# A study of design concept generation method which begins with research

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**Abstract**: The purpose of this research is to develop methods which help make concepts for research-based designs at educational scenes.

We usually try to generate design concepts based on the data acquired through observations and interviews. Generating concepts by understanding the demands of users from the contextual behavior of the users shown in the data is not easy for the students.

The author now proposes two methods: shuffle discussion and acting out. In the shuffle discussion method, concepts are mandatorily shared in the early stages of development by the development team members who present the concepts to other team members for further elaboration. In the acting out method, the users' behavior - when they use the design - is reproduced in short plays based on the achieved concepts in order to get feedback from the audience and to provide the development team with new ideas.

To verify these methods, the author conducted two workshops and a 6-month class in 2008. Through the verification, the author tried to prove that these two methods are effective in making design concepts.

**Key words: Shuffle Discussion, Concept Making, Ethnography, acting out.**

## 1. INTRODUCTION:

Many attempts to learn information design, where the designs are considered based on research using the concept of the Human Centered Design process, have been made. Recently, in particular, there have been an increased number of classes using the ethnography research method.

One of the issues is that they can't generate concepts well though they have gathered sufficient data. In this situation, designers who already have work experience would be able to analyze their own grammars. But things are not so easy for undergraduate students with limited experience.

This research focused on the "Shuffle Discussion" method, which sophisticates concepts and has been proven efficient in the design education field in recent years, and the "Acting Out" method, which expresses user contexts, in an attempt to verify their effects.

## 2. SHUFFLE DISCUSSION:

Shuffle discussion is a method of preparing sophisticated designs in which advice is collected from people outside the development team after explaining the concept to them. This discussion is held during the concept making stage of design work, which usually begins with research. This seems just the same as students taking advice from teachers, but a few differences can be observed in the actual examples, which we will now clarify.

In this article, we define "Concept Making" as sharing the values and specifications which are provided to users among the development team members before designing things, including prototypes.

## 3. What is SHUFFLE DISCUSSION?

Here, we would like to give you a brief explanation of Shuffle Discussion. The processes of the discussion are:
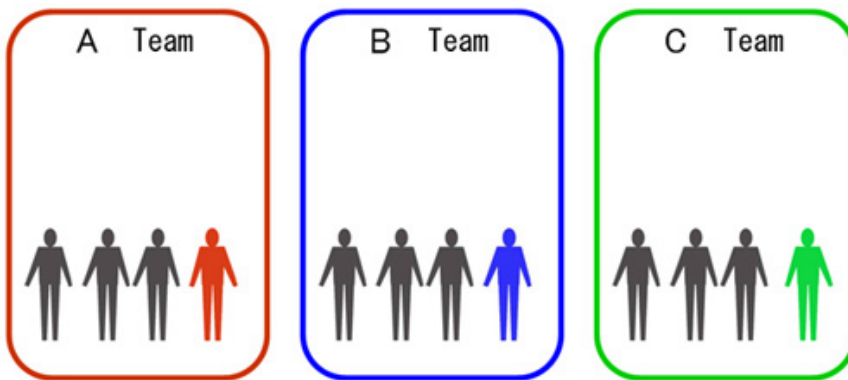


Figure:1

1) When forming concepts among team members after research, make it a rule to create a preliminary concept and share it to a degree such that all team members can explain it.
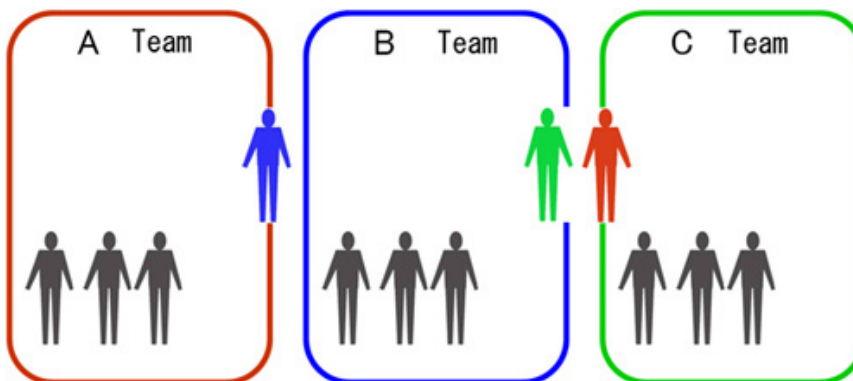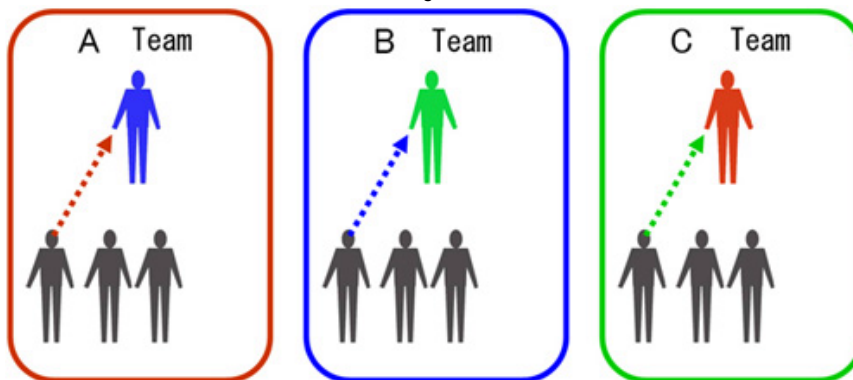


Figure:2



Figure:3

2) Have one person sent from another team. One of your team members explains the concept to the person sent.
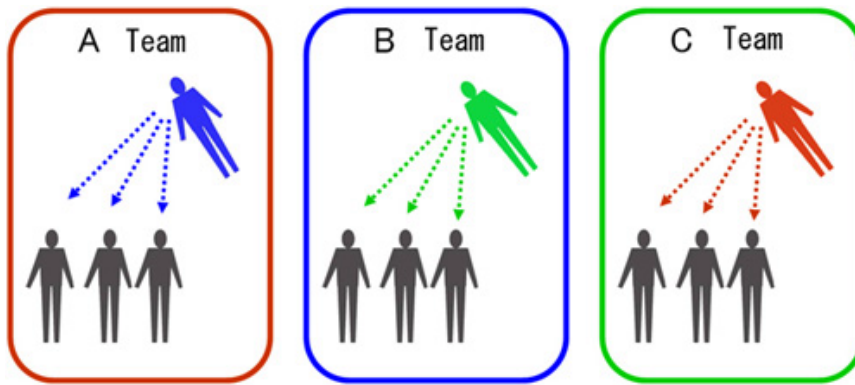
Figure:4

3) After the explanation, the person sent asks questions and gives advice.

4) One session consists of giving explanations and receiving questions/advice. It lasts for five minutes. Change the group of people and perform another session. Repeat this a few times.

  It's called Shuffle Discussion probably because the groups of session participants are literally shuffled: a person from one group joins another, and explainer also changes each session.


Figure:5


Figure:6

  The following two effects of the discussion were considered:

A) By alienating one's ideas, one can perceive the reactions of the audience, forming a "social self", which is believed to be formed by accepting a role, as George Herbert Mead claims, that others expect one to play.

B) By focusing on the actions of the person who was sent by another group, we can exchange knowledge, learning what other teams are thinking.

  Our workshop was based on a method of promoting our own awareness, and looking-back, and we had a hypothesis: the discussion was based on an exchange of knowledge.

## 4. An example of verification:

We used these methods at two information design workshops, which were held in Yokohama and Tokyo in the summer of 2008, to examine the discussion.

4-1. Yokohama Workshop 2008

Dates: August 27 and 28, 2008

Place: Yokohama

Host: Information design forum

Lecturers: 10 lecturers including K. Yamazaki

Participants: 14 working designers; 21 students; and 10 staff students

Contents: Theme "Drawing a map of Yokohama"

 * Field work methods

 * Methods of organizing and analyzing information

 * Concepts and drawing methods of Information Graphics

4-2.  Information Graphics Workshop in Shibuya

Date: September 27, 2008

Place: Shibuya

Host: Communication design research group

Lecturers: 5 lecturers including H. Kimura

Participants: 17 working designers and 3 students

Contents: Theme "How to attract people by communicating charm"

Creating an autumn special edition of a pseudo-free newspaper featuring Shibuya for

| | |
|---|---|
| Figure:7 | Figure:8 |

## 5. Results:

5-1.

Yokohama Workshop 2008

1) During the workshops in Yokohama, seven groups analyzed data and generated concepts at the venue after fieldwork, which lasted for half a day.

2) Around eight hours were allowed between card sorting and concept making, which we initially thought would be enough time for executing the processes.

3) Ten lecturers advised in turn, but not much progress was made, and all teams were groping for concepts until late at night.



Figure:9



Figure:10

4) With the closing time of the venue approaching, we had no choice but to perform two sessions of Shuffle Discussion.

5) Concrete concepts started to form and a few teams had good results.


5-2.

Information Graphic Workshop in Shibuya

1) Because the workshop in Shibuya was a one-day event, everything was on a tight timetable. Five groups of four members joined.

10:00 Opening ceremony and greeting

10:30 - 14:00 Field work; Making design roughs for explanation

14:00 - 14:30 Shuffle Discussion (10min. x 2)

14:30 - 15:30 Making designs

15:30 - 16:00 Shuffle Discussion (10min. x 2)

16:00 - 17:00 Making designs – Completion


2)    As planned, we performed 10-minute Shuffle Discussions four times in a period of about 2 hours. We intentionally appointed roles - agreeing roles and objecting roles - in particular.

Figure:11

3) Through the Shuffle Discussions, some groups abandoned previous concepts and made new ones.


**6. Analyzing Shuffle Discussions:**

1) Not all teams were successful in making concepts.

2) Some teams had a breakthrough in making concepts. But we are uncertain if those were because of the Shuffle Discussions.

3) The teams which completely followed other teams' advice rather showed a tendency to fail.


**7. Acting Out:**

7-1. What is Acting Out?

  In the information design field, a several methods of inducing "awareness" have been developed, such as the Shuffle Discussion. Acting Out is one of them too. This relatively new method is in active use by some companies and educational organizations, and has had successful results.

  George Herbert Mead claimed that "Me" is formed by accepting roles which others expect one to play, and that a "social self" is possible in relationships with others. He also said that a language occurs when others react to one's gestures. It is a non-linguistic communication method, and one perceives the reaction.

  Acting Out is the name of a method in which developers reproduce scenes where they use products and services in a skit to perceive the reaction of the audience so that they can become aware of or reflect on something. The origin of the name is uncertain: Some say that it is derived from psychological terms, "Coming Out"/"Acting Out", and it is recorded that Professor Sunaga at Tama Art University taught it in this fashion in 2000. In English language education and such, there's a well-known educational method called "Skit", in which a scene of communication is simulated and students act out the skit.

## 7-2. Types and traits of the Acting Out method

### 1) Reproduction of users



Figure:12

When observing a subject, we draw sketches to more deeply understand the subject. The methods in the table below should be learnt. Sketching takes different methods depending on the subject. Acting Out, in which developers act out and reproduce the contextual situations of users when they handle products and services, is quite an effective method. For instance, the crime scene investigations of the police are a simplified Acting Out process, so to speak, where the facts, which are otherwise unknown through testimonies and drawings, are discovered. Performing the Acting Out method at an actual site of a user is therefore highly effective.

| Subject of understanding | Expression method | Output |
|---|---|---|
| Shape sketches | Drawing | Rendering |
| Time sketches | Storyboard | Images/Animations |
| Concept sketches | Diagram | Presentation materials |
| Situation sketches | Acting Out | Manuals |
| Object sketches | Paper Prototype | Software/Hardware |

Figure 13：Objects and methods of sketching

### 2) Simulations

Acting Out is effective in that it simulates artificial scenes of use of products at a higher process of development. This is easy when a certain prototype is ready. But if the interface is still a simple paper prototype, the "Wizard of Oz" method, in which people in charge of the system and people who act are separated, makes evaluation easier.



Figure:14



Figure:15

## 3) Presentation

  Acting Out is also useful when presenting finished products. Showing the scenes which users will experience makes it easier for the audience to understand the products than by reporting using only prototypes or renderings.

  From our experience, we recommend that you use props that are related to the scenes. These will provide realistic presence and facilitate accurate understanding.

  This method has been proven effective by one research which claims that there's a behavioral pattern when people evaluate something: they try to share the viewpoint with others and observe from a distance in a relaxed posture.


Figure:16

## 4) Behavior of artificial objects

  Although we didn't demonstrate it this time, Acting Out has other usages, such as the "Human-Powered Computing Experiment", conducted by John Maeda and associates at the MIT Media Lab, in which people act out diverse functions of computers. There have been reports that this is effective in obtaining ideas for new mechanisms.

  The method is currently being studied at Tama Art University.


## 7-3. Performing Acting Out

1)    Acting Out was demonstrated during the final presentation at above-mentioned Yokohama Workshop 2008.

2)    It was also performed at an "information design" class at Yokohama Digital Arts College.


## 8. Conclusions:

## 1) Effectiveness of Shuffle Discussion

\* The biggest benefit of Shuffle Discussion was neither explaining research results to other team members nor receiving advice from them.

\* What was most important was to make tentative concepts, in a forceful fashion if necessary, through team efforts, and to share them with other team members before performing the Shuffle Discussions.

\* Having tentative concepts provides a foundation for understanding advice from others - we consider this the largest effect.

## 2) Effectiveness of Acting Out

I organized the viewpoints obtained through different types of acting out methods which we've examined so far.

| Types of acting out | Obtained viewpoints of awareness |
|---|---|
| Behavior of artificial objects Artificial | objects |
| Users' reproduction | Users |
| Simulations & The Wizard of Oz | Users/artificial objects/audience |
| Presentation Audience | |

Figure 17 : Obtained viewpoints depending on the types

   When Acting Out was introduced and became in use for the first time, the "artificial objects' behavioral Acting Out" was mainly used. But the "simulative Acting Out" gradually became in use as the HCD process was introduced. As shown in the table above, the "simulative Acting Out" can achieve many viewpoints, and, therefore, must be more convenient as an evaluation method.

1) Acting Out is often considered as a merry and entertaining presentation method. But it is also a highly effective evaluation method in many different stages of development.

2) The "simulative Acting Out", in particular, is expected to be explored as a hybrid evaluation method between the paper prototyping method and the rapid prototyping method using physical computing.

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