Conference Paper

Flow Infographic Models to Communicate Information

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Abstract

Some of research results related to science about the advantages of infographics have been summarized by Smiciklas (2012), including the fact that vision occupying a very large part of the brain, infographics are more easily processed by the brain than plain text, and that the brain is designed to look for something different. The majority of people are visual learners and it is estimated that 65% of the population are visual learners, so the use of infographic to communicate an information will be very appropriate. There are several types of infographic, one of which is flow infographic. Flow infographics have a function to communication an information in form of sequential flow or procedural. Through flow infographics, information can be explained step by step using attractive visualization, briefly, and still can be easily understood. The elements in visual principles can be applied to the visualization of flow infographics such as the use of numerics style, shape color transitions, shape sizes transitions, position differences, etc. Visual principles in flow infographics must be considered and understood by designers, so that the visualization of flow infographic can be more attractive and can communicate an information appropriately to readers.

Keywords: Flow Infographic, Procedure, Visual Elements, Visual Principles

Introduction

One type of information that is frequently presented is in the form of procedural information, wherein the presentation of this information describes in detail and step by step the process or series of events. In addition to step by step procedures, a series of events can also be delivered sequentially from the beginning to the end. Procedural information requires interesting ways or methods of presenting the information, which can be done by using infographic techniques. Infographic technique is a way of presenting a material or information to the reader in a more concise but still clear and easy to understand because it is accompanied by pictures and supporting information (Rustan, 2009; Tinarbuko, 2010, Obed, 2006).

One infographic technique that can be used to present procedural information is in the form of flow infographics. Thus far, the majority of procedural information design only uses flow infographics with a numerical or arrow style design, as in Figure 1, making its visual less rich. On the other hand, flow infographic visual can be enriched by utilizing design elements, such as colors and shapes, by implementing the design principles to the design elements (Sanyoto, 2010).

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Figure 1. Flow Infographic with arrow style design

From this problem arises the need for visual enrichment related to flow infographics, so that the information of a procedure can be presented more attractively and richer in visuals.

Literature Review

Definition of Flow

Flow is the structure of a series of events in a chronological arrangement, and a series of stories from beginning to end.

Definition of Flow Infographic

Infographic is the abbreviation of "graphic information", which refer to the use of visual cues to communicate information (Lankow, 2014). According to Newson (Mulyate, 2013) the term "infographic" refers to the use of visual devices with the objective of communicating complex information quickly and clearly. Infographics can be made in a variety of techniques, depending on the message that needs to be conveyed. Knight (Mulyate, 2013) said that a good infographic shows the reliability of the designer which makes it to convey information that is not only easy to understand but also more interesting and much more enjoyable than just reading the text.

One of the technique in making infographics is to create infographics with flow diagram to convey procedural information related to a series of events arranged chronologically from start to finish.

Figure 2. The flow diagram infographic on the National Examination for the National Exams Participants

Design Elements

Lines

Lines are traces made by the contact of drawing tool or stationery on a surface and moved forth on the drawing plane. In general, lines have a small, elongated appearance, although sometimes the shape is rather wide but is still considered to have a long dimension, without width dimensions.

Some of the lines' visual appearance are as follows:

- Straight Lines: Horizontal Lines, Vertical Lines, and Diagonal Lines.
- Curved Lines : Dome-curve Lines, Arc Lines, and Floating curve Lines.
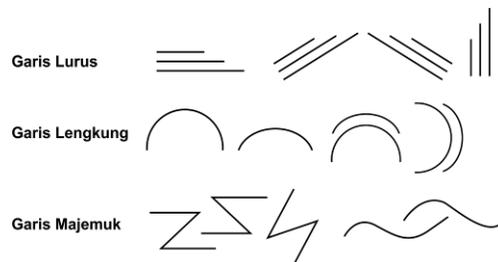- Compound Lines: Zigzag Lines, Wavy Lines / S Curved Lines

Figure 3. The visual of lines

Shape/ plane

If the line is moved forth and return to meet its starting point, it will produce a plane which is a flat appearance plane that have dimensions of length, width, height, and covers the surface. It cannot be classified as a shape or plane if the lines do not reunite with their starting point because they cannot cover the surface (cannot be colored).

Some of the shapes appearance are as follows:

- Geometric : Square, Rectangle, Triangle, Circle and so on.
- Non-Geometric Shapes : Other shapes that cannot be defined as geometric, such as asymmetrical or immeasurable shapes..
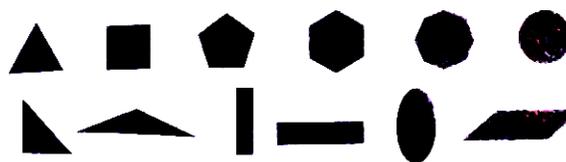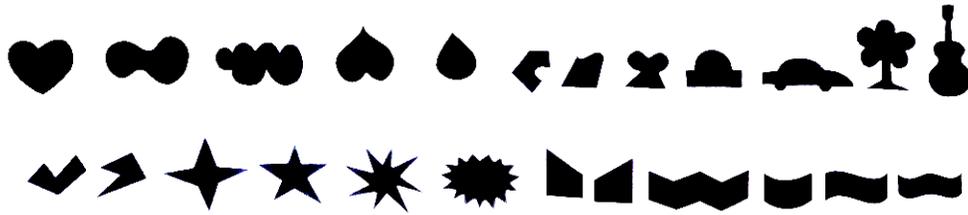

Figure 4. Geometric Shapes

Figurer 5. Non-geometric Shapes

Colors

Color can be defined objectively / physically as the nature of the light emitted, or subjectively / psychologically as a part of the sense of sight experience.

Color classification as follows:

- Primary color : Primary / basic color is the source of other colors. All colors are essentially derived from mixing these three primary colors.
- Secondary Color : The second derivative colors are the colors made by mixing two primary colors. The secondary colors are orange, green and purple.
- Tertiary Color : The third classification of color is tertiary color which is made by mixing one primary colour and one secondary color. Tertiary colors are reddish brown, yellowish brown, bluish brown.

Principles of Design

The principles of design are the appropriate composition or arrangement of each elements of the design, in order to create attractive and harmonious visual appearance. One of the design principle that is often used is rhythm. Rhythm can also be referred to as visual dynamics. There is an impression of motion of the design elements that looks like a tone in music. The rhythm can be created from repetition, change in size, and gradation of the objects displayed.

Line Rhythm

The rhythm of the line includes the rhythm of the line size, the rhythm of the line display, the rhythm of the direction of the line, and the rhythm of the distance between each lines.

- Line size rhythm, which means there is a gradual change in the size of the lines.
- Line form rhythm, which means there is a gradual change in the form or shape of the lines.
- Line direction rhytm, which means there is a gradual change in the direction of the lines.
- The rhythm of distance between each lines, which means there is a gradual change in the distance between the lines.
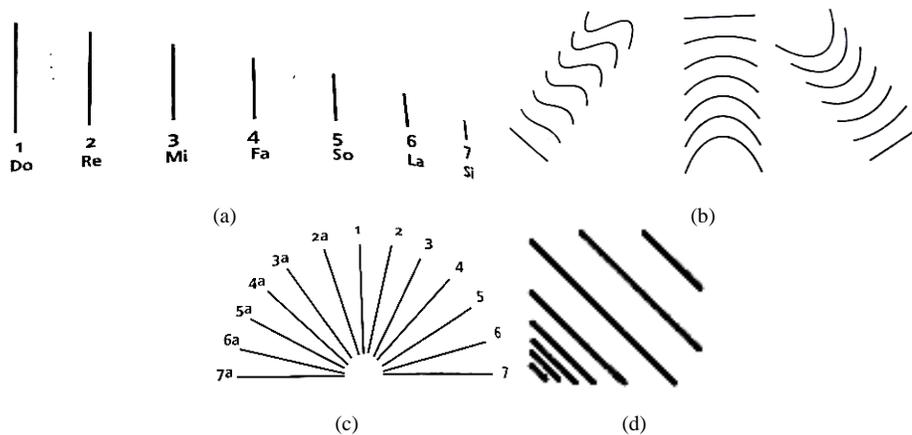
Figure 6. (a) Line size rhythm, (b) line form rhythm, (c) line direction rhythm, (d) line distance rhythm.

Shape Rhythm

Shape rhythms include rhythm of the shape's size, rhythm of the shape's appearance, rhythm of the shape's direction, and rhythm of the distance of the shape.

- The size rhythm of the shape, which means there is a change in the size of the shape little by little.
- The form rhythm of the shape, which means there is a change in the appearance of the shape little by little.
- The direction rhythm of the shape, which means there is a change in the direction of the shape little by little.
- The distance rhythm between shapes, which means there is a change in the distance between shapes little by little.
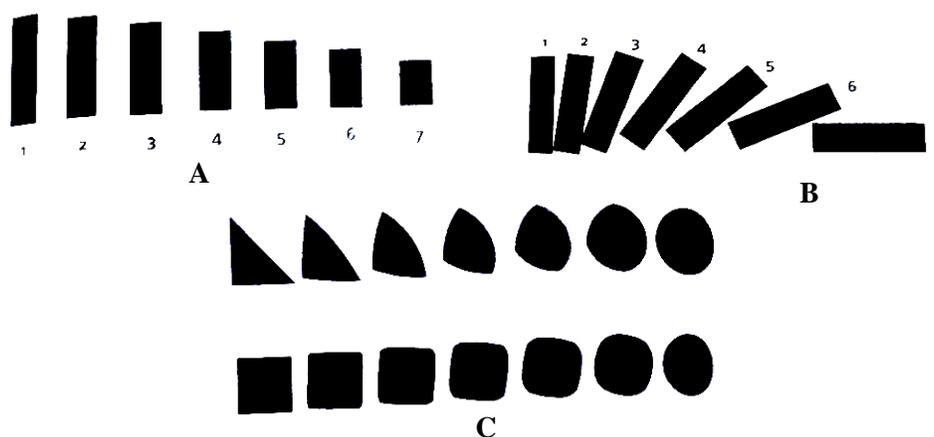

Figure 7. The size rhythm of the shape, the direction rhythm of the shape, the form rhythm of the shape and the distance rhythm between shapes.

Color Rhythm

Color rhythm can also be called color gradation, of which is the composition, rating, or the transition of a state to another state. In color, gradation means the change from one color to another color in gradual fashion.

Figure 8. Color rhythm

Research Method

The steps used to arrange the research method are as follows:

Data Collection Techniques

Collecting data through literature search or literature study: This method is used to search for, collect, and document literature data relating to the flow infographic models, design elements, and design principles that are closely related to the object of the issue.

Data Analysis and Data Development Techniques

Literature Data Analysis: In this method the results of searching for literatures related to flow infographic models are then analyzed to obtain several flow infographic models that have been used in the display of procedural information.

Data Development Techniques Into Flow Chart Infographic Models Design

The final step is to develop the flow infographic model into a number of flow chart models design that are rich in visuals by applying the design elements and design principles.

Result and Discussion

Flow Infographics with Positional Differences

Flow infographics with positional differences use four different positions, namely vertical, horizontal, diagonal, and random positions or a combination of the three.

(a)   (b)

(c)   (d)

Figure 9. (a) Flow infographic with vertical position, (b) horizontal position, (c) diagonal position, (d) random or combined position

Flow Infographics with Style Differences

Flow infographics with Style Differences use four different styles, namely the arrow style, the numeric style, and the combination of arrows and numeric style.

(A)   **(B)**   **(C)**

Figure 10. (a) Flow infographic with the arrow style, (b) Flow infographic with the numeric style, (c) Flow infographics with a combination of arrows and numeric style

Flow Infographics with Shape Transitions.

Flow infographics with shape transitions use two different transitions, the shape size transition and the shape color transition.

(a)   (b)

Figure 11. (a) Flow chart / diagram infographics with shape size transitions, (b) Flow infographics with shape color transitions

Conclusion

Flow infographic models in conveying information are as follows:

- Flow Infographic with Positional difference : Vertical position, Horizontal position,Diagonal position, Random or combination of these previous three positions
- Flow Infographic with style difference: Numeric style, Arrow / directional style, Combination of the arrow and numeric style
- Flow Infographic with shape transition: Shape size transition, Shape color transition

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