and motor skills. This game is basically a game of 'Ular Tangga' which modified in such a way by inserting financial elements and 'Gamecard' that are intended to children aged 8–12 years by providing financial literacy education pleasantly.

As a proof of 'Tangga Uang' can develop financial quotient (FQ) and motor skills of children, a testing has been implemented to one of the elementary school in Jawa Barat where is SD Cisarua Sukabumi on Monday, May 8th 2017 at 10.30 o'clock. The participants are 35 students of 4th grade and 39 students of 5th grade with ages between 10 and 12 years old.

The testing was taken for about 1.5 hours that started with explained an introduction of 'Tangga Uang' then continued to informed how to play this game. After the children were understood and ready to play, the game was started. To finish one round game of 'Tangga Uang', it was taken for about 30–40 minutes in overall.

How do children very interesting and joyful to play Tangga Uang educational game? Actually in this game, there are many interesting things that give a challenge to the players in the form of 'Kotak Kejutan' and accompanied by 'Gamecard'. Beside as a reward or a punishment statements, the 'Gamecard' also plays an important role as financial education media with an easily understood style of language.

In the process of developing financial quotient (FQ) and motor skills of children are within the process of playing this game. Children would have a fun learning experiences and the game play will be explained further in the article completely.

In conclusion, the low level of financial literacy in Indonesia becomes necessary a special attention to be improved. In the economic era of free trading, Indonesian people are supposed to be well-literate in financial. In order to improve financial literacy level in Indonesia, so 'Tangga Uang' is created as an attractive education media for children to learn about finance pleasantly.

To analysis result of testing, writer use simples statistic tool which can describe three observation, are: (1) The children's interesting to the 'Tangga Uang' educational game, (2) The children's understanding to the contain of the game, and (3) The implementation of learning in playing the game.

4. Result and Discussion

The final product of 'Tangga Uang' educational game has attractive contents as follow:

TABLE 1

	<p>Design logo of 'Tangga Uang' gives effect of artistic, dynamic and fun</p>
	<p>Design of game board 'Tangga Uang' embedded composition effect of chromo therapy and 3D</p>
	<p>Design of literacy content of 'Tangga Uang' gives example of money saving</p>
	<p>Design of literacy content of 'Tangga Uang' gives example: banned of corruption</p>
	<p>Design of literacy content of 'Tangga Uang' gives consequences: prison</p>

The result of this testing is a positive response from children that they were very enthusiastic to play 'Tangga Uang'. After those children played 'Tangga Uang' until the end of game, a simple questionnaires has been given to the children in order to examine that this game will bring out some positive impacts to children which can develop financial quotient (FQ) and motor skills of children. And the result of those questionnaires is 'Tangga Uang' was catchy and attractive to children. The result of those questionnaires will be displayed as follows.

Based on the testing of 'Tangga Uang' was done with children shows the result as follows:

1. The children's interesting to the 'Tangga Uang' educational game

- (a) The children's joyful response to the 'Tangga Uang' educational game. The children's response shows the result that 76% of children said that this game was so fun and the other 24% of children said that this game was fun. There is no response from the children that the game was pretty fun or not fun.
 - (b) The children's response to the convenient of playing the game of 'Tangga Uang'. The testing shows the results that 78% of the children said that this game was easy to played, with the details of 30% of the children said they were highly agreed and 48% were agreed, only 21% of the children's response said that the game was quite easy and the other 1% express their disagreement of the statement that the game was easy to played.
 - (c) The children's response to their interests to the coloring visualization. The children's response to the question about coloring visualization (Chromo therapy effects) shows the result that 97% of the children said the visualization was so interesting with the details 68% were highly agreed and 29% were agreed. Only 3% say that they were quite agreed.
 - (d) The children's response to their interests to the image visualization (3D effects). The children's response to their interests to the image visualization shows the result that 90% of children said that the visual figure or picture was pretty interesting with the details 63% said that they were highly agreed and 27% were agreed. Only 9% said that they were quite agreed and 1% express their disagreement.
2. The children's understanding to the contain of the game
 - (a) The children's response to their understanding to the meaning and interconnectedness of the image. The children's response shows the amount of 66% of them were understand completely with the details of 37% were highly agreed and 29% were agreed. Meanwhile, 20% of the children said that they were quite understand, and 13% express their disagreement, and the other 1% were highly disagree.
 - (b) The children's response to their understanding to the information contained in the game (knowledge aspect). The children's response shows the result that 65% of them were understand the information contained in the game with the details of 38% said that they were highly agreed and 27% agreed. Meanwhile, 21% of them were quite agreed, 8% disagreed and 6% highly disagreed.
 3. The implementation of learning in playing the game

- (a) The children's response of their durability for playing the game. The durability of game was reflected by the will of the children to stick to the game (not feeling bored) to play until winning the game. This response shows the result that 89% of them said that their desire to winning the game with the details of 58% said they were highly agreed 31 were agreed. Meanwhile 7% said that they were quite agreed, and 1% was disagreed and 3% was highly disagreed.
- (b) The children's delightful collectively response to the game. This response shows the result that 92% of them expressed that they were collectively delightful with the details of 69% were highly agreed and 23% were agreed. Meanwhile 4% said that they were quite agreed, and 1% of them were disagreed and 3% were highly disagreed.
- (c) The response to the concept of playing while studying in the game. This response shows the result that 87% of the children expressed their agreement with the concept of playing while studying with the details of 69% of them said that they were highly agreed and 18% were agreed. Meanwhile, 6% of them said that they were quite agreed, 3% were disagreed and 4% of them were highly disagreed
- (d) The response to the desire to play 'Tangga Uang' game again. This response has given information that children were pleasure, curious, and interested to playing 'Tangga Uang' again in the future. This response shows the result that 90% of the children were desire to playing this game again with the details of 56% of them were highly agreed, 34% was agreed. Meanwhile 4% of them said that they were quite agreed and the other 6% of the children were disagreed.

5. Conclusion

The 'Tangga Uang' game was created with paying much attention in certain factors, such as stages of growth and development of children. Thus, 'Tangga Uang' is a form of education that is right on target. This game is also a solution for parents who want to provide financial education for their children. The concept of the game are interesting and instructive to put forward some financial components which are expected can develop financial quotient (FQ) and motor skills of children.

And interesting fact was also found during a testing that the children's level of financial literacy are still very low. With the presence of 'Game card' in this game,

children became familiar and got to know some financial terms. Then the role of teachers and parents are needed and suggested to accompany the children while playing this game in order to answer and explain more about financial terms which is contained in 'Tangga Uang' educational game.

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Paper Attachment



Activities of product testing

