

LOOK AND THINK EXERCISES ON VISUAL COMMUNICATION DESIGN FOR NON- DESIGNERS

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Abstract: This study proposes a basic learning program for creating ideas in visual communication design for students who do not specialize in design. Non-designers normally do not know how to conceive ideas to give form to information. We have developed exercises for non-designers to advance the elaboration of ideas through step-by-step processes; the exercises' subjects are perception, visual variables, signification, and time. This program focuses on making new meanings in the design process, not making forms. Through this program, we expect students to become aware of the meaning of visual images as they create and use them.

Keywords: *visual communication design, non-designer, design education*

1. Introduction

Visual communication is ubiquitous in any field of study or work. Visual communication is any communication in which people exchange information through visual means, for example, print or Web pages with characters, illustrations, and photos. Every professional must be well-grounded in the design of information related to his or her respective field.

The advent of personal computers and software for desktop publishing enables non-designers to create media content such as posters and brochures that used to be created by professional designers mainly for publicity work. In the case of Web documents, Web technology has brought about a situation that people can publish information in a well-designed format without having design knowledge or skills; Web authoring tools reinforce this tendency. We call here people who have not studied visual design formally yet and want to do design work for personal or business needs "non-designers". While they have the same tools such as computers and software that professional designers do, they don't have the same knowledge and experience. To fill this gap, there are a lot of how-to books for graphic design including Web pages. Williams' (2008) book is one good example; it provides many useful suggestions to determine fonts, colours, and layouts. However, even before applying these tips to their own design work to make forms, non-designers don't know how to start to design information. Their lack of knowledge has two aspects:

- (1) They don't know how to create visual forms such as shapes, colours, and layouts for information.
- (2) They don't know how to create ideas, concepts, or meanings to express information.

Concerning (1), we researched the learning process and developed worksheets for nurturing Web page visual design for students who do not specialize in design or art (Ariga & Watanabe, 2008). The process and worksheets help students to create a visual design by following processes that experienced designers unconsciously apply. However, these worksheets do not help with aspect (2) concerning their lack of knowledge of how to create concepts; in fact, educational programs for non-designers to learn how to make concepts of visual communication design are rare.

Non-designers need to express information by creating visual designs for their own special fields for personal or business purposes. Therefore universities and colleges provide courses on visual design as a skill for presentation and communication from the viewpoint of liberal arts. Alway-Rosenstock (2011) reported a class on graphic design that serves both first-year design students and students from other departments, and claimed that design education can create benefits for non-designers' professional success. While we agree that design education enriches students' learning in any field of study, we think that non-designers need a learning program that is different from one for design students, since most of non-designers lack confidence in their aesthetic sense and basic knowledge of visual design. Therefore, we propose a basic learning program for creating ideas on visual communication design for students who do not specialize in design.

2. Objectives

Visual communication design includes designing works such as posters and brochures, Web pages, and videos. The design process generally comprises the five steps shown in Figure 1. Our program aims to foster learning in the first three steps, before step (iv), which covers visual forms such as shape, colour, typography, and layout.

Steps (i), (ii), and (iii) can be called the phase of making a new meaning, whereas step (iv) makes a form. Through these steps, a new value or meaning can be created from information collected and researched. Kolko (2010) described an abductive sense-making process as synthesis and discussed methods for this process that are insular within the designers' private experiences. The abductive sense-making process Kolko described is equivalent to the phase for making meanings in Figure 1.

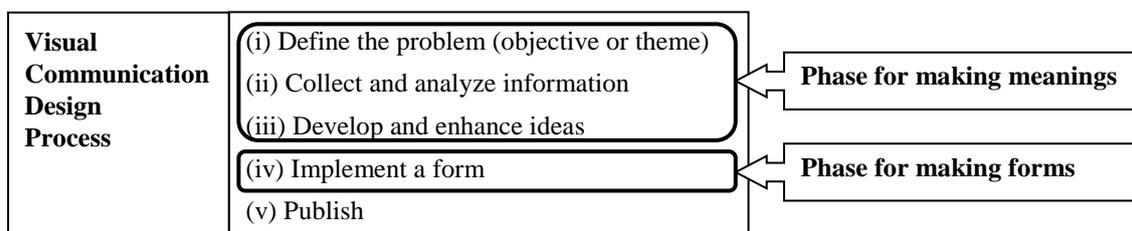


Figure 12. Phases for making meanings and forms in the process of visual communication design

Many assignments and courses have been proposed for students in departments of art and design to create ideas and forms of visual design (for example, Resnick, 2003; JSSD, 2006). The method in most of them is to encourage students to think of their ideas after giving just a main theme. However, the way of relying on individual competence to conceive ideas doesn't work effectively for non-designers because they don't have experiences of creative thinking and don't know how to start when they are asked to think. Resnick (2003) reports assignments for students to develop basic conceptual thinking by using interesting objects. For example, in an assignment of designing a book cover for Freud's book, students are required to read the book and research Freud at the first step of the process of this assignment, and then draw sketches for critique. In the case of non-designers, they can, of course, read and research, but most of them would find it difficult to begin drawing sketches because they don't know how to elaborate the ideas that they have researched and also they aren't used to drawing, even though a rough sketch is enough.

Our learning program doesn't directly assign a design task by setting specifications such as creating an advertisement poster as the final requirement of an exercise. We employed more fundamental and

general elements in the humanities field as subjects to have the students find new meanings through step-by-step processes. It is expected that students will utilize what they learn from this program in their respective fields afterwards.

We have developed four exercises of which the subjects are perception, visual variables, signification, and time. The first two subjects mainly focus on step (ii) in Figure 1 and the last two focus on step (iii). We call our learning program "Exercises for looking at and thinking about the world". The following section describes these exercises in detail. Zande (2010) stated that design education advances cognitive development through the use of the design process of problem solving. We anticipate that non-designers can derive cognitive design mind from the exercises.

The exercises require the use of only a Web browser, a text editor, and a digital camera (or a cell phone with a camera). Specific design tools such as graphic editing software and photo editing software are not necessary. This means that the program can be used in a class that does not have access to computers with expensive software.

There are two information processing courses in Japanese high schools: a general course and a specialized course; the later includes the subject of information design. The exercises described in this paper can be used not only in a college-level liberal arts course but also in high school courses.

3. Contents of the program

3.1. Outline

Exercises in our learning program require students to do the following tasks:

- (1) Observe consciously and appreciate the meanings of visual images.
- (2) Fixate on what they observe to consider and share with others.
- (3) Articulate in words what they find and reconceptualize their findings.
- (4) Express what they stated in words in a visual way.
- (5) Present their result in class, and evaluate each other's work.

One feature of our learning program is that all outcomes of each task are shared by publishing Web pages. Students place what they observe, find, and create in Web pages, and subsequently discuss each other's in class. These Web pages also become archives for self-reflection. We prepare the Web page template in advance; thus students can easily produce Web pages by just inputting their visual images and writings into the template.

In the presentation session, students evaluate each other's results using an evaluation sheet. The sheet includes questions on their ideas from three viewpoints: the idea is unique, the idea is understandable, and the idea is empathic. Students respond on a 5-point Likert-type scale. The purpose of this peer evaluation is for students to concentrate on the presentation and think about the meanings of the presented ideas. After finishing the program, students reflect on what they created and learned by filling out a questionnaire. The questionnaire is composed of two parts. The first part asks whether the exercises are interesting or not, and whether they have learned something new or not, using a 5-point Likert-style scale; it also requires them to write down reasons for their responses. The other part is a rubric of 3 questions with 5 criteria to assess their own attitude concerning how well they explored the theme, generated original ideas, and elaborated their expression.

3.2. Exercise 1: Perception

Students don't usually notice their inherent ways of looking at the world. Exercise 1 aims for students to understand the human tendency of visual perception, and also to train them in conscious observations. The Gestalt psychologists stated that there are certain universal features in human visual perception (Noguchi, 2007). Gestalt factors have been taught as a part of basic knowledge of graphic

design, since understanding the human tendency of visual perception helps create visual communication design. The exercise proceeds along the following steps:

- (1) We explain seven gestalt factors: figure-ground relationship, closure, proximity, similarity, good continuation, uniform connectedness, and the Prägnanz principle.
- (2) Students collect objects or scenes of everyday life that depict any of the seven gestalt factors by taking photos.
- (3) Students select the best photo for each factor, and write a description of how the object or the scene in a photo is visually perceived and which factor is related to this perception. Then they produce Web pages with the photo and the description for each factor (Figure 2).
- (4) In class, students view each other's collections of visual images, and discuss each other's observations.

Conscious observations make students become aware of visual perception and find hidden meanings.



Figure 2. Students' works for Exercise 1: (left) Figure-ground relationship; (middle) Similarity; (right) Closure

3.3. Exercise 2: Visual variables

Exercise 2 intends to develop awareness of how a graphic image expresses quantity, quality, and distinction, based on Bertin's work (1967/2010). While exercise 1 focuses on conscious observation, this one focuses on conscious use of visual symbols.

- (1) We explain Bertin's visual variables: coordinates, shape, orientation, colour, texture, shades, and size.
- (2) Students research data that are different in each prefecture or area.
- (3) Students choose visual variables to represent attributes of the data, create a scale, and use it to express the data in a map.
- (4) Students produce a Web page with the created map, the scale and its description, and present it in class (Figure 3).

Wurman's book (1999) consists of info-graphics for clear and easy understanding of statistical data in the USA. While these are mainly composed of illustrations, and not necessarily in the form of a map, this exercise centres on creating a map scale with visual images as the variables.

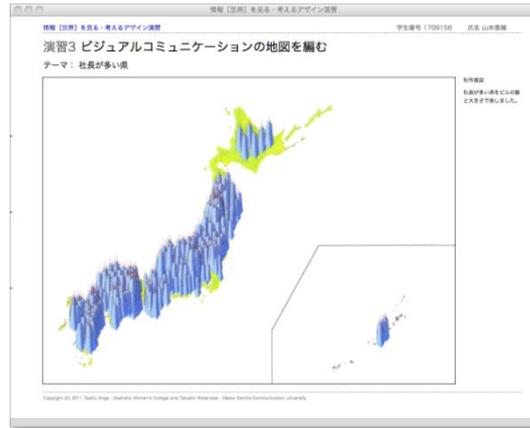


Figure 3. A student's work for Exercise 2: Number of company presidents in each prefecture

3.4. Exercise 3: Signification

This exercise aims at getting students to think of signification by visual images. Barthes (1957/1967) argued that a sign consists of a signifier and a signified at the level of denotation, which is the first order of signification. He proceeded to say that connotation is the second order of signification, which uses the denotative sign (the first order of signification) as its signifier and attaches to it an additional signified, so denotation leads to a chain of connotations. Chandler (2007) noted that changing the form of the signifier while keeping the same signified can generate different connotations. In this exercise, we encourage students to explore connotations of what is photographed in social and cultural contexts.

The exercise has two processes: one for thinking of denotation, and the other for thinking of connotation. The exercise proceeds along the following steps:

- (1) We explain about signification based on Barthes' thoughts on denotation and connotation of visual images.
- (2) Students take photos expressing the denotative significance of a given verb. We select beforehand verbs that have multiple meanings as candidates; for example, the Japanese word "tsunagu" has meanings such as keep, chain, connect, communicate, tie, intermediate, join, confine, and so on. The photos taken by a student become a denotative sign.
- (3) Students select nine photos and produce a Web page to show them (Figure 4, left).
- (4) Students view all sets of a word and visual images produced by others.
- (5) Students select four photos from the Web pages produced in the previous steps to create a set of four photos combined to represent an original theme. One of the four photos must be their own. The four photos generate a new connotative signification under the original theme. Then students give their own title to the set of four photos and write a description of a connotative signification.
- (6) Students produce a Web page with the title, photos, and description (Figure 4, right. Title: Change; Description: Everything is transient. It includes positive factors such as birth, hope, or blooming, but it can't continue forever. Pathos, vanity, or the end is coming).



Figure 4. Students' works for Exercise 3: (left) Photos for showing direct visual images of the word "tsunagu" (connect); (right) A set of photos combined under the title "change"

3.5. Exercise 4: Time

An aim of Exercise 4 is to express the invisible passage of time. This exercise asks students to record what they saw or did during a particular period of time, and to find a visual way to present what they recorded. There are similar workshops that record a personal life and present it visually (Harrison, 2006; Donath, 2008). Exercise 4 has more elaborate processes to conceive an idea of what they focus on and how to express it. Students make two records: one is of their pre-research for finding a concrete theme for the next data collection; and the other is of real data focused on the theme. Students express the theme visually by using the photos taken in the second record. The exercise proceeds along the following steps:

- (1) Students study features of time, such as one-dimensional movement, cyclic pattern, or rhythm, in biological, social, and cultural contexts. They also learn that the sense of the passage of time is different depending on the state of mind, and study general ways of presenting time such as a time chart, a calendar, and a graph.
- (2) Students write out what happened and what they did for the past six hours on cards, one item on each card, and number the cards consecutively by time order.
- (3) Students discover what they must focus on to express a feature of time by observing the cards. Students will find a rhythm or pattern in the sequence of cards, or a new viewpoint by classifying them, for example eating, meeting people, having fun, and so on. Through this observation, students determine a theme that they focus on in the next step.
- (4) Students make a record in real time by taking photos for any six hours according to the theme that they determined in the previous step, and then produce a Web page to show these photos sequentially (Figure 5, left).
- (5) Students conceive how to express the theme visually. This is a process of editing ideas by writing down notes, organizing the photos they took for selection, or drawing a sketch of an idea. Students produce a Web page to show what and how they think. Sketches or selected photos are placed on the Web page with a description (Figure 5, middle. Description: Four photos of a scene with the sky. They show where I walked on that day; and the colours of the sky and clouds show the time roughly).
- (6) Finally, students create a visual image to express their own theme in relation to the passage of time using photos they take, and produce a Web page to show it (Figure 5, right. Description: Collage with four photos. The time gradually changes from the upper part to the lower with the things that I looked at on that day. The lower part seems like the reflection of the night view in the river).



Figure 5. A student's works for Exercise 4: (left) Record: photos as a record of the theme of "rambling in Kyoto"; (middle) Editing: focus on photos that show the sky; (right) Expression: collage expressing changes in the sky as time passes

4. Practice and results in class

Our program includes four exercises as a learning process; however, an instructor can choose whether to adopt all sequentially or select some of them depending on circumstances. In practice we used the exercises in three classes in 2011 as follows:

(i) Used the first three exercises in a class in visual communication design for 46 second-, third-, and final-year students belonging to the Department of Information & Media in the Faculty of Liberal Arts.

(ii) Used the first three exercises in a class in visual communication design with 17 post-graduate students who specialized in information science.

(iii) Used Exercise 4 in a class with 14 second-year students that is a seminar course on information design in the Department of Information & Media.

Time limits prevented us from including all four exercises in the syllabus of classes (i) and (ii); only three exercises were used. In class (iii), we utilized Exercise 4 as a warm-up to learn the process of conceiving an idea before starting a final project of creating media contents whose theme was the passage of time. Samples of students' output in class (i) are shown in Figures 2, 3, 4, and 5. We collected students' output of the exercises and reflections about their learning by the questionnaire. Collecting and analyzing data is not completed yet; however, part of the preliminary results is shown here.

32 students in class (i) and 17 students in class (ii) completed the questionnaire. Scatter plots in Figure 6 shows those students' responses to two questions: Were the exercises interesting?, and Did you learn something new?, using a 5-point Likert-style scale. 62.5% and 52.3% of students respectively have positive responses (4 and above) to both questions.

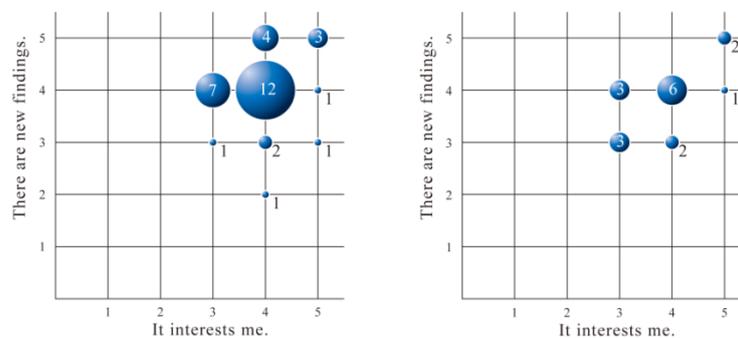


Figure 6. Relationship of responses to questions of whether the exercises interested you, and whether you learned something new (1:strongly disagree, 2:disagree, 3: neutral, 4: agree, 5: strongly agree):(left) class (i), (right) class (ii)

We analyzed qualitatively open-ended comments for responses to the two questions. 89 sentences were extracted from 32 students' comments in class (i), and categorized into 5. Table 1 shows the number of comments for each category and the number of students who wrote those comments.

Table 1. Categorizing comments in questionnaire

Categories		Num. of comments		Num. of students
Positive comments	Understand or become aware of objectives	41	73 (82%)	24
	Good to share and look at others' works in class.	19		14
	Enjoy exercises	13		13
Negative c.	Hard to think or complete tasks	9 (10%)		9
Neutral c.	Not related the exercises	7 (8%)		7

Positive comments are, for example, as follows:

- Realized a different way of looking at things from the previous one; it is interesting.
- Noticed that there are interesting forms and hidden meanings in daily life.
- Interesting to think of visual images from a word, and inversely written descriptions from visual images.

5. Discussion

Figure 6 shows students' self-assessment of learning from this program. We had hoped that students responded with 4 and above to both questions. However, 38% in class (i) and 48% in class (ii) responded with less than 4 to either question. Looking at the comments, as indicated in Table 1, we saw that 24 students in class (i) clearly described 41 comments of comprehension and recognition of the objectives of the exercises. It means that one-third of the students didn't develop a consciousness of learning objectives. Improvement of learning materials and addition of more exercises are necessary to attain the program's objectives.

Moreover, we need further practice to indicate how our program influences students to create new visual meanings. We intend to evaluate students' output and analyze it in relation to students' reflections.

Through the practice in class and comments on the questionnaires, we observed that sharing output in class by Web pages helped to open students' eyes to different views and ideas. Additionally, the method of using photos as materials is appropriate because all students can have the same quality of materials no matter how good or bad their drawing or artistic skills are.

Furthermore, we plan to develop a Web application to generate Web pages automatically by uploading photos and inputting descriptions. Students must currently use a text editor to edit format files when they produce Web pages when doing the exercises. This Web application will avoid this troublesome step.

6. Summary

This paper proposes a learning program to guide non-designers to create new meanings expressed visually. Exercises 1 and 2 focus on understanding visual perception and use of visual images by conscious observation. Exercises 3 and 4 aim to experience creative thinking for visual communication design, and to express what students find or conceive both in words and in visual representations. Further research will elaborate and add to the contents of the exercises to satisfy the program's objectives.

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