Visualization 3D Mosaik Picture Formation

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Abstract

This study aims to reveal and explore the visualization of the formation of Mosaic 3D Formation of 2,957 new students at UPN Veteran Jakarta. Visualization through the concept of Aerial Cinematography is expected to be an aesthetic enhancer in mosaic works. This mosaic is a work of art made of elements and arranged so that it becomes a 3-dimensional image or design. This research was designed as an experimental study which focused on two parts. First, try out the composition of the picture elements to form a unity that is in harmony with the overall formation movement. The second trial focused on visual exploration, which originated from the concept of aerial cinematography. The resulting mosaic visualization consists of three images with the writing of Patribera 2019, Kampus Bela Negara and PIKIR work culture logo with super high angles and long distances or called birds point of view.

Keywords: Mosaik, 3D Formation, Aerial Cinematography, Visualization

INTRODUCTION

In order to prepare the way of thinking and giving an overview about learning system in college, therefore an introduction of the college life program for new students is needed to speed up the adaptation process in the new surroundings. This period can be used as a starting point of the initiation of idealism development, putting and building up the attitude of loving the motherland, concern for the environment in order to create a generation with honest, intelligent, caring, responsible, and robust character.

The Implementation of Campus Life Introduction for New Students (PKKMB) is designed to remind about the performance of competency-based learning and teaching processes that require conditions. The learning process includes; (1) learning knowledge to know, learn to do, learn to live together, and learn to become from the chosen majors who will graduate as soon as possible, (2) rapid adaptation to the learning environment so that the learning process can take place in a good atmosphere, and (3) the right learning system for the success and improvement of the competencies of the chosen majors accompanied by the ability to adapt to the tertiary environment.

PKKMB UPN Veteran Jakarta coloured by several activities. A total of 2957 new students presented mosaic action on the ceremony fields of Bumi Marinir Cilandak on Wednesday, August 14th 2019. The action of mosaic formation is an activity which involves the whole new students of the college to present a formation performance to create specific words or images. Mosaic as a work of art in creating images formed in such a way so that it produces this harmonious unity with the three-dimensional motion. (Henri Cholis, 2015)

Eric Kahler in his book “What is Art” (Gie, 1976) defined art as a human activity that explores and unpredictably creates new reality based on vision and present that reality through symbols or metaphor. While art in its most fundamental meaning according to the opinion of William Flemming in Encyclopedia Britannica, means skill and ability.

In psychological literature (Peransi, 2005), creativity is an ability to create composition, ideas towards anything essentially new or have never been recognized by its creator. This could be imaginative activities or synthetical thoughts within the result that is not only a summary. It could be forming new patterns and combination from various information of the past experience and old relation implementations in new situations with new correlations result. Even Hugenholtz emphasizes on giving shapes. Creativity according to him is an ability to deliver forms to points, intentions, various ideas by means and tools so that the form does not lack or excess and can talk by itself. The form must be clear, it means that creativity relates to something factual and become a meaningful reality.

This raises interest for writer to record this college student’s creativity result in a form of film language. Film language in cinematic form is a “life illustration”, a two dimensional media, cinematic film can overcome this limitation by creating illusion of depth. (Boggs, 2008). According to his opinion, every shot must be designed by remembering the aim of positioning cinematic. Those purposes are:

1. Direct attention to the most important object
2. Image is always in the state of motion
3. Creating illusion of depth
4. Taking advantages of particular devices

If in 1839 human culture is complemented by a device that could record reality exactly as it is when photography was found. Description of reality since then is not only done by language, but also with the new mechanism media: photos. Because of its incredible ability to exactly and precisely reduce reality, its has become this “hot” medium, and the information it’s giving cannot be denied because we realize that pictures cannot lie.

Portraits stops a certain moment of a stage in the image motion. Portraits can suggest motion, but it only deal with relations to space. Therefore, portraits can be nicely composed in just a single “frame of reference”.

Then what if those photos become moving images? What if motion as an essential element of the living reality can be produced by a device we call film camera? Now besides verbal language, we have a medium that has the ability to record reality more objectively, even this medium allows us to see the reality that previously could not be seen.

Drone on its development has entered the film media as a new perspective in taking images where delivered visual is not just degrees with objects anymore. Movie production uses drone as a part of the movie shot, creates a new perspective in cinematography, especially in the camera’s point of view selection. Hence this technology can help in the process of shooting images. The image quality result really depends on the specification of the drone and camera itself. The better the devices used, the better the results will be. To this day, the more sophisticated drone specification is, the more possible it is to get a higher resolution image.

The utilization of drone technology currently makes every shooting angle can be nicely done in the aspect of quantity as well as quality. Image angle taking through the concept of *Aerial Cinematography* is expected to be aesthetic enhancer in creating a visualization of three-dimensional mosaic formation.

On that basis, the writer's curiosity gets higher on how to present a visual image of mosaic formation which moves evenly and in order, following a three-dimensional flow as a whole? How is the technique of the image taking of this mosaic formation using the concept of *aerial cinematography* as an aesthetic enhancer of moving images?

In order to overcome the problem, the writer assumed to study more about viewpoints that can be reached with the process of creating visual images using drone technology for shot purposes in a film medium.

Also from this point, writer interested in implementing the theory of *objective camera angles* by John V. Masceli. The objective camera uses the viewer's point of view, recording from the side line of viewpoint. The audience seemed to witness the event that they saw through the eyes of a hidden observer. (Mascelli, 1998).

This explanation is strengthened by an objective point of view which illustrated by a camera philosopher, John Ford. (Boggs, 2008). He assumed a camera as a window, with the audience outside the window watching people and events happening inside. If a camera is placed on an extremely high angle, giving impression as if an observer is being far away, outside and apart. He observes a dramatic situation beneath in an objective and almost scientific way. According to the explanation above, the topic of this research is **"Visualization of Three Dimensional Mosaic Picture Formation"**. The purpose of this research is to study and explore the visualization of forming 3D Mosaic Formation presented by 2957 new students of UPN Veteran Jakarta through *aerial cinematography* concept that expected to be an aesthetic enhancer in the creation of three dimensional mosaic formation.

MATERIALS AND METHODS

This research was conducted on creativity of UPN Veteran Jakarta's students in creating three dimensional mosaic formation. The research was done starting from pre-production to the production stage itself on July and August 2019.

This study uses experimental aesthetic method developed by Fechner. (Gie, 1976). According to his opinion, experimental aesthetic is based on research of biological phenomenon with measurement methods. These are the forms and characteristics that can be absorbed by the five senses.

Data collection techniques are grouped into two ways, those are interactive and non-interactive. (Goetz & Comte, 1984). Interactive method involves observation and deep interview, two speaker sources from the PKKMB committee, while non-interactive method involves literature review and controlled trial method for several alternative designs for the visualization of forming mosaic formation.

This research is using qualitative approach, using study case as an approach. According to Robert K. Yin (2002), it is said that study case is a more proper strategy when the question point of the research is more related to how or why.

The output of this research is visualization of PKKMB 2019 three dimensional mosaic formation. The innovation of this research is the creation of visual image with extremely high angle using *aerial cinematography* concept, through this research, people could apply it because it is complemented with staged guides to set camera's viewpoint in creating the overall visualization of three dimensional mosaic formation. This research

is expected to be important because the result can be an alternative to the technology development in filming art especially using drone technology. Beside that, it is indirectly introduces new language in creating moving image art to see the reality more objectively

RESULT AND DISCUSSION

Mosaic Design

According to the interview with Reycha from the event division of PKKMB who become an interviewee in this research, the making of mosaic formation is using digital mosaic design technique using a computer software. The software used to create formation design are Autocad and Microsoft Excel. Another key informant, Rafif who become another interviewee complete that the proportion of mosaic formation with the ratio of new students is as much as 2957 and selected to 2500 within the ratio of 50 x 50 (scale 1:1).

Red and white color selection in the writing result represents Indonesian flag, red symbolizes human's body, while white symbolizes human's soul. Both are complementing each other, perfecting the human's body and soul to develop Indonesia.

Mosaic design formation is made by three forms, as follows:

1. Mosaic design forms a word of PATRIBERA 2019, the acronym of Patriot Bela Negara. It has meanings of students with personal character, have certain quality, succeed in study, and toughly facing challenges in future, as a part of the state-defense effort, based on the love for the motherland.

Image 1
Design pattern of mosaic formation for PATRIBERA 2019

2. The second mosaic design forms words KAMPUS BELA NEGARA, as a representation of the UPN Veteran Jakarta's identity. Kampus Bela Negara instill love towards the motherland, national and state awareness, and willing to sacrifice for The Unitary State of the Republic of Indonesia.

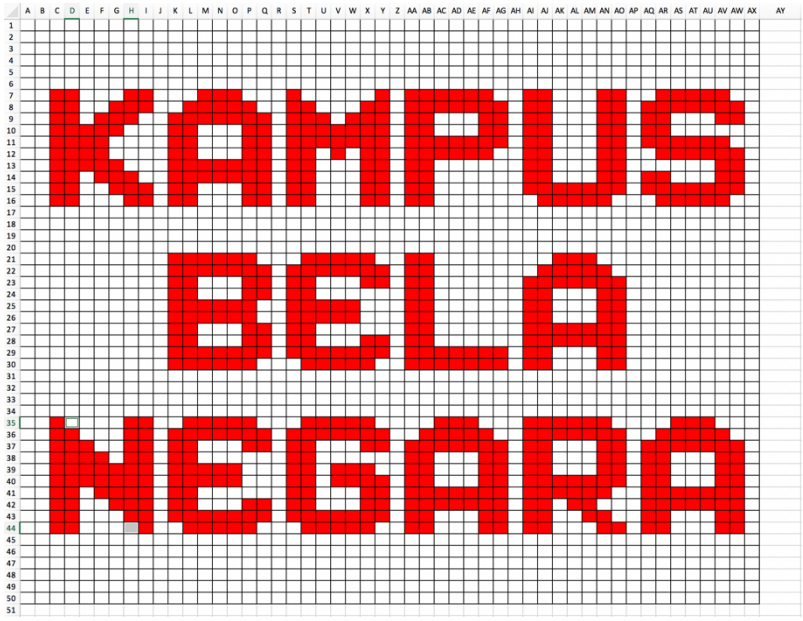

Image 2
Design pattern of mosaic formation for KAMPUS BELA NEGARA

3. PIKIR logo as the third mosaic formation design. Constituted as an abbreviation of Profesional, Integritas, Kejuangan, Inovatif, Responsif. Used as a fundamental foundation of work culture values in UPN Veteran Jakarta environment.

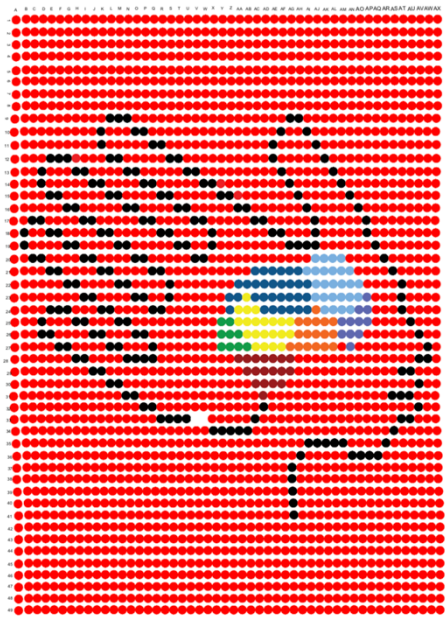

Image 3
Design pattern of mosaic formation for PIKIR logo

Three Dimensional Mosaic Formation Instruction

Three dimensional implementation in mosaic formation is based on instruction or commands given to the new students before. Helped with red and white colored asturo paper which carried by each student. Red and white colored asturo papers then being cut into a circle and attached to a cardboard, the top is colored red and the bottom is colored white.

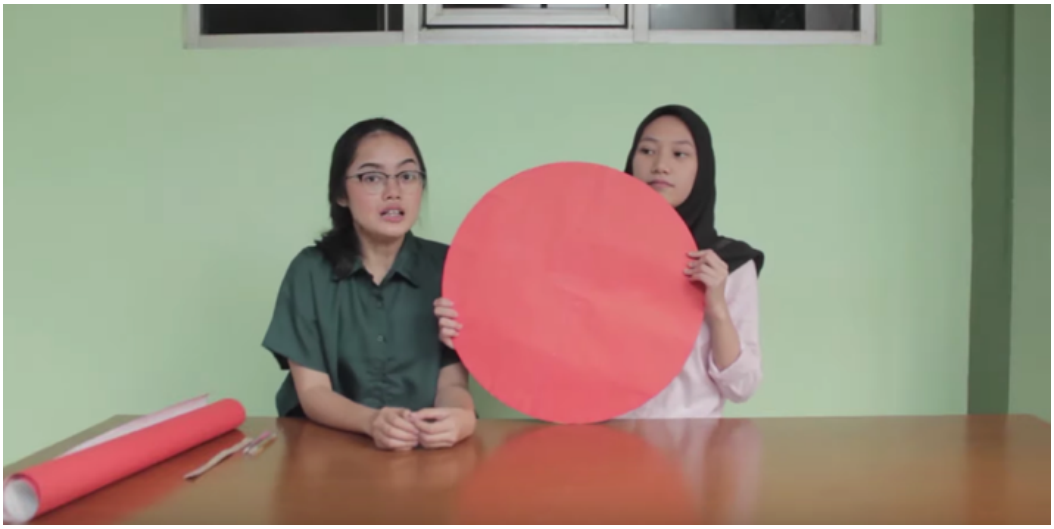

Image 4
Material for 3D mosaic formation

There are a total of eleven instruction types given for three mosaic formation designed with codes from A.1, A.2, to A.X with the number of 1 to 50 following the design pattern that had been made before. A total transition from mosaic PATRIBERA to the mosaic KAMPUS BELA NEGARA are 4 instructions, mosaic KAMPUS BELA NEGARA had 3 instructions, and 4 last instructions for mosaic logo of PIKIR. There are 10 seconds duration in each transitions.

Three dimension implemented based on instructions per one square which contains cue that must be done. As for new students who stands on line A.1, there are number 1 to 11 which contains color red sit, color red stand up, refers to what should be presented above. Asturo paper did not move, it stays on its place. New students just sit down and stands up, which will create the three dimensional illusion from above.

AQ1	AR1
1. MERAH, DUDUK 2. MERAH, DUDUK 3. MERAH, DUDUK 4. MERAH, BERDIRI 5. PUTIH, BERDIRI 6. PUTIH, DUDUK 7. PUTIH, DUDUK 8. MERAH, DUDUK 9. MERAH, DUDUK 10. MERAH, DUDUK 11. MERAH, BERDIRI	1. MERAH, DUDUK 2. MERAH, DUDUK 3. MERAH, DUDUK 4. MERAH, BERDIRI 5. PUTIH, BERDIRI 6. PUTIH, DUDUK 7. PUTIH, DUDUK 8. MERAH, DUDUK 9. MERAH, DUDUK 10. MERAH, DUDUK 11. MERAH, BERDIRI
AQ2	**AR2**
1. MERAH, DUDUK 2. MERAH, DUDUK 3. MERAH, DUDUK 4. MERAH, BERDIRI 5. PUTIH, BERDIRI 6. PUTIH, DUDUK 7. PUTIH, DUDUK 8. MERAH, DUDUK 9. MERAH, DUDUK 10. MERAH, DUDUK 11. MERAH, BERDIRI	1. MERAH, DUDUK 2. MERAH, DUDUK 3. MERAH, DUDUK 4. MERAH, BERDIRI 5. PUTIH, BERDIRI 6. PUTIH, DUDUK 7. PUTIH, DUDUK 8. MERAH, DUDUK 9. MERAH, DUDUK 10. MERAH, DUDUK 11. MERAH, BERDIRI

Image 5
Instructions/commands for three dimensional mosaic formation

The Visualization Stage

The implementation to shoot an overall landscape image of the total of 2500 participants creating a mosaic formation using an angle from the above opens up possibilities of perspective, new techniques and methods of visualization process that are going to be created. The utilizing of the drone technology applied in this visualization process of mosaic formation to explore film medium and to express *aerial cinematography* concept or aerial video as an aesthetic enhancer in shooting images. This mosaic formation visualization progress with *aerial cinematography* starts from pre-production stage and the production stage.

Visualization preparation stage is started with deciding devices that will be used, drone specification that is used for this mosaic formation production stage are 3 types of DJI Phantom 4 and a DJI Mavic. Besides having a CMOS camera censor with the same quality, specifically 1/2.3” (CMOS), it could also fly for 27 minutes with the maximum distance of 7km.

Image 6
Drone types that are used in visualization of mosaic formation,
DJI Mavic (left), DJI Phantom (right), source: researcher's doc

Next step is deciding composition, camera position or angle to develop an image from this mosaic formation. The following image is the design of camera position from the top view perspective, which shows the mosaic position and the camera or usually as known as *Floor Plan*, along with the three dimensional mosaic formation shoot result:

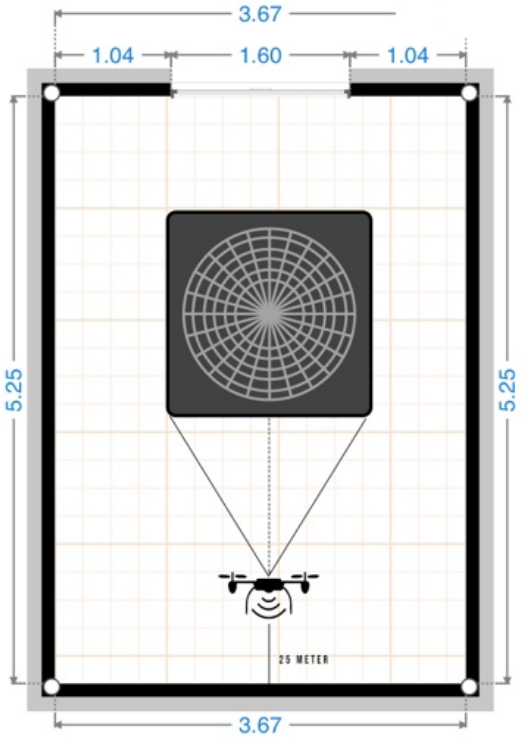

Image 7
Floor plan of Drone DJI Phantom 4

Image 7, positioning installed camera on drone DJI Phantom 4 at a height of 25 meters, direction of the camera facing forward following the word path that will be formed. An high angle shot with static composition chosen based on aesthetical reason, this point of view is expected to make contrast impression from the formation motion, several lines looks merged from the distance to create 3D effect.

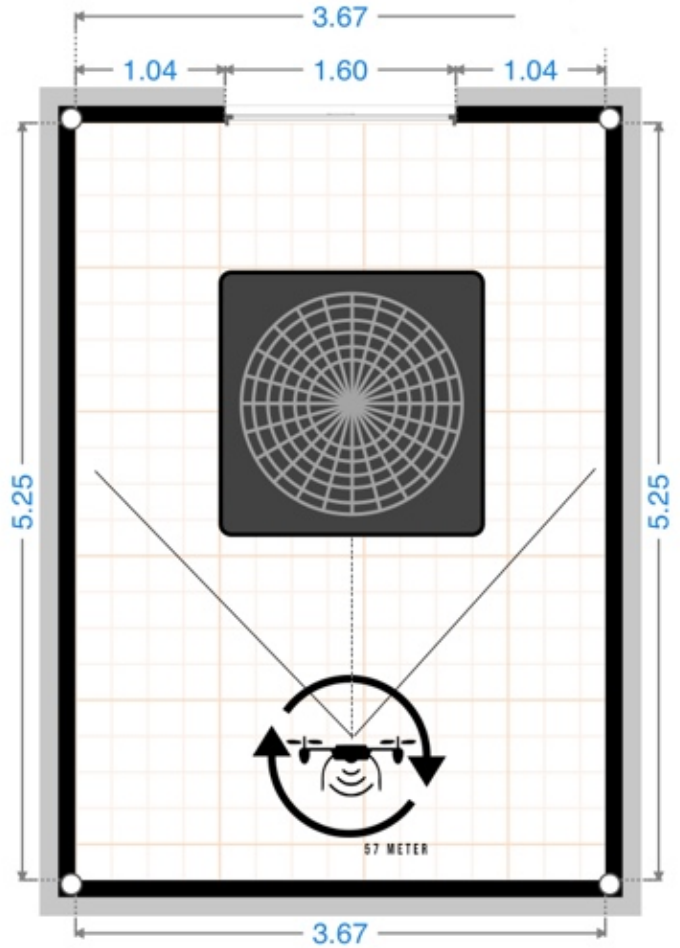

Image 8
Floor plan of Drone DJI Mavic

Meanwhile image 7, exploring drone technology while doing orbital movement where the drone will fly around the object, focus to the object in the middle as a point of interest. This shot is expected to create a beautiful composition from a static scene so the viewers are focused on the change of mosaic formation.

Results obtained from visualization recordings with aerial perspective from frame to frame according to the instructions of mosaic PATRIBERA 2019, KAMPUS BELA NEGARA and PIKIR logo is as follows:

Image 9
Visualization result of 3D mosaic picture formation taken by drone DJI Phantom 4

Image 10
Visualization result of 3D mosaic formation taken by drone DJI Mavic

On this visualization of three dimensional mosaic formation contained in the third instruction (third image from left) on the word PATRIBERA 2019. The sixth instruction on the word of KAMPUS BELA NEGARA, and the seventh instruction on the PIKIR logo. Each images are composed with mosaic formation motion so it creates depth, lines that creates words and equal, shows action, energy and power, giving the impression of brilliant, cheerful, and happiness. Triangular shape from the overall frame, giving an impression about power, stability, and solidarity. A good compositions are showed in mosaic formation motions, sourced from the image element arrangement which forms

an overall harmonic unity. The image that concentrated in one point of interest. Viewers are expected to be amazed by the beauty of the formation motion created by the subject.

CONCLUSION

Visualization of Three Dimensional Mosaic Formation that manifested through film language by using *aerial cinematography* technique can be said as an aesthetic enhancer because of the interest to the outstanding subject motion. The aerial perspective selection with using bird eye viewpoint makes the object's appearance which started from a substantial instruction to a mosaic formation affected by atmosphere condition of position and distance, where artistic value, dramatic, and additional notes psychologically can be given through camera height arrangement.

Composing motion and mosaic formation instruction has been a very important aspect in taking motion pictures. On portraits complete motions is just impressed. In films or moving pictures, motions are impressed and presented. Motions have aesthetic and psychological disposition, which can give any kinds of description and emotional connotations towards connoisseurs of artwork.

Visual exploration of this research is considered as aesthetic by some circles. The success of implementing *aerial cinematography* concept as a new technique in shooting mosaic formation images to create three dimensional depth.

This research is expected to be more explorable, extensively studied looking for depth especially about rapidly growing potential technology in producing film language.

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