CHAPTER II

LITERATURE REVIEW

2.1. **Graphic Design**

Landa (2011) stated in her book that graphic design is a form of communication to deliver information, ideas, or messages visually using structured visual elements.

2.1.1. Design Elements

A graphic designer uses mixture of various design elements to make up a form of visual communication. There are seven main points of basic design elements, quoted from *Graphic Design Solutions* book. The seven basic design elements covered in the book includes:

1. Dot

   It is the smallest component in circular shape that makes up a line. A dot can also be represented as pixel in digital image, which caused it to have rectangular shape. The number of dots that are aligned can determine the length of a line made up from those dots (p. 16).

2. Line

   Dots aligned made up a line which usually measured by its length and not its thickness. Line is included in basic design elements for its versatile usage in a visual composition. A line can be drawn straight, curvy, or angular

which functions as a guide for eyes to follow the direction of the specific line. It is a very versatile element that can hold many qualities including to determine whether a line is smooth or broken, delicate or bold, thick or thin, and other qualities (p. 16).
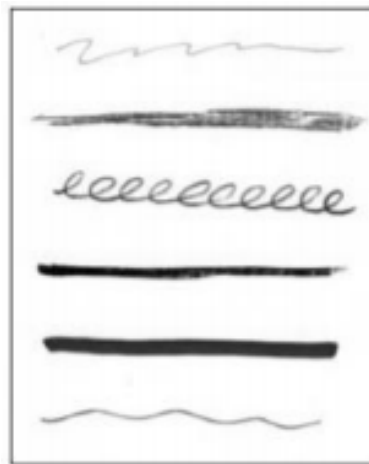

Figure 2.1. Example of Lines
(Landa,2011)

3. Shape

Landa (2011) described a shape as a configuration of area on a two-dimensional surface which the area is limited by lines as borders or filled in with colors. Shape can only be measured by its height and width, thus making it two-dimentional by nature. All shapes are created from three basic shapes which are triangle, square, and circle. Then they can be build into three-dimentional form which are cube, pyramid, and sphere. Shapes can also be classified by its kind such as organic shapes, geometric shapes, irregular shapes, figuratives shapes, and non-objective shapes (p. 17).
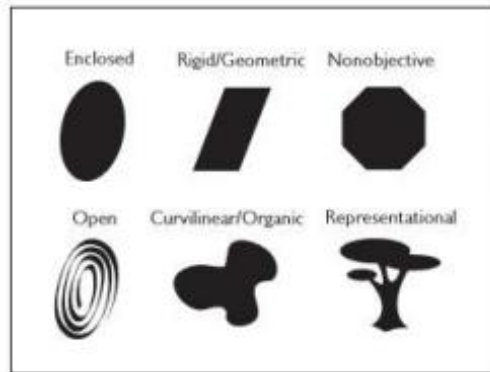
Figure 2.2. Example of Shapes

(Landa,2011)

4. Figure – Ground

Figure – ground is a basic principle of visual perception. According to the relationship between the two, figure is seen as the positive space while the ground is seen as the negative space. Usually figures are group of objects which the objective is to be showcased while the ground filled in spaces in between the figures (p. 18).

Figure 2.3. Example of Figure and Ground

(Landa,2011)

5. Color

Color as explained in *Graphic Design Solutions* book is a portion of light reflection that cannot be immersed by an object. Every time light strikes an object, some will get immersed, and the rest will get reflected. These reflected lights are what we see as colors. And because the eyes can only see the colors made from reflected lights, these colors are named reflective colors or substractive colors (p. 19).
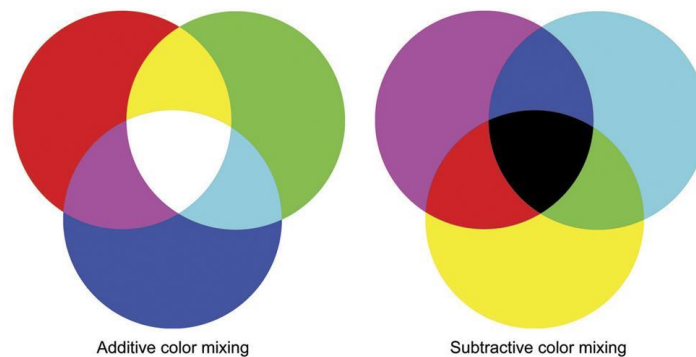

Figure 2.4. Additive and Substractive Colors
(Courtesy: https://www.tvtechnology.com/opinions/additive-and-subtractive-color-mixing)

In screen-based images, each color is determined by the wave length of light. The colors from screen-based image is a reflection of lights on screen. Thus the colors created from this process is called additive color (p. 20).

a. Color Nomenclature

Colors in a more specific manner can be divided into three categories, which are hue, saturation, and value of the color itself.

- Hue

  Hue is the name of color, such as 'red' or 'green', and 'blue' or 'yellow'. These color naming also determine if the color is inclined towards cool color group or the warm color group. The color temperature cannot be measured and feel directly but instead it is inclined towards the human perception of color association (p. 20).

- Saturation

  Also known as the intensity of colors, saturation is the level of color's vividness. If the color's saturation level is higher, this can result in more saturated color which essentially makes the color appear more vivid. Color with lower saturation will then appear muddier and duller than the vivid colors (p. 22).

- Value

  It determines the level of brightness in colors. Certain value of a color is achieved by combining said color with white or black. The mixing of hue with white creates tint, while tone is a standard color with no black or white added. Hue mixed with black will create a shade. Black and white is included in color list, but they are not hues (p. 22).

b. Primary and Secondary Colors

Primary colors in subtractive color category are red, yellow, and blue. These colors are not created by mixture of any color, thus making it categorized as primary colors. With additive colors, the primary colors are red, green, and blue. Theoretically, the mixture of these three colors in equal ratio will create a white light.

Secondary colors are created from mixture of primary colors. Secondary subtractive colors included orange, green, and purple. The mixing of one secondary color with the other secondary or primary color will create a tertiary color (p. 20 &21).
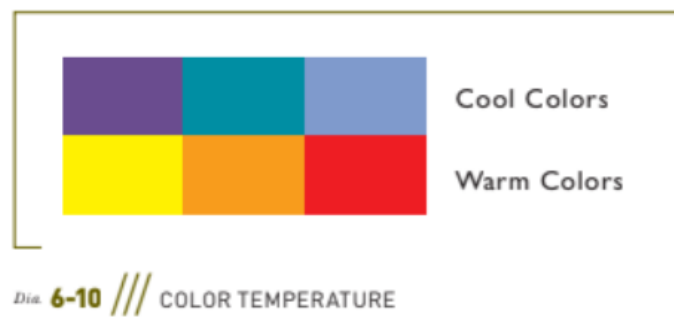
c. Color Temperature

Figure 2.5. Warm and Cool Colors
(Courtesy: Landa, 2011)

The temperature of a color can look warm or cool depending on the dominant hue of that color. A red that contains blue may look cooler than a red-orange which looks warmer. The temperature of color is

also affected by saturation and value. Grays mixed from colors may look cool or warm as well (p.131).

d. Color Schemes

Color schemes are harmonious color combinations based on hues at full saturation and their respective middle color range. Changes in value and saturation of a color will affect how a color works and communicates (p.132). There are eight color schemes elaborated in this book which are:

1.   Monochromatic

Monochromatic color schemes only use one hue. This type of color scheme allows a variety of a color's value and saturation. It can contribute to make appearance of unity and balance in design.

2.   Analogous

This type of color scheme uses three adjacent hues. It tends to create a harmonious looking color palette because of the proximity on the color wheel. Usually in an analogous color scheme, one color is dominant while the other two are secondary.

3.   Complementary

It is created by two of opposing color on the color wheel. The strong contrast can create tension or excitement.

4.   Split complementary

Similar to complementary color scheme, this particular color scheme is created from opposing colors. Instead of only two, it uses three hues; one color and two adjacent complementary colors on the opposite side of the color wheel. This color scheme is visually intense while being more diffused and less dramatic.

5.   Triadic

This color scheme is created using three colors at the same distance on the color wheel. The basic triadic schemes are using primary and secondary colors. The example of primary triadic color scheme is red-blue-yellow.

6.   Tetradic

Also known as double complementary, a tetradic color schemes consists of 4 colors in two sets of complements. This type of color scheme has a range of diverse hues and contrast (p. 132).

7.   Cool

Cool colors are the colors on left side of a color wheel (blue, green, violet hues). The effect created from this kind of color scheme is calmness or serenity. It is easier to balance cool colors than the warmer ones (p. 133).

8.   Warm

The right side of a color wheel is filled with warm colors (red, orange, yellow hues). Though it is harder to balance than the cooler colors, this kind of combination is still rather easier to balance to a

warm-cool color combination. These colors usually being associated with heat, spiciness, or intensity.
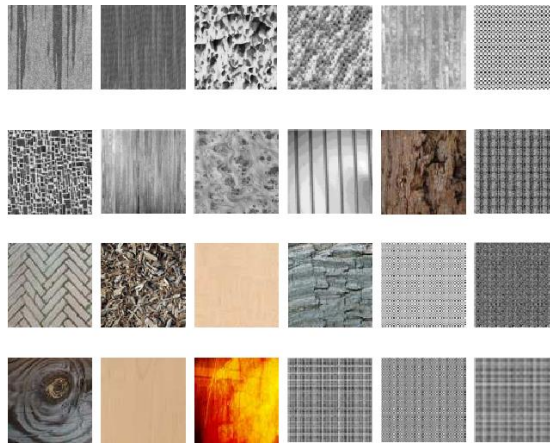
6. Texture

Figure 2.6. Example of Textures

Is known as the simulation of the surface of an object. There are two types of textures in visual arts, tactile textures and visual textures. Tactile textures are created by embossing, debossing, stamping, engraving, and letterpress process. Visual textures are achieved various image-making media including drawing, painting, and photography (p. 23).

7. Pattern

Pattern is the result of systematic and consistent repetition of a visual design on a designated visual surface. There are three basic design elements which can determine the basic structure of a pattern. They are dots, lines, and grid or marking lines (p. 23).
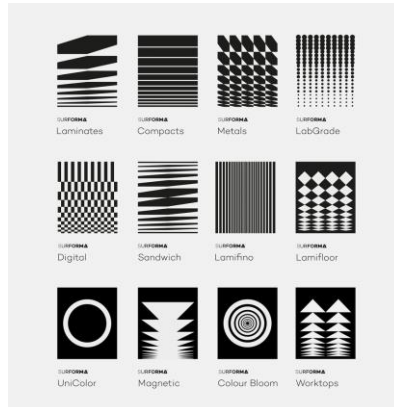
Figure 2.7. Example of Patterns

(Courtesy: https://www.cubagallery.co.nz/blogs/news/surforma-logo-brand-design-by-pacifica)

2.1.2. Design Principles

Landa (2011) stated that designer needs to understand and apply the basic design principles into the making of design concept. Below are five general graphic design principles in *Graphic Design Solutions* book:

a. Balance

Balance in design means stabilized visual composition created through even distribution of visual weight between all the visual elements in said composition. A balanced design can create harmony (p. 25). These are the three theories that discuss the principles about balance:

1. Symmetric Balance

Symmetric balance is created through the mirroring process of all the elements and even distribution of visual weight on each side of the main axis. This theory shows that when a symmetric

design is divided into two by the axis, each side of it will have
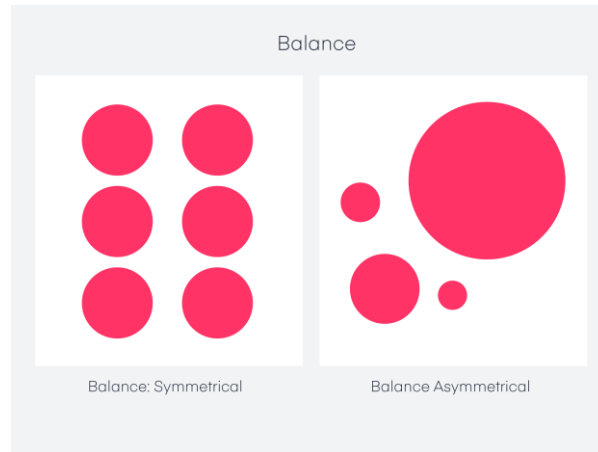
the exact visual composition (p. 26).

Figure 2.8. Symmetrical and Asymmetrical Balance

(Courtesy: https://www.invisionapp.com/design-defined/principles-of-design/)

2. Asymmetric Balance

The difference between asymmetric and symmetric balance is

found on the visual distribution in a composition. Asymmetric

balance is created through even distribution of visual weight on

each side of the main axis without the need to have the exact

same visual elements on both sides of the main axis (p. 27).

3. Radial Balance

Radial balance is created from balancing visual composition on

both horizontal and vertical axes. A radially balanced design

usually appears to have one imaginary dot in the center while all

the visual objects in said composition will appear to be circling

the imaginary dot (p. 28).

b. Emphasis

Emphasis in design is achieved by arranging the visual elements based on the importance of each and every visual element. The way to achieve emphasis are isolation of the elements, placement of elements, difference in size of elements, using contrast, using direction or pointers such as arrows to direct one's view to said element, or using diagrammatic structure (p. 29).
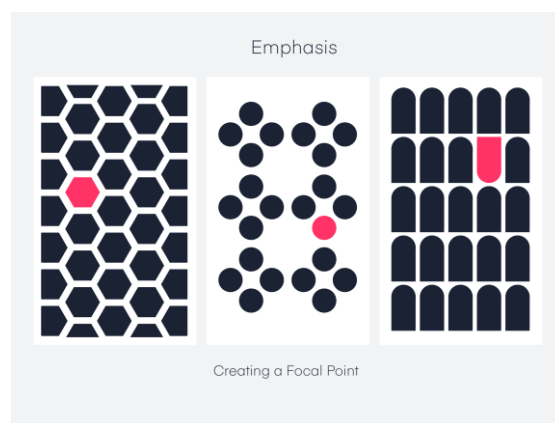

Figure 2.9. Emphasis

(Courtesy: https://www.invisionapp.com/design-defined/principles-of-design/)

c. Rhythm

Rhythm in design is achieved by using pattern which can direct one's eyes to follow certain 'grooves' during enjoying the composition. A strong design rhythm is able to create visual stability (p. 30).

d. Unity

Unity is a design principle which help create harmony in a composition. Unity is achieved by creating orderly connection between visual elements and classification of visual elements. The

placing, orientation, similarity in shapes or colors of the visual elements can create unity (p. 31).

e. Proportions

Proportions is how one thing to another compare in design. It can be achieved by making an appropriate ratio between the visual elements and to the whole composition (p. 34).
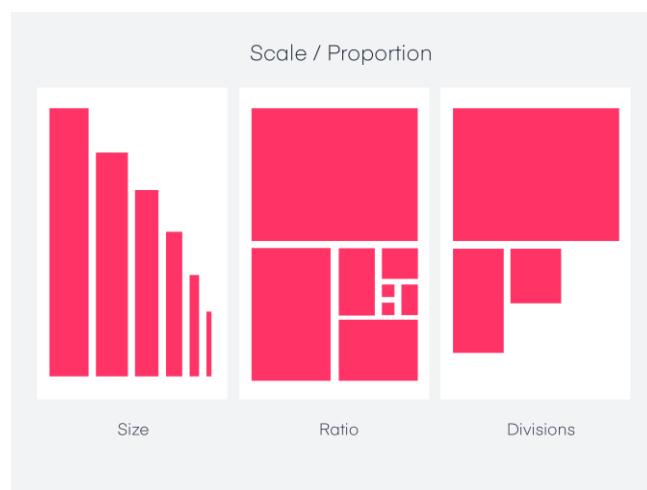

Figure 2.10. Proportions
(Courtesy: https://www.invisionapp.com/design-defined/principles-of-design/)

2.2. **Book**

Haslam (2006) stated that book is the oldest form of information storage in science. A book holds knowledge and belief of the world. It has multiple printed pages to which will be bounded together aiming to transit knowledge from one person to another (p. 9).

All books have components in them, while some also have technical parts inside during the publishing process. There are two formats for books, portrait and

landscape. The three basic components for books are the block book, the page, and grid (p.20).

2.2.1. Book Binding

According to Lupton (2008) there are few ways to bind pages into a book. The binding technique used in this final project is perfect binding. Below is the explanation of it according to Lupton:
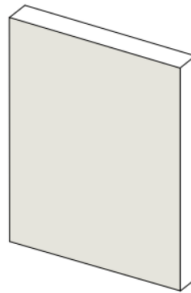
Figure 2.11. Perfect Binding
(Lupton, 2008)

Perfect binding technique requires a cover to be glued onto the book pages. The binding process can be done manually and by machine according to the quantities. The books using this particular binding process cannot be opened fully.

2.3. Grid

Grid is made up from vertical and horizontal imaginary lines dividing a format into columns and margins. It holds the structure of most media, from books and other printed media such as magazines and brochures, to digital media such as both desktop and mobile websites (Landa, 2011).

The grid we use today as structural design device was first adopted and then popularized by Swiss designers. In short, grid which has the use of being type and images organizer, can help one to build both print and digital pages.

There are three types of grid discussed in this book which will be explained as stated below:

1. Single-Column Grid

Figure 2.12. Single-column Grid
(Courtesy: http://thinkingwithtype.com/grid/#golden-section)

Also named manuscript grid, a single-column grid is the most basic grid structure. The characteristic of this particular grid is that a block of text or a single column surrounded by margins; the space left blank on top, bottom, left, and right edge of a format to function as proportional frame structure around both visual and typographic content. Margins can be applied to both printed and digital pages (p. 175).
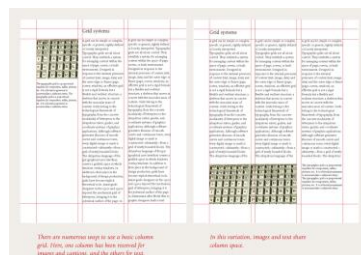
2. Multicolumn Grid

Figure 2.13. Multicolumn Grid
(Courtesy: http://thinkingwithtype.com/grid/#multicolumn-grid)

This particular grid is used to maintain alignments, as well as defining boundaries and keeping content in order (p.177). Multicolumn grid can divide a content into several even or uneven columns depending on the size also the proportions of the format. The columns created from this margin type can also be designed to make particular space for text or large visual, depending on its content and function (p. 179).

3. Modular Grid
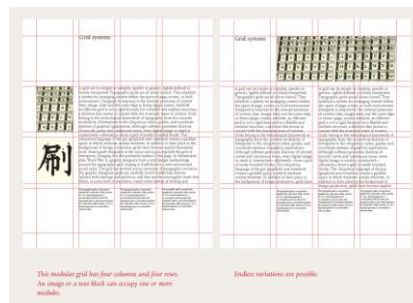
Figure 2.14. Modular Grid
(Courtesy: http://thinkingwithtype.com/grid/#modular-grid)

Modules are explained as individual units created from columns and flowlines intersection made up a modular grid. The flexibility of this grid is believed to be the most versatile one. The information or content of a format can be placed into one of the modules or into a zone; a group of several modules (p. 181).

2.4. **Typography**

A typeface or a font family is a set of characters designed with consistent visual properties which created the distinctive basic character of a typeface even when the typeface is modified. One typeface typically consists of letters, numbers, symbols, signs, punctuation marks, or accent marks (Landa, 2011, p. 44).

2.4.1. Type Anatomy

Each and every type is made up from several characteristics that define the legibitilty of such type (Landa, 2011, p. 44). There are five basic characteristics that made up a symbol. They are elaborated as follow:
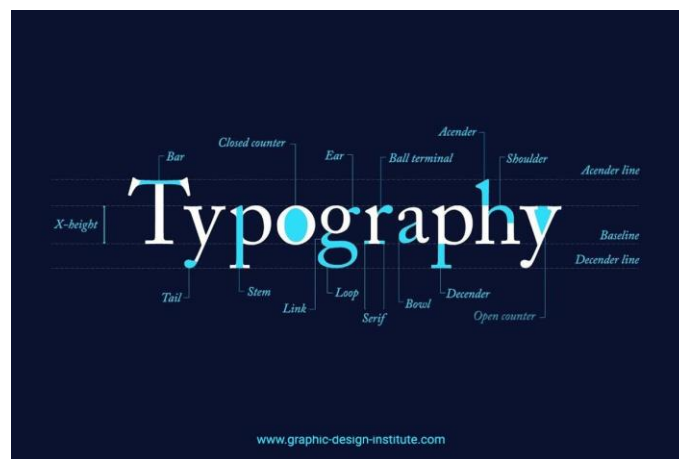
Figure 2.15. Type Anatomy

(Courtesy: https://www.graphic-design-institute.com/visual-grammar/anatomy-typography-designers/)

1. Baseline

   Baseline is located at the bottom of a letter but it does not include the descender part. Descender is a part where some letters such as g, j, p, q, and y fall under the baseline (p. 46).

2. Character

   Any single unit in a typeface. It includes letters, numbers, punctuation marks, and others (p. 46).

3. Counter

   A counter is the space surrounded by the strokes of a letter (p.46).

4. Serif

It is the part where the edge of the upper and lower end of a main stroke of a letter or any charater have a small stroke added (p. 46).

5. X-height

X-height is defined as the main height of a lowercase letter, which means the ascenders and descenders are not included in the x-height (p. 46).

2.4.2. Type Classification

According to Landa (2011) types are classified mostly by style and history (p.47). There are eight classifications elaborated in her book, which are as follow:

1. Old style or Humanist

It was the roman typefaces introduced in late 15th centuries. Its most distinctive criterias are angled, bracketed serifs and biased stress.

2. Transitional

It is still in serifs family, circulating since 18th centuries and is believed to represent the era to which an old style transition into modern; thus the name 'transitional'.

3. Modern

The types classified into this category are those serif types developed around late 18th and early 19th centuries. The form of this kind of type is more geometric, especially the symmetrical charcteristics created from contrast thin and thick stroke.

4. Slab serif

Still falls into serif type family, this kind of type has slablike serifs which was introduced in early 19th century.

5. Sans serif

   It is first introduced in early 19th century and the distinctive characteristic is that this type does not have any serif.

6. Blackletter

   This category classified the typefaces that have medieval manuscript letterforms also known as gothic. This kind of type usually has heavy stroke weight and condensed letters with curves here and there.

7. Script

   Script is a typeface that looks the most similar to handwriting. The letters are usually slanted and often joined together. The style of these typefaces is similar to ones written using pens, pencils, or brushes.

8. Display

   The types that fall into this category are intended for headlines and titles; everything in bigger size thus making it difficult to read as text type. The display types are usually decorated.

2.5. **Illustration**

According to Arnston (2012), illustration is an art which uses images to express or state an information in visual form. This type of art can come in diverse forms such as printed illustration, animation, motion graphic, etc. An illustration is also able to depict emotion, story, and imagination (p. 151 – 152).

2.5.1. Types of Illustration

There are seven types of illustration in accordance to the purposes of the illustration (Arsnton, 2012).

1. Recording and Book Illustration

    Illustration on recording and book purposes usually applied at the cover which is useful for promotion purposes. The illustration gives an overview of the contents inside the book or the recording.

2. Magazine and Newspaper Illustration

    The illustrations made for magazine and newspaper are intended to support the story in visual manner. On newspaper, the illustrations are usually drawn in black and white. Its is very different than in magazines where the illustrations are drawn in many different styles and colors.

3. Fashion Illustrations

    These particular illustrations are intended to visualize texture, materials, accessories, even the emotions depicted from a design.

4. Illustration for In-House Project

    Illustrations for in-house project are usually used as a communication tool to spread information among members in an institution. The examples are illustrations on calendar, brochure, website, poster, etc.

5. Greeting Card and Retail Illustration

    The illustrations created for these purposes act to complement the designs of toys, clothes, greeting card, etc. This type of illustration is made in accordance to the need of the retail company or the occasion.

6. Medical and Technical Illustration

   These type of illustrations are specifically intended for visualizing information on human's body or anything in correlance to science, medicine, or technology and chemical reactions.

7. Animation and Motion Graphic

   This type of illustration is often made in 3D, usually in video forms (p. 154 – 158).

2.5.2. Illustration Techniques

Wigan (2009) explained that illustrations can be made using various techniques. The techniques covered in this book is elaborated down below.

1. Acrylic

   Acrylic is a paint made from pigment and synthetic resin. This paint can be used to create illustration since it is highly pigmented (p. 20).

2. Felt-tip Pens

   These type of pens come with various types such as marker and drawing pen and can be used to color as well as drawing an illustration (p. 99).

3. Mixed media

   This is the type of illustration which uses combination of media such as paint, ink, pencil, etc (p. 151).

4. Pen and Ink

   This particular illustration uses stylus or pen for the drawing process. It usually intended for newspaper or books purposes. The color is limited to black and white only (p. 167).

5. Watercolor

   This technique uses watercolor paint and usually used to draw plants or wild lives (p. 259).

6. Digital Illustration

   This type of illustration is created using computer, thus the name digital illustrations (p. 82).

2.6. **Photography**

Upon designing the final project, the author incorporates photos into the design. Thus, the author needs photography theories to support the decision making while designing the final project.

2.6.1. Concepts for Photo Story

According to Taufan Wijaya (2016) on his book *Photo Story Handbook*, there are a few photo story concepts with each of them depicts different feels from documentary descriptives to narrative and essay photography (p. 25).

1. Descriptive

   It is the most used concepts by photographers because of the simplicity of the making. Descriptive photos depicts photographer's point of view and clearer story behind those photos will show with more photos.

2. Series

   Almost similar to the descriptive photos, a series photo concept as it name sounds involved a series of photos which create an illustration, usually for comparing materials.

3. Narrative

Narrative photos tell a story between one captured events to another. The narrative photography is often used for visual storytelling purposes such as photo book making.

4. Essay

This kind of photo concept depicts the photographer's perspective on an issue, often shown the opinion of the photographer. An essay photography often times used text to show data, statistics, and analysis to support the photo.

2.6.2. Photography Techniques

The author uses EDFAT as a guide to take photos for this final project making. EDFAT is an acronym for Entire, Detail, Framing, Angle, and Time. EDFAT was first brought to the public in Arizona State University by Frank Holy (Nonot, 2018). This technique is often used by journalists to better convey their message through photos.

1. Entire

As the name sounds, this techniques is used to photograph the entire object or things. Using wide shot in order to introduce the whole situation first before then diving in to detail.

2. Detail

Detailed photographs are the opposite of entire photographs. Often times used to highlight a phenomenon or object that is happening inside the entire photographs.

3. Frame

Framing the photo can help achieve better composition. By doing so, one could give context and correlation that is happening between the subjects captured to the entire scene. Also, to put emphasis on a picture.

4. Angle

Using different angles such as bird eye view, eye level view, and frog eye view would definitely bring out different feels to the photographs. Taking a photo from below could easily make the ebject captured looks bigger and gives it a might feel.

5. Time

Capturing moments which usually involves movements will always need a good timing. Sometimes taking photos can be challenging due to finding the right timing to capture the moments.

2.7. **Montessori**

Montessori is a learning method developed by a female Italian physician named Maria Montessori. It was the result of her research upon intellectual developments on children with intellectual disabilities. This method put focus on learning by doing self-directed activities including learn by doing and collaborative play in a prepared environment (Swari, 2020).

2.7.1. Brief History of Montessori

Dr. Maria Montessori, was one of the firsts female doctor in Rome back in 1896. She then involved in Women's Rights movement and became well known for her competency in treating patients. In 1901, Dr. Maria Montessori started studying about educational philosophy and anthropology. Later on she opened her first

school called *Casa dei Bambini* or Children's House in 1907. There she practiced her teaching using the materials she developed herself to the children in San Lorenzo (Montessori Australia, n.d.).

When Maria Montessori turned 40, she became devoted to popularizing her own teaching materials. Later on she founded AMI, The Association Montessori Internationale and patented her creation. The classrooms for Montessori learning is created featuring Montessori Method of Education for certified teachers can teach using the aid of certified materials in standardized facility. The wellbeing of the Association has been passed down to her son and from him to his daughter (Tubaki & Matsuishi, 2008).

2.7.2. Aspects Learned in Montessori

There are five key aspects learned in Montessori methods. They are practical life which includes life skill learning to develop children's confidence and independence, sensorial which help the child to refine every senses they have, language which based on phonetic awareness, mathematics which developed using concrete learning materials such as number boards, and culture which develop the children's knowledge about the world around them (Montessori Schools, 2016).

1. Practical life

   In this aspect, children learn how to care for themselves, environment, grace and courtesy, and control their movement. Caring for oneself include preparing food, dressing, and washing.

2. Sensory

This aspect of learning will allow children to refine their senses including sight, touch, smell, taste, sound, and kinaestethic. Some Montessori materials are designed to manipulate the children to only using specific senses. Materials such as Pink Tower can stimulate visual and auditory senses, as well as the ability to order and classify while refining children's fine motor skill.

3. Mathematics

It is developed with the use of concrete learning materials. Children learn mathematics through their sensory using hands-on materials. Few to name are number rods, number boards, and beads. Each exercise builds upon another and the child gradually moves to from concrete to abstract areas such as place value, addition, subtraction, multiplication, and fractions.

4. Language

Montessori based their language learning using phonetic awareness. This topic is not specially covered but being used and refined throughout the curriculum while learning other areas. The foundation for children's writing and reading skill is the spoken language first, thus the base of Montessori language learning.

5. Culture

Learning different cultures including geography, zoology, botany, and history will broaden children's view and understanding about the world around them. Though art and music can be classified as cultural activities, all areas encouraged children to be creative.