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Media and Information Literacy

Quarter 2 – Module 5:
VISUAL INFORMATION AND MEDIA

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MEDIA AND INFORMATION LITERACY

Quarter 2 – Module 5:
VISUAL INFORMATION AND MEDIA

What I Need to Know

This module was designed and written with you in mind. It is here to help you master the context of Media and Information Literacy. It contains varied activities that can help you as a Senior High School student to not just be an information literate individual, but a creative and critical thinker as well as responsible user and competent producer of media and information.

The module contains lesson in Visual Information and Media.

After going through this module, you are expected to:

1. Describe the different dimensions of visual information and media. (MELC)
2. Evaluate the reliability and validity of visual information and media and its/ their sources using selection criteria.

What I Know

Let us determine how much you already know about the Media and Information Literate Individual by answering the questions below. Use your notebook / worksheet for your answers.

A. Multiple Choice Select the letter of the best answer from the given choices.

1. Type of visual information that you normally see as either "pure black and white or grayscale having a number of gray shades or color containing a number of color shades.
   A. Formatted Text
   B. Image
   C. Unformatted Text
   D. RGB Color Mode

2. Color model used for colored lights like images on a monitor screen and has the colors red, green, and blue as its primary colors.
   A. RGB Color Model
   B. HSB Model
   C. CMYK Color Model
   D. Light Color Model

3. Color model used for colored inks like images printed on paper and has the colors cyan, magenta, yellow, and black as the primary colors.
   A. RGB Color Model
   B. HSB Model
   C. CMYK Color Model
   D. Light Color Model

4. A stage or process where the digital image is manipulated with the use of editing software.
   A. contrasting
   B. toning
   C. formatting
   D. Editing

5. Pictures that are either drawn by the hand or through computer software.
   A. Graphics
   B. Image
   C. Graphic Artist
   D. Text

6. In file format the key consideration in the selection of a particular format for storing visual media is _____.
   A. Resolution
   B. retrieval
   C. Compression
   D. quality

7. Visual Design Principles and Elements that suggest to always distribute the visual weight of objects, colors, texture, and space.
   A. Size
   B. Rhythm
   B. Focal Point
   D. Balance

8. It is uncompressed proprietary format invented by Microsoft.
   A. RAW
   B. PSD
   C. Bitmap (BMP)
   D. TIFF

9. Which file extension is an example of an audio file?
   A. .fly
   B. .mp4
   C. .wmv
   D. .mp3

10. Your classmate is making a poster with a theme “PEACE”. What you can suggest if he is asking help from you about what color background to be used.
   A. Red
   B. Blue
   C. Green
   D. Yellow

B. Complete the following acronyms:

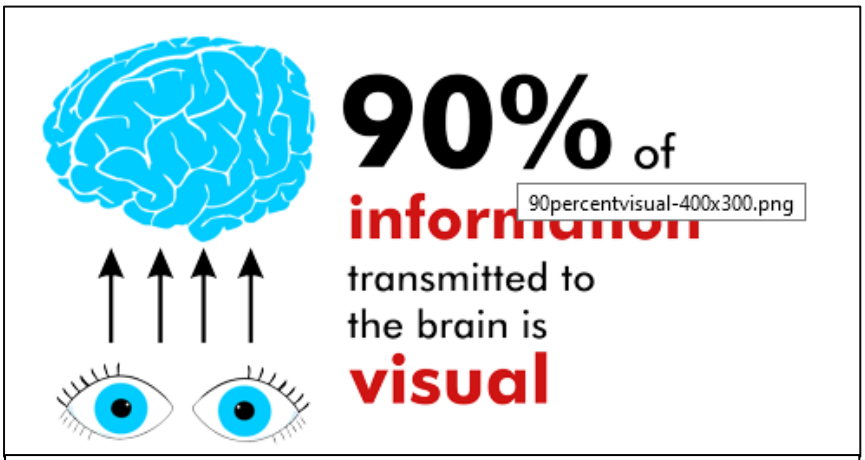
1. CMYK - _____
2. PNG - _____
3. TIFF - _____
4. PSD - _____
5. JPG - _____

MIL Visual Information and Media

What's In

In the previous lesson, we learned about Texts Information Media, in this lesson, we will learn Visual Information and take advantage to its potential for relaying or understanding messages by identifying the types of visual information and observe the design elements and principles.

Visual information entails the use of visual media (that may or may not be accompanied with audio/sound) in the form of photographs, motion pictures, video recording, graphic arts, visual aids, and other displays that use pictorial representations (Dictionary of Military and Associated Terms, 2005).



Source: https://dribbble.com/shots/2027409-Visual-Information-Infographic/attachments/2027409-Visual-Information-Infographic?mode=media

In multimedia presentation, developers or authors spend much time and effort to make a visual materials more appealing to the audience because pictures are not just supplements to the text – they also complement and complete the meanings suggested by the written text. You may roughly categories visuals as either images (pictures that depict some real world situation typically captured by a camera), or graphics (pictures drawn or painted that depict any fictitious scenario) (Parekh, 2006).

According to Boots Liquigan (2016), visual information is not merely an added feature to the written text to make it more sensible and more appealing to readers like you, it has its own distinct features that enhance your information acquisition.

Visual information may take the form of photographs, visual aids, and other displays that use pictures to convey idea. Visuals may either be images or graphics. In the aspect of learning, visual information may be useful because of the features and functions of pictorial messages with respect to printed tex. In visual information storage, compression is a consideration because the information might not be dramatically affected in terms of size, resolution, and ease of retrieval and sharing.

What's New

Activity 1: Pictorial Essay

Instructions: In the space below, create a pictorial essay on any topic you have in mind. Ask a classmate to retell your pictorial essay and validate or refute your classmate's version of the essay.

When you were growing up, you may remember yourself enjoying reading some materials with lots of pictures that accompany the written text. More often than not, the number of pictures in a page of a printed material can probably be the deal-maker or deal-breaker for you to even bother reading the entirely of that material. This goes to show how pictures can really be worth "a thousand words".

What is It

VISUAL INFORMATION AND MEDIA

EXAMPLE OF VISUAL MEDIA

- Photography
- Video
- Screenshots
- Infographics
- Data Visualization (Charts and Graphs)
- Comic Strips / Cartoons
- Memes
- Visual Note-Taking

Visual media are images or frames of images that we can construct and reconstruct to give different meaning to it. We can observe it with photographs, videos, infographics comics, memes and other objects that projects an image.

What is an image?

An image is a type of visual information that you normally see as either "pure black and white or grayscale having a number of gray shades or color containing a number of color shades." **In images, color is everything.** Color, in technical terms, ***refers to the sensation generated to the eyes of the beholder*** due to differences in frequencies. You may remember from your physics class that when light passes through a spectrum, lower frequencies produce the reddish hue, while the higher frequencies produce the bluish ones. In visual arts, you may consider black as the presence of all colors if color is to be considered as a ***pigment***. If color is explained in terms of principles of light, then white is the combination of all the colors.

Color as Primary Attribute of Images

Color is what gives form to an image. You are able to appreciate an image because of how the colors blend to create the image.

You discern the color of an object because when light hits an object, the object may absorb some color components of the light while it reflects those with frequencies specific to our eye. Color models, which are used to recognize and communicate color information, define a set of colors. The two most common ones

are the RGB color model and the CMYK color model. The RGB is used for colored lights like images on a monitor screen and has the colors red, green, and blue as its primary colors. The CMYK is used for colored inks like images printed on paper and has the colors cyan, magenta, yellow, and black as the primary colors. The two models are considered to be device dependent because they depend on the physical properties of the devices which generate the colors from these models.

Source: https://miro.medium.com/max/640/1*03CDeGvAoWdmd5AQnnnkmA.png

Another alternative color model is HSB Model which stands for Hue, Saturation and Brightness. This color model is device dependent.

Hue - specific tone of color),

Saturation - the intensity of a hue from gray tone to pure, vivid color, and

Brightness - the relative lightness or darkness of a particular color.

Remember that is it not always possible to convert a color accurately form one model to another because each model has its own range of colors.

Stage of Image Generation

Source: http://www.getloupe.com/v/9dg1bo8k

An image undergoes a process when it is generated. The conversion of a paper image into an electronic one is part of the input stage which involves the use of an image scanner. The scanner has sensors that capture and convert each portion of an image being scanned. These portions are turned into pixels, and are stored digitally in a computer. Another way an image may be produced is a digital camera, a gadget you are most familiar with since mobile phones these days have built-in digital cameras. Much like a scanner, a digital camera also has electronic sensors called Charge-Couple Devices (CCD).

Editing is a stage where the digital image is manipulated with the use of editing software. Editing involves "operations like selecting, copying, scaling, rotating, trimming, changing the brightness, contrast, color tones, etc. of an image to transform it as per the requirements of the application."

When the image has already been edited, it may be stored in a file format that can be displayed on the computer screen or in printed form. Storing or saving the image will require compressing the file into a size that will not take much of computer storage memory. There is a variety of file formats that may be used in storing images. Few other concerns on image storage include resolution and overall quality of the image.

What Are Graphics

Pictures that are either drawn by the hand or through computer software are called graphics. When you sketch or draw an image such as a chart or a drawing that may resemble an image, you create a pictorial representation of an idea or object. When you do so, you create a graphic.

If you become a graphic artist, you will be acquainted with two types of a digitally produced graphic. These are raster graphics and vector graphics. The Raster Graphics is much like an image especially when a drawing is digitized using a scanner and the Vector Graphic, on the other hand, is produced through computer software; thus, it is already in digital form. Vector graphics are typically stored in smaller file sizes, and can be scaled without compromising the quality of the drawing.

Software is used to edit the appearance of the graphic, enabling into an animation especially in multimedia presentation (Parekh, 2006)

Graphics as Used in Learning or Instruction

Visual information is especially useful in learning. According to Clark and Lyons (2011), graphic has Three Functions in this aspect of your use for such visual information.

1. **Surface Features** – These refer to the salient features of visuals; and often, they suggest that "a series of still visuals can be more effective for some learning goals such as teaching how things work (Mayer, Sims, and Tajika (2005), as cited in Clark and Lyons, 2011)

Surface Features of Graphics (Clark and Lyons, 2021)

Types	Salient Features	Definition	Examples
Static Art	Illustration	Depicting of visual elements, using various media	Pen and ink outline art; two-dimensional watercolor of flower parts, diagrams and charts.
	Photographic	Captured image, using photographic or digital technologies	Screen capture of a software screen, Photo of a person answering phones.
	Modeled	Computer-generated (CG) – faithful reproduction of reality, using various media, including computer-assisted drawing packages.	Three- dimensional representation of an office, three-dimensional representation of combustion engine.
Dynamic Art	Animation	Series of images that simulate motion	Demonstration of steps in a software procedure. Process of ammunition detonation shown through line art.
	Video	Series of images, captured as they occur, digitally, on film, or magnetic tape, displayed serially, over time	Capture of the hydrogen bomb test explosion at White Sands, New Mexico; Film of a human resources director interviewing a job applicant.
	Virtual Reality	An interactive three-dimensional world that dynamically changes as the "user" moves through and views it.	Simulated walkthrough of the human heart.

2. ***Communication Function.*** Graphics have the communication purpose to show motion or represent illustrate quantitative relationships. The table below, you will see how a graphic may communicate certain ideas.

Communication Functions of Graphics (Clark and Lyons, 2011)

Functions	A graphic Used to	Example
Decorative	Add aesthetic appeal or humor	Art of the cover of a book; Virtual of a general in a military lesson on ammunition.
Representational	Depict an object in a realistic fashion	A screen capture of a software screen; A photograph of equipment.
Mnemonic	Provide retrieval cues for factual information	A picture of a stamped letter in shopping cart to recall the meaning of Spanish word, carta (letter)
Organizational	Show qualitative relationships among content	A two-dimensional course map; A concept tree
Relational	Show quantitative relationships among two or more variables.	A line graph; A pie chart
Transformational	Show changes in objects over time or space	An animation of the weather cycle; A video showing how to operate equipment
Interpretive	Illustrate a theory, principle, or cause-and-effect relationships	A schematic diagram of equipment; An animation of molecular movement.

3. Cognitive Psychological Functions – Graphics also serve such functionality by illustrating the interaction of visuals with" human learning processes such as attention or retrieval from memory".

Uses of Graphics

Learners like you are more responsive to ideas because of both the denotative capacity and connotative power of visual images and representation (Liquigan, 2016). Web sites or multimedia output normally makes use of graphics to build user

interface. A graphic can become the clickable item such as a browser menu, button, tab, or window.

In automated offices, graphics are used (especially for desktop publishing) to represent data in charts, tables, graphs, and other data presentation tools. Also, fields that require designs or drawings heavily use graphics for 2D or 3D modeling of such designs. Simulators and animators also use graphics for their animation, simulation, and other related applications. Even artworks and decorations utilize graphics. In media such as film and television, graphics are typically used to design program title or banners, advertisements, and visual effects.

The File Format, Lossy Compression, and Lossless Compression

File Format – The key consideration in the selection of a particular format for storing visual media is ***compression***. This is because you may not want to reduce or compromise the quality of your data especially when you want to store them in smaller file sizes so that they may be retrieved or downloaded easily. As has been mentioned earlier, color is everything. So Reducing the file size will also affect the color quality of visual information.

Lossy Compression – When you are amenable to reducing the quality of the image or graphic due to reduction of the file size, you are opting for a lossy kind of compression. The image or graphics may have a lower resolution but would still keep the appearance of the visual since you may not be too sensitive with the color change.

Lossless Compression – A more accurate way of storing the visual information is through lossless compression because it does not allow the image to dramatically lose its appearance. This still is an efficient manner of compressing since it. "look(s) for a recurring pattern in the file, and replace (s) each occurrence with a short abbreviation, thereby cutting the file size. (www.users.wfu.edu)."

Common Visual Media File Type

Type	Description
TIFF (Tagged Image File Format	- a very flexible format that can be lossless or lossy. - details of the image storage algorithm are included as part of the file. - used almost exclusively as a lossless image storage format that uses no compression at all. - Sometimes a lossless compression algorithm called LZW is used, but it is not universally supported.
PNG (Portable Network Graphics	Is also a lossless storage format. However, in contrast with common TIFF usage, it looks for patterns in the image that it can use to compress file size. The compression is exactly reversible, so the image is recovered exactly.
GIF (Graphic Interchange Format	Creates a table of up to 256 colors from a pool of 16 million. ***If the image has fewer than 256 colors, GIF can render the image exactly***. When the image contains many colors, software that creates

	the GIF uses any of several algorithms to approximate the colors in the image with the limited palette of 256 colors available. Better algorithms search the image to find an optimum set of 256 colors. Sometimes GIF uses the nearest color to represent each pixel, and sometimes it uses "error diffusion" to adjust the color of nearby pixels to correct for the error in each pixel. GIF ***achieves compression*** in two ways. First, it reduces the number of colors of color-rich images, thereby ***reducing the number of bits needed per pixel***, as just described. Second, ***it replaces commonly occurring patterns*** (especially large areas of uniform color) with a short abbreviation: instead of storing "white, white, white, white, white," it stores "5 white."
JPG (Joint Photographic Experts Group)	**PG** is ***optimized for photographs and similar continuous tone images*** that contain many, many colors. It ***can achieve astounding compression ratios even while maintaining very high image quality***. GIF compression is unkind to such images. JPG ***works by analyzing images and discarding kinds of information that the eye is least likely to notice***. It ***stores information as 24 bit color***. Important: ***the degree of compression*** of JPG is adjustable. At moderate compression levels of photographic images, it is very difficult for the eye to discern any difference from the original, even at extreme magnification. Compression factors of more than 20 are often quite acceptable. Better graphics programs, such as Paintshop Pro and Photoshop, allow you to view the image quality and file size as a function of compression level, so that you can conveniently choose the balance between quality and file size.
RAW	**RAW** is an image output option available on better digital cameras. Though lossless, it is a factor of three of four smaller than TIFF files of the same image. The disadvantage is that there is a different RAW format for each manufacturer, and so you may have to use the manufacturer's software to view the images. (Some graphics applications can read some manufacturer's RAW formats.)
BMP (Bitmap)	**BMP** is an uncompressed proprietary format invented by Microsoft. There is really no reason to ever use this format.
PSD (Photoshop Document) or PSP (Paint Shop Pro)	are ***proprietary formats used by graphics programs.*** Photoshop's files have the PSD extension, while Paint Shop Pro files use PSP or PSPimage. These are the ***preferred working formats as you edit images in the software,*** because only the proprietary formats retain all the editing power of the programs. These packages use layers, for example, to build complex images, and layer information may be lost in the nonproprietary formats such as TIFF and JPG. However, be sure to save your end result as a standard TIFF or JPG, or you may not be able to view it in a few years when your software has changed.

Source: https://matthews.sites.wfu.edu/misc/graphics/formats/formats.html.

Currently, GIF, PNG, and JPG are the formats used for nearly all web images. TIFF is not widely supported by web browsers, and should be avoided for web use. PNG does everything GIF does, and better, so is increasingly replacing GIF. PNG will *not* replace JPG, since JPG is capable of much greater compression of photographic images, even when set for quite minimal loss of quality.

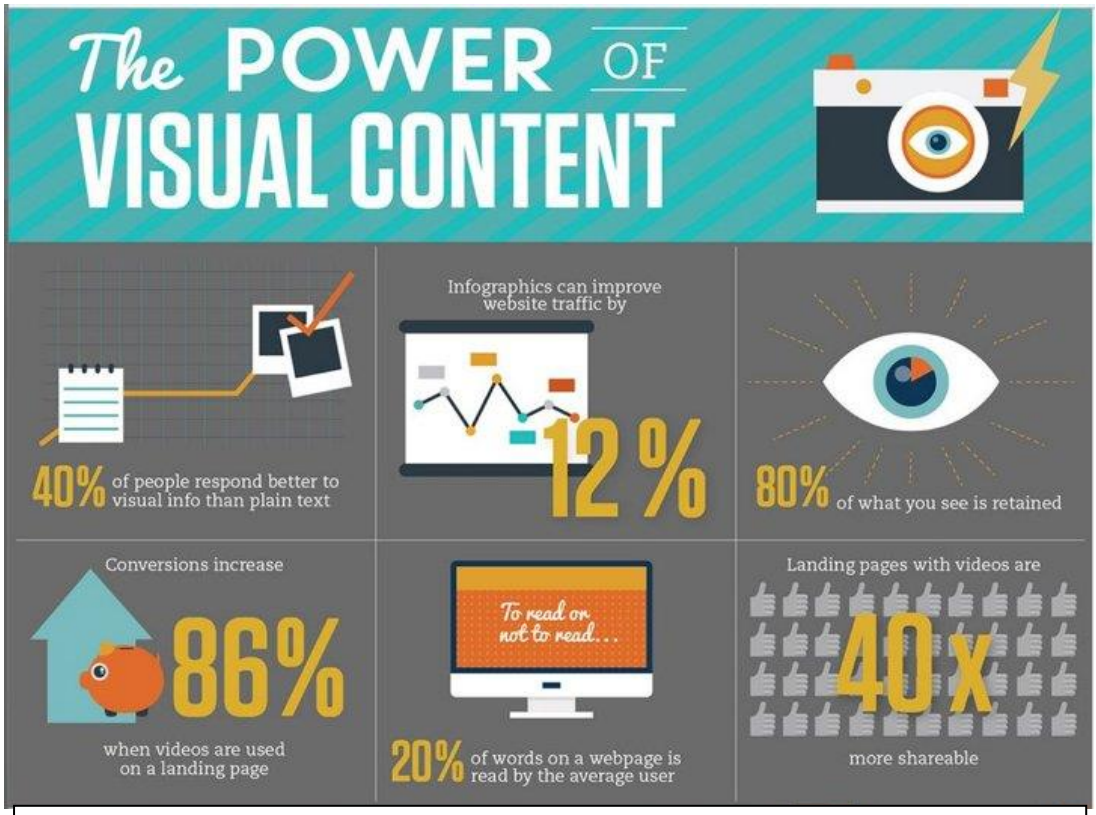
Advantages and Disadvantage of Visual Media

Visual information is useful for a variety of reasons. A visual aid is helpful to present information to illiterate audiences. It can also stimulate oral communication since people may still need to explain the data that is contained in a visual presentation such as graphs, charts, and tablets.

Presenting information visually is an easy way to relay information because it makes use of universal cues or signs that people are familiar with. Complex information is presented graphically which makes it easier for people to interpret the message. As has been said over and over, pictures are worth a thousand words, and thus they have an impact on the people's understanding of ideas, regardless of who and where they are. Visual information also saves times in relaying the message. The use of visual information also enhances resourcefulness and creativity.

In the journalist practice, visual information is very useful in the quick presentation of facts, in the emphasis of points in the printed text, and in conveying the information to the readers.

But using visual information may also be very limiting because of the cost of the preparation, the complexity of certain images and graphics, and the lack of familiarity of the audience to some cues and signs conveyed by the visual information. The latter concerned may be due to the ambiguity of the visual information or he multiple meanings that a single visual can suggest to different audiences.



Source: https://twitter.com/agilecrm/status/1024660887376982016/photo/1

What's More

Activity 2: Basic Design Principles

Using the internet access, "The Principles of Design and Their Importance" on the link provided below:

https://www.toptal.com/designers/ui/principles-of-design

In your notebook or worksheet complete the following table:

Basic Design Principles

No	Element	Description
1.	Contrast	
2.	Balance	
3.	Emphasis	
4	Proportion	
5.	Hierarchy	
6.	Repetition	
7.	Rhythm	
8.	Pattern	
9.	White Space	
10.	Movement	
11.	Variety	
12.	Unity	

What I Can Do

Activity 2: Evaluate Me

Instructions: Select at least one example of each of the following visual information found online and critique how the information has been presented base on design principles and elements of visual information and media discussed in this module.

- A Web site of a local or national politician
- A social media Web site that is heavily using visual information
- An online news portal or e-zine (electronic magazine)

Your critique must not be less than 300-words and should be encoded as .doc or .pdf file and uploaded in a file-sharing platform that your teacher has set up for your class.

Assessment

A. Multiple Choice Select the letter of the best answer from the given choices.

1. Type of visual information that you normally see as either "pure black and white or grayscale having a number of gray shades or color containing a number of color shades.
   C. Formatted Text C. Unformatted Text
   D. Image D. RGB Color Mode

2. Color model used for colored lights like images on a monitor screen and has the colors red, green, and blue as its primary colors.
   a. RGB Color Model C. CMYK Color Model
   b. HSB Model D. Light Color Model

3. Color model used for colored inks like images printed on paper and has the colors cyan, magenta, yellow, and black as the primary colors.
   a. RGB Color Model C. CMYK Color Model
   b. HSB Model D. Light Color Model

4. A stage or process where the digital image is manipulated with the use of editing software.
   a. contrasting C. formatting
   b. toning D. Editing

5. Pictures that are either drawn by the hand or through computer software.
   a. Graphics C. Graphic Artist
   b. Image D. Text

6. In file format the key consideration in the selection of a particular format for storing visual media is _____.
   a. Resolution C. Compression
   b. retrieval D. quality

7. Visual Design Principles and Elements that suggest to always distribute the visual weight of objects, colors, texture, and space.
   a. Size B. Focal Point
   b. Rhythm D. Balance
8. It is uncompressed proprietary format invented by Microsoft.
   a. RAW C. Bitmap (BMP)
   b. PSD D. TIFF

9. Which file extension is an example of an audio file?
   a. .fly B. .mp4
   C. .wmv D. .mp3

10. Your classmate is making a poster with a theme “PEACE”. What you can suggest if he is asking help from you about what color background to be used.
   a. Red C. Green
   b. Blue D. Yellow

B. Complete the following acronyms:

1. CMYK - _____

2. PNG - _____

3. TIFF - _____

4. PSD - _____

5. JPG - _____

Answer Key

What I know

A. Multiple Choice

1. B
2. A
3. C
4. D
5. A
6. C
7. D
8. C
9. D
10. B

B. Complete the following acronyms:

1. CMYK - Cyan, Magenta, Yellow, Black
2. PNG – Portable Network Graphics
3. TIFF – Tagged Image File Format
4. PSD – Photoshop Document

Assessment:

A. Multiple Choice

1. B
2. A
3. C
4. D
5. A
6. C
7. D
8. C
9. D
10. B

B. Complete the following acronyms:

1. TIFF – Tagged Image File Format
2. PNG – Portable Network Graphics
3. GIF – Graphic Interchange Format
4. RGB – Red, Green, Blue
5. JPG – Joint Photographic Experts Group

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