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Graduate School of
Indonesia Institute of the Arts Yogyakarta

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Graduate School of Indonesia Institute of the Arts Yogyakarta
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TECHNOLOGIES — OF ART —

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Technologies of Art

Proceeding of the 5th International Conference for Asia Pacific Arts

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Foreword

Dear Speakers, Presenters, and Participants of the 5th International Conference for Asia Pacific Arts Studies 2017.

Welcome to Yogyakarta!

It is my honored to have all of you in this academic forum that is indeed an indispensable activity for all art scholars.

Indonesia Institute of the Arts Yogyakarta (ISI Yogyakarta) would like to extend deepest appreciation to welcome all participants of the 5th International Conference for Asia Pacific Arts Studies (ICAPAS) 2017. As ISI Yogyakarta has initiated this seminar since 2013, this year we are honored to present the 5th part with the theme of "*Technologies of Arts*".

The 5th ICAPAS 2017 focuses on the technology that implies an orientation toward future times and constant progression, as often found in technophilic discourses. These often overlook history, ancient practices, and uncertain moves of artistry refinements. Hence, arts (techne) need to interject its practices into the contemporary discourse of technology to expand its meaning. In other words, art creators and performers have something to say to each other and to the wider world. Fine art have long history of constructing and inventing new ways of seeing the world. For centuries, performing arts has been developing techniques and music and body languages to mediate audiences and the world. These knowledge bound to doing can be reflected on and contributed to the academic world.

Finally, I would like to express my special gratitude to the speakers, participants, staff, and faculty member, and the committee who have actively contributed their knowledges, skills, and commitment to this program. Hopefully, the outcomes of this program will be beneficial for all parties, and strengthen the mutual relationship years to come.

Thank you

Kurniawan Adi Saputro, Ph. D

Editor

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Effect of Color Composition on 3D Animation Movies Towards Child Facial Expression

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Abstract

Application of color composition is one of the most important role in 3D animation film making. The lack of precise color selection can lead to the end result of 3D animated films that have been made to fail in the market and color also plays an important role in the expression of the child. Color category consists of harmony and disharmony. Harmonious colors are obtained from the combination of adjacent colors and the balance of the unity of color. The combination of harmonious colors is pleasing to the eye. The human brain distinguishes the visual interest and the sense to be more harmonious and forms a dynamic balance, but it is unpleasant to see the color of disharmony. This study examines the expression of children (N-30) aged 6-8 years in the city of Batam with Composition of harmony and disharmony colors in 3D animation films as well as measure the influence of both types of color composition using ANOVA. By analyzing the expression shown by the children at different levels using a two-way ANOVA statistical test to determine the differences and possible interaction of facial expressions grouped into 7 (joy, sadness, disgust, contempt, anger, fear, surprise) towards harmony and disharmony color.

Keywords: color composition, 3D animated film, expression, child

Varying Definitions of Color Composition on 3D Animation Movies

According to the colorist George Agoston (1979, p.7) color theory and its application in art and design, sensation produced in the brain in response to light received by the retina of the eye. Application of color composition is one of the most important role in 3D animation film making. Less precisely the selection of colors in making 3D animated films can cause the end result of 3D animation film that has been made to be failed in the market. Roger Deakins studied that in cinema it was easier to make colors look good, if the scene could improve by utilizing colors for the benefit, this will be advantageous. With color tools to correct and provide a powerful gradation effect, it has a greater degree of control over the elements than at any point in the history of cinema, but used the tools wisely (2015). 3D animation ads, the process of image composition generated after the process of rendering the image of the render become the main thing that supports the success of the animated film. Compositing is an activity after the production of animated film (post production) which brings together the visual elements from different sources into a single picture intact, usually to create the illusion of all the elements that are part of the same scene (Brinkman, 1999).

Varying Definitions of Effect of Color Towards Child Facial Expression

There are several studies of forms that categorize children's perceptual stimuli on the basis of color and shape (Corah, 1964). Children between the ages of 3 and 6 use color as a basis for matching stimulation more often than older children and adults who are particularly suited on the basis of form. The study did not show sex differences consistently (Therrell, 2002). Color sets the tone and mood of a film before any of the actors have been uttered a word. The findings of this study are consistent with In the Child's Creation of a pictorial World, Claire Golomb explores child art as an expression of visual thinking, the symbol and making function of the brain which produces images rather than words and illustrates her landmark work with more than 200 examples in color and black and white (1992). The theoretical perspective taken toward emotional development in childhood is a combination of functionalis theory and dynamical systems theory: A child's encounters with an environment can be seen as dynamic transactions that involve multiple emotion-related components (e.g., expressive behaviour, physiological patterning, action tendencies, goals and motives, social and physical contexts, appraisals and experiential feeling) that change over time as the child matures and in response to changing environmental interactions (Saarni, 2008). Another case is that when the child under arrest in San Bernardino County Department, California conducted the experiment the children were put in a prison cell with a pink chewing gum. Children tend to relax, stop yelling and banging and often fall asleep within 10 minutes.

Definitions of TheTwo-Way Analysis Of Variance

ANOVA is a statistical analysis used for the analysis of variants. The ANOVA method can describe the total diversity of data into components that measure various sources of diversity (Jret al., 1997). Research designs are often much more complex, eg categories of object variables such as considering the many expressions that a child would display such as fear, pleasure, sadness and others, which would be compared to the category of harmonic and disharmonic compositions of the film he would see. Where the harmonic color is obtained from the combination of adjacent colors is the balance of the unity of color. The combination of colors that exist in harmony is pleasing to the eye. The human brain distinguishes the visual interest and sense to make it more harmonious and forms a dynamic balance, but instead it becomes unbalanced and unpleasant when looking at the color of disharmonis. To overcome this complexity with two-way ANOVA statistical tests is often used to determine the differences and possible interactions when variables are presented from two perspectives or more categories (MacFarland, 2012).

Method

Participants

Participants included 30 kids volunteers (7 girl, 23 boy, age range: 6–8 years) were asked and invited to watch 3D animated film. Each Participants were compensated by giving snack and food for their participation. All participants were asked to watch movie while webcam is activated.

Materials

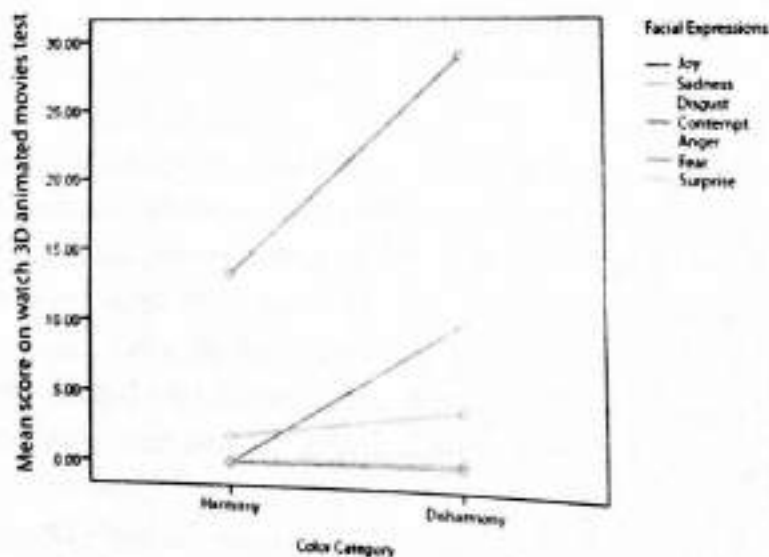
There are 2 movie durations of 12 minutes. the first film of the harmony animation film and the second dish of disharmony. Child expression will be recorded using Snagit app while webcam is started and were measured using an Emotion TrackingApp that was built by Affectiva JS SDK(<https://jsfiddle.net/affectiva/opyh5e8d/show/>) that consisted of seven types of expression (joy, sadness, disgust, contempt, anger, fear, surprise). Value were recorded every minutes that a participant spent while watching 3D animation movies.

Procedure

Participants were assigned two movies that has duration of 12 minutes that contains animation film with harmonious color and disharmony color. Participants watched at a laptop that was facilitated with webcam for testing and snagit is a screen capture software for record videos with a simple screen recorder were installed to record the result. Each participant were told not to move too much because Emotion Tracking App cannot record and show the result of the expression of the participants. After 30

minutes participants was finished watching two kind of animated movies. We collected all of participants recording result using snagit software. Perseverance data from one participant were eliminated because he had to leave the watch session early due to drowsiness. Concentration data from one participant were dropped because he did not complete while watched the movie due to sleepiness. Participants were tested at 3:30 p.m. in a designated laptop on the day the testing started. This test procedure is performed for 7 days because we must ensure the willingness and mood of the child while watching the movie. We get values of the seven types expressions (joy, sadness, disgust, contempt, anger, fear, surprise) shown by each participant while watching an animated movie of two types of animated films consisting of harmonious and disharmony colors. We want to identify the existence of two factors that may cause differences in the dependent variable. For this purpose, a two-way variance analysis (Two-way ANOVA) was performed. Researchers want to know whether there is a difference in the percentage value of expression between the type of color factor (harmonious color and disharmonious color) and the type of expression. A two-way analysis of variance (ANOVA) showed effect of watching 3D animation movies of harmonious and disharmony color towards child facial expression (see Figure 1).

Figure 1.



Discussion

The purpose of this study was to test how different color composition of 3D animated movies affect child facial expression. We predicted that kids have different expression while watching 3D animation movies especially with its different color composition.

Based on data generated from the recording of facial expressions displayed by children while watching animated films with different color compositions and decision-making one by one, among others:

1. Between Subjects Factors: explains the number of respondents per category of color and type of expression.
2. Descriptive Statistics: describes the mean and standard deviation of the number of expression out per movie watched by category of color type and expression type. For the category of harmony with Contempt type of expression often appears compared with other types of expression, which is equal to 8.89%.
3. Test of Between Subjects Effects is the main clouding that represents the results of the hypothesis. From the table, it is known that p-value for color type category is 0.001 (<0.05), so the conclusion there is a significant difference to the expression value between harmonic and disharmonic colors when the film is watched. Likewise for the type of expression category obtained F test value of 25.150 and significant at alpha 5%, meaning there is a difference in the average value of expression presentation among the seven-type of expression. To see if there is a difference in presentation value of expression of the interaction factor of color type with p-value expression type for color 0.002 (<0.05) means there is a significant difference.
4. Estimated Marginal Means clarifies the relationship between the type of color and the type of expression. The quite obvious distinction between harmonic and disharmonic colors is for the "Contempt" expression type: The same item "compared to the other type of expression as depicted in Graph 1. It can be concluded that:
 1. Percentage value The highest type of expression of the harmonic and disharmonic color film types is "Contempt"
 2. Percentage value The lowest expression type of harmonic and disharmonic color film type is "Anger"
 3. Presentation value High expression type of harmonic color film type "Contempt" is 13.292%
 4. Percentage value High expression type of the type of disharmonic color film "Contempt" is 29.006%.

In conclusion, the results of this study provide some interesting things insight into the effect of color composition on 3D animated movies on child facial expressions. Contrary to what we predict, children may be very capable concentrate on one film that has a harmonious color composition for hours. On the other hand, there are also children who are easily bored with 3D animated movie that they watched. It can be due to the composition of colors that are not harmonious, as well as other factors that are very influential is the story line on the movie they watched.

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