

Animation as an Educational Media to Learn Colors and Shapes for Toddlers

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Abstract—This research was conducted to obtain data about the positive impact of an animation movie for toddlers against most negative assumptions. Although the animation movie has benefits, toddlers should only watch with parental guidance. Parents could not avoid the growth of technology, thereby they should accompany their little one in order to prevent the bad effects of it. There are three research subjects to collect data: (1) Parents who have 2-5 years old toddlers, fill in a questionnaire with 15 questions. We choose parents with a good education background, 80% parents are bachelor degree and the rest have master degree; (2) Toddler, they watched 2 animation videos about colors and shapes from Little Baby Bum; (3) Teachers were interview to testify the effectiveness of educational animation at school curriculum. Educational animation is one of alternative media that could be used to increase student motivation. However, research subjects such as toddler could have unexpected behavior. Blended learning which combine conventional learning with educational animation has better result than only watch animation, because is easy for toddler to lose concentration.

Keywords—*animation; educational media; colors and shapes; toddler*

I. INTRODUCTION

In every country in the world, children enjoy watching animation movie because it has cute character, colorful interface, and funny stories. Even cartoon characters are on food packaging to encourage children to consume healthier food. This phenomenon then leads animation movie producers to make their movies have a moral message, so the audience could imitate its good information such as Upin Ipin. It is one the highest-grossing South East Asian animation movie with USD \$ 5.1 Million only in a year, from 2009-2010. The biggest profit has come from the cartoon series sales to several countries such as Singapore, Indonesia, India, and the Philippines, and it also broadcasting on famously Disney Channel. The good things about this movie because its story is about daily life with thick Malaysian culture, instead of fantasy stories. Besides, it has good influence for kids because they could learn not only moral, but also alphabet, Arabic, and Islam. That is why some school apparel has cartoon character in it, so children will be more enthusiastic to study.

Nowadays, people in the world live with technology where they can choose which media that could be used for learning.

From paper to digital media, today generations are able to study with various kind of educational media, so they can experience a different sensation. Education must be upgraded to meet the requirements of today's modern world, where teacher-centered learning method should be reduced and replaced with new media [1]. Media is a tool that can deliver information from the sender to the recipient. In the process of communication and delivering information, media plays a very important role in supporting the improvement of goals or competencies however, determine the right kind of educational media for specific target audience is very important because its content will influence the success of the learning strategy.

In current learning activity, the student must be more active, not only as communicant but also as communicator, so there will be two ways communication. Active learning means students are engaged in learning activity as they can analyze teacher's theory, share their thought, and develop the studies in their real life. On the other hand, teacher as a provider of teaching material would not be replaced by modern invention, but he could adopt new media to support their tutoring activity. The use of media in learning could increase student interests and motivation, also affect psychologically to them. Providing appropriate learning media could embody more pleasant classroom atmosphere. According to Kemp and Dayton, 1985 educational media contributions are: (1) Communication of learning messages becomes more standardized; (2) Learning process will be more interesting; (3) Studying process will be more interactive by implementing learning techniques; (4) Shorten time to study; (5) Increase the quality of learning; (6) Learning process could be anywhere and anytime; (7) Increase student positive attitude to learning material and process; (8) Teacher's role changes positively.

There are many researches about animation as educational media for student from pre-school to high school. The results are mostly positive and student like this new learning method. From the explanation above, researchers want to strengthen the previous research by analyzing the new learning method with animation for toddler to learn about colors and shapes. Interactive materials are effective for pre-school students. They can adopt materials very quickly [2]. In the terms of neurophysiology, the development of children under 5 years old's brain is the critical period in human development. Child's brain development will be more optimal if the child is given

sensory stimulation directly. Childhood is a period to form a personality that will determine the child's next experience, so it is important to understanding the characteristics of early childhood if people want to have a generation that is able to develop themselves optimally [3].

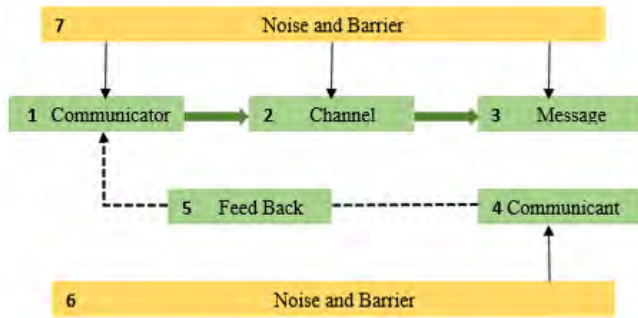


Fig. 1. The diagram of communication system.

The chart above illustrates the communication system that adapted to this research. First, communicator will deliver a message through a channel to communicant as message receiver. Second, communicant will give feedback to communicator and it depends on how communicant understand the information because there are noise and barrier outside this process [4]. In this research, we want to give a good message through animation movie to toddler and will be looking for the feedback. This experiment could be a success or failure because of children, sometimes, hard to be predicted.

II. METHODOLOGY

The aim of this research is to know the effectiveness of animation as educational media for learning colors and shapes. Qualitative research is used in this study. In qualitative methods, theories or literature reviews do not play a big role, because it only acts as an input and initial basis to show the importance of the research made [5]. The real theory in qualitative research is at the end of the activity because new discoveries will emerge. There are three steps that we use to collect data: Survey, field study (trials), and interview. (1) Survey research method is a form of research technique in which information is collected from a number of samples in the form of people, through questions [6]. Researchers used this method to collect data using a questionnaire for 50 parents who have 2-5 years old toddlers. We chose parents with a good education background; 80% parents are bachelor degree and the rest have master degree. There are 15 questions in the survey, so the researcher was able to draw a conclusion about this study. (2) To support the results of the questionnaire, researchers conducted a field study by taking samples at Arjuna Playgroup and Kindergarten, Malang, East Java. The school uses Bahasa Indonesia as their daily language at school and English only to introduced basic words such as numbers and colors. (3) Moreover, we interviewed the teacher about animation content to also collecting data which shape and color that the student remembers the most.

The students watched educational animation about colors and shapes from YouTube Channel "Little Baby Bum" and

supervised by their teacher. Researchers choose educational animation from YouTube Channel because, from the result, about 53% children enjoy it more than television series or else. Little Baby Bum is one of the YouTube channels that have most viewers. From the statistic in socialblade.com, a website that can help to track YouTube Channel Statistics, it reached 9th in video rank with total 16,423,693 subscribers and 17,528,386,758 video views on September 2018. This activity lasts for 30 minutes with the teacher participating in stimulating students to give feedback. Data collection was carried out 3 times with 10-15 students (3 days in school) in 1 week according to their school schedule.

III. RESULT AND DISCUSSION

A. Parents Survey

The survey result shows that nearly 100% of parents with toddler allow their children to watch animation with half of them choose television as a tool and one-fifth of the children watch it on a smartphone. About 44.2% of parents introduced their kids to animation movie when they were 12-24-month-old, while 32.7% knew it earlier at 0-12-month-old, and the rest allowed to watch it after 2 years old. Children YouTube channel is likely to be watched by 53%, while 30% choose television animated series. Internet developments take parts of on these results because people can easily access websites at more affordable prices.

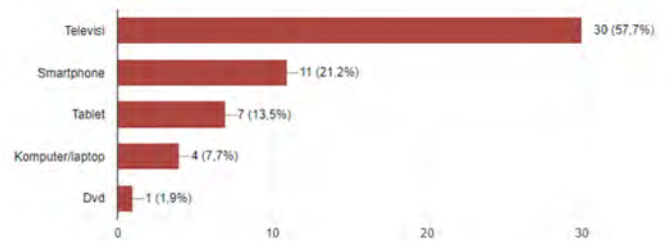


Fig. 2. Graphic about tools that use to watch animation.

In children cognitive development, more than half of the children able to clarification colors, while 13,5% and 15,4% are able to understand shapes and alphabets, respectively. At the average, those little ones can begin to recognize and understand basic shapes and colors at the age of 1-2 years old and 2-3 years old by 57% and 40%. This is a positive result because the new generation is intelligent, especially three-quarter of the parents admitted that their kids can learn colors and shapes easier with animation.

Almost all of the parents agree that animation could be educational media at school because it has a positive effect on their children development. Also, more than 90% agree if pre-school curriculum put animation as educational media.

B. Animation Trial

This trial started at 9.00 in the morning during class session with teacher as their guidance. There are 12 toddlers aged 2-5. One of them are using Bahasa Indonesia and English at home, some understand basic English word, but all of them understand Bahasa Indonesia. Per day, the data collecting

activity has the same amount of time, so researchers can compare the difference in every task. There are some variables that researchers found during this activity, such as: (1) Two students from day 1 did not attend to day 2 so there were 10 students left, but come back to day 3; (2) One student at day 3 want to change the video subject, because he felt boring; (3) About 30% of students experience difficulty of understanding English spoken video.

TABLE I. THE RESULT OF STUDENT’S RESPOND FROM COLOR ANIMATION

No.	Shot and Material	Kids Response
1	 <p>Introducing LBB character name Panda, Mia, Jacus, Spider</p>	Student respond it neutral
2	 <p>Mia holds red and orange crayons</p>	Student start to guess the name of the color. Mostly know the name red, but call it in Bahasa Indonesia “Merah”, and call “Oranye” for orange
3	 <p>Jacus holds yellow and pink crayons</p>	Same as before, they call the color in Bahasa Indonesia “Kuning” first than yellow, but all of them call pink, not “merah muda”.
4	 <p>Panda holds green and blue crayons</p>	Mostly know green and blue with Bahasa Indonesia. For student who is bilingual, he knew both language
5	 <p>Spider holds silver, black, white, and gold crayons</p>	One student knew all the colors (the bilingual one), but mostly know black and white, but cannot mention silver and gold

Table 1. cont.

6		Student respond it neutral, and call “flower, sun, cloud, butterfly” in Bahasa Indonesia
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In other side, Table 2 is the results of Shapes Song animation video, which divided into 2 section. The first section is containing more familiar shapes, while the second are less familiar. Like the Color Animation, some students found it difficult to understand English word in some shapes.

TABLE II. RESULTS OF SHAPES SONG ANIMATION VIDEO






No	Shot and Material	Kids Response
1		Student understand this shapes in Bahasa Indonesia. One bilingual student know both language
2		Student understand this shapes in Bahasa Indonesia. One bilingual student know both language
3		Student understand this shapes in Bahasa Indonesia. One bilingual student know both language
4		Student call it “segi empat” same as they call it for square. One student knows the difference between both shapes
5		Most student know this shape name in Bahasa Indonesia. Some of them know it in English

Table 2. cont.



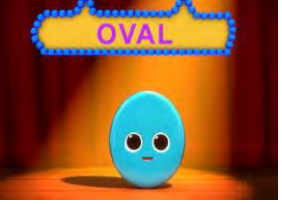
6		Most student know this shape name in Bahasa Indonesia. One student know it in English
7		Student call it also "segi empat" just like square and rectangle, but one student know the difference
8		Some student call it egg, some call it circle in Bahasa Indonesia. One student know this shape

Table 3. cont.

03.00-06.00 : Student watch "Shapes Song Little Baby Bum Nursery Rhymes for Babies Videos for Kids"	1. All students were very enthusiastic and wanted to see the video 2. Some older students or those who have had prior learning experience can already understand the contents of the video 3. A younger student tried to catch the information from the video, but she cannot speak properly yet	1. All students were very enthusiastic and wanted to see the video 2. Some student remember the activity and try to imitate the lyric. 3. A younger student tried to catch the information from the video, but she cannot speak properly yet	1. Some students want to watch another video, because they were boring with the same video 2. Some student remember the activity and try to imitate the lyric. 3. Students behaved well and
06.00-13.00 : The teacher asks students what they get from the video and try to explain it more with kids song in Bahasa Indonesia.	1. Students try to answer the teacher's questions, some are right and some are wrong 2. There are students who are still ashamed to answer questions	1. Students try to answer the teacher's questions, mostly right in Bahasa Indonesia 2. All students tried to answer the question, especially when teacher help it with accessories.	1. Students try to answer the teacher's questions, mostly right in Bahasa Indonesia 2. Some students were boring and don't want to answer teacher's questions.
13.00-16.00 : Student watch "Color Song BRAND NEW! Little Baby Bum Nursery Rhymes & Kids Songs Songs for Children"	1. Students want to have more video after the first one 2. Student who have had prior learning experience about colors, tried to guess it	1. Students want to see the video immediately 2. Student who have had prior learning experience about colors, tried to guess it	1. Students wanted another variation of video 2. Students began to remember some English word of colors from the video and try to speak about it.
16.00-30.00 : Teachers tried to get reflections from the student. They asked various questions about the video	Students tried to understand the teacher's questions and asking about some English words that they do not understand.	Students enjoy the experiment, but most of them still try to catch the meaning of it especially in Bahasa Indonesia	Students said that they want another videos because most of them already remember the colors and the shapes name.

C. Interview with Teacher

Researchers collect data from teachers who monitor student's development every day. In Arjuna Kindergarten, it has a curriculum that 2-4 years old children only focus on red, yellow, green in color and square, circle and triangle in shape. The students could able to learn more from home, but the teachers prioritize those even most students understand more. From the teacher, circle, square, triangle and star are the most memorized by children, because they relate those shapes to things around them. For example, children similar circle with car wheel or favorite food like donut and meatball, square with box, a triangle with pizza or toys, and star with lullaby song and decoration. Meanwhile, in colors, red, yellow, and green are three basic colors that will be remembered the most. In this animation video, the characters introduce those 3 colors in the beginning, then

In this school, it already adopts animation as educational media but the teacher more focus on conventional teaching method, because motion picture can make the student less concentration.

TABLE III. CHILDREN RESPONSE TO THE LEARNING ACTIVITY

Type of Activity	Children Response to the Learning Activity		
	DAY 1	DAY 2	DAY 3
00.00-03.00 : Teachers and researchers explain to the student about this activities	1. Students tried to catch the explanation 2. Students sit nicely and wait patiently	1. Students remember this activity and started to sit nicely and wait patiently	1. Students remember this activity and started to sit nicely and wait patiently

IV. CONCLUSION

Educational animation is one of the alternative mediums that could be used to increase student motivation. However, research subjects such as toddler could have unexpected behavior. Unlike more grown-up children, it is harder to cooperate with them especially when they feel bored. Even with interactive media such as animation, children could be

boring or only overwhelmed with the animation, not the content. This research found that blended learning which combines conventional learning with educational animation has a better result than only watch animation because toddlers are easy to lose concentration. Teacher is still the main educator at this age, so toddlers will get social experience while learning and it mainly happened at pre-school. In this study, we had the result that toddler who watch animation daily have more vocabulary than the one who do not, but it needs longer experiment to compare the long-term issue. The better way to educate toddler to learn shapes and colors are when the parent also take part in learning activity at home.

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