
A Method to Get Rich Feedbacks from Users in an Interview for Design Concept Decision

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Abstract

Although participatory design methods such as co-creation and cultural probes are used in many forms of design practice, user involvement in the design concept decision phase is more difficult and rather rare. The aim of this research is to investigate a method that helps designers get rich feedbacks from users to help in making decisions on design concept directions. We present a method, called 'Fuzzy & Clear', which uses a level of clarity and concreteness when the concept directions are shown to users in group interviews or workshops. We also report on a design project case study to show how the method can be used and how the method impacts user feedback on a design project case study. The results show that the method helped develop diverse viewpoints and make a positive impact on getting more valuable user feedback.

Keywords

User-centered design, Rich user feedback, Design concept embodiment, User interview, Design method

General Terms

Design, Human Factors, Experimentation, Performance

ACM Classification Keywords

H.5.2 User Interfaces (D.2.2, H.1.2, I.3.6): User-centered design

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Introduction

The involvement of user in the design process is considered an important aspect in practical design [2, 3]. Designers often recognize this and get design inspiration from research and other forms of input conducted with user [1, 4]. Participatory design methods such as co-creation and cultural probes are common methods of this type used in the design practice [3]. In case of cultural probe for early user involvement, it focused on finding un-discovered idea. It more considers getting inspiration rather than information from users [5]. And another method contextmapping is also help to gain deeper insight into the needs and dream of new product [6]. However, current user involvement is concentrated in the early stages of the design process and is especially aimed at understanding user needs, or in some cases, late in the design process, aiming to allow some evaluation of a design outcome.

One the other hand, user involvement could also be of great value in the design decision phase. This is usually a mid-phase of the overall design process in which designers narrow down the general directions of their ideas. This phase can be seen as a key milestone in the design process because once a concept direction is decided, much more specific design activity can follow and this activity generally costs represents a substantial portion of the project budget. It is known that decision making of a concept direction at this phase is done by designers' intuition. Very few systematic approaches are suggested [7]. This makes it hard to convince others in the design team about the appropriateness of the decision.

One way to decide on a concept direction in this mid-phase is to get useful feedback on alternatives of the concepts from users. User studies in the form of group interviews or workshops are methods to get the feedbacks from users. The materials used in these kinds of user studies tend to be detailed with 3-dimensional mock-ups, working or semi-working prototypes or visionary scenarios. However, if the concepts are too detailed and '*finished*', it is known that designers can have difficulty in getting useful '*rich*' user responses. Lambourne *et al.* [8] report that user responses are largely simple preference opinion and not necessarily an evaluation in other senses.

The aim of this research is to investigate a method that helps designers get rich user feedback which can support decisions regarding design concept directions. In this paper, we present a method, called '*Fuzzy & Clear*', which incorporates the level of clarity and concreteness when concept directions are shown to users in group interviews or workshops. We also report on a design project case study to show how the method can be used and how the method impacts user feedback on a design project case study.

Rich User Feedback for Deciding Concept Directions

There are many meaningful kinds of user feedback in the design process. When deciding a concept direction, user feedback can be verbal, responding directly to a question or prompt, or non-verbal, such as gestures, facial expressions, and even the tone of voice and pattern when a user makes their opinions. Since non-verbal feedback is hard to capture especially for users in a high context society [9]. In this research, we identify rich user feedback for deciding concept

directions as that which falls into any of the following categories;

- Feedback that helps designers understand user needs
- Feedback that helps prioritize concept directions
- Feedback that helps realize undiscovered issue
- Feedback that helps to get inspiration of related ideas
- Feedback that can be used as evidence for design judgments

Proposed Method: ‘Fuzzy & Clear’

Our method uses ambiguity as a means to trigger user feedback. The method is to gradually adjust the clarity, level of detail and completeness of initial design concepts presented to users in a user interview or participatory workshops. This means that initial design proposals are intentionally abstracted and blurred. Figure 1 shows how a concept can be scaled from an ambiguous level to a concrete level. The presentation media can also be changed (e.g. textual, visual, physical and behavioral)

	Ambiguous		Concrete
Text Verbal	Concept Title Keyword	Metaphor Story	Concept Description
Visual	Metaphor Scenario	Product advertisement image	Product image
Physical Behavior	Soft Mock-up		Working Prototype

figure 1. Fuzzy & Clear method map.

The first step to use this method is to build a diagram as shown in figure 1. The diagram joins various levels of ambiguity and different presentation media to suggest plausible levels of resolution and methods of communication. Textural presentation includes related keywords about concept metaphors, target users and application context, visual presentation could be initial sketches, photos or images related to the initial concepts, physical presentation is done with physical mock-ups, mechanisms or props and lastly behavioral presentation can be simulations through or working prototypes.

Ambiguous concepts are be partial, incomplete or symbolic, while concrete ones are include. For example, a concept title or concept keywords can be intentionally made in a partial or symbolic way and thus rather ambiguous. The method requires that ambiguous alternatives are made for all communication forms. The concrete concept directly explains what the details of the proposal in each form, text, graphic, models and scenarios. This kind of material may be quite similar to typical design presentation materials in the middle phase of the design process.

The second step of the method is to present the various media to the user and gradually adjust the clarity, level of detail and completeness of the presented concept from upper left to lower right cells. Presentation media can be in multiple compositions. For example, designers show abstract physical presentation first and concrete text later alternatively, the designer could change the communication medium from ambiguous text to concrete graphics as a user interview develops.

Case Study

A case study was conducted to examine what impact this method make on user feedback in a design project. We aimed to understand how the different orders of gradual changes of ambiguity and presentation media have different influences on the results of a user study. To make this comparison, we used several different orders and compared to existing methods.

Project description

The design brief of the project related to designing a life care product for family members who are physically separated but want to care for each other every day. Two initial concepts were developed.

We presented a situation where designers invite users to get feedbacks from users so they can narrow down multiple concepts to one. To make clear comparison and analysis, we used text and visual presentation in the case study.

Design concept description

The first concept was called 'Soulmate'. It is a physical voice messenger that reminds family members of each others' state of being and other factors like medical treatment to be taken or request for phone call.



figure 2. Concept map of Soulmate.

A concept map using a method similar to figure 1 was built. The first cell has such keywords as 'Walkie talkie', 'Best friend', 'Honesty pipe', and so on. Some are the keywords indicating functions and others mean value of the product or a concept story. Ambiguous visual images were images indicating the metaphor and ones that imply functions intended. [Figure 2]



figure 3. Concept map of Second Family.

The second concept was named as 'Second family'. It included a health calendar with a daily condition check list for a parent and a mood lamp for a son or daughter who lives alone. Text presentations of the second concept were terms like 'Health calendar', 'Nurse', 'Empty house', 'House wife'. The ambiguous images, such as post-it message card and daily check calendar, were implying functions of the product.

User interviews

A total of 3 group interviews were conducted. Each interview took about 45 minutes. Each group consisted of 2 or 3 potential users who have lived far from their family more than 1 year.

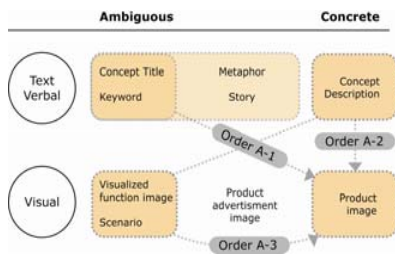


figure 4. Order A: Composition of Ambiguous - Concrete

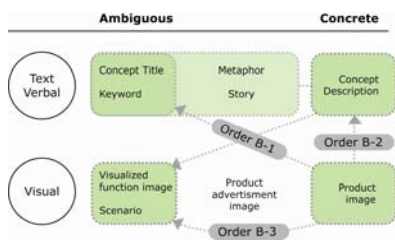


figure 5. Order B: Composition of Concrete - Ambiguous

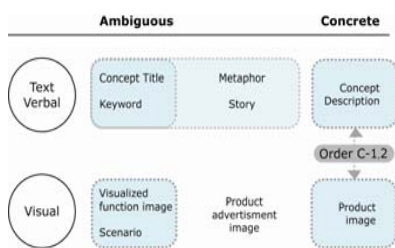


figure 6. Order C: Composition of Only Concrete Description

Participants first understood the context and then the brief. The initial concepts were introduced and interviews were conducted using the method.

Three different orders of presenting the cells of the concept map were used. Order A is a composition of ambiguous to concrete [figure 4]. It has multiple options to ordering with differences of media. Order B is a concrete to ambiguous composition and order C describe only concrete exposing order.

Result and discussion

The results were analyzed from both quantitative and qualitative perspectives. Quantitative analysis involved counting the number of communication efforts made during the interviews while qualitative analysis focused on comparing the content of the interviews. Some feedbacks such as questions and 'I don't know' were not counted for the analysis.

In quantitative analysis, when we show final product image, the average number of communications was 1.2 times increased regardless order. And when we expose both ambiguous and concrete composition, the average of communication was 1.5 times increased than only show concrete description. When we used visual based ambiguous descriptions, the amount of communication was twice that of a text based ambiguous description.

For the qualitative analysis, we compared the content between order C and order A - B, and also comparing differences between order A and B. In order A - B, we found that users think separately about product title, shape, function, and usability, so most of the feedback was to do with integration and gaining more details of concept. Also matching the components to one concept

was important. For example, one user said *'The title and final image is hard to match as one concept.'*, and the other user said *'The shape and function look like connected.'* Sometimes, new usage ideas came up such as, *'When we lay the product out, the collected messages are playing and stand it up, stacking up voice message.'* We found some new ideas for similar contexts. For instance, a product for checking children came home in safe for double income family, or personalized on-line present searching service for parent who is constantly sick.

In differences based on composition order, when we used the order A, it is easier to understand concept since it is step-by-step development, as opposed to showing the product image first. When we show ambiguous image first, users struggle to guess the concept and try to make sense of the images and connect them together. When we used the order B, users were more focused on the function and value. They asked, *'Why this product needed?'*, *'what is the main function of this product?'*

When we solely showed the concrete descriptions, extra explanation was needed, and users often asked many questions such as, *'What is this?'*

This case study showed that the proposed method was effective in obtaining rich feedback during a user interview. It was interpreted that the method helped discover diverse view points, in particular, abstractive sources affect to the quality of user feedback. It offers chances to consider many components from both the designers' and users' perspectives.

In addition, it helps to provide both further ideation and some form of concept validation. The contents feedback became rich in terms of appropriateness of usability, fundamental needs, and detail function rather than simple preference of 'good' or 'bad' on the concepts presented.

The results from this experiment have convinced us that it is possible to obtain different feedback by using different medium of presentation in user interview. We are able to get rich feedback by using various compositions and in different orders when presenting concept explanation tools.

Conclusion

This paper presents a method to help designers get rich user feedback for making decisions during the design concept direction part of a design process. The key aspect of this method is to change the level of ambiguity when presenting the concept in a group interview or workshop. Through this method we obtained rich user feedback by changing the composition of clarity level, order, and multiple media. In addition, this case study showed that the method helped develop diverse viewpoints and make a positive impact on getting more valuable user feedback during interviews. By doing in-depth discussion concerning the concept users get the opportunity to be involved in design process and their influence is widened. With this approach, we expect that both designers corresponding users' needs and getting inspired from users' feedback.

For future work, the framework of the proposed method should be developed further; in particular, more in-depth theoretical reviews of related works and grounding theories should be conducted. A better

understanding of the role of user feedback in the different phases of a design process is also necessary. User interviews in the case study project were planned only using text and visual presentation materials. It would be interesting to investigate how the combinations of ambiguous and concrete forms of physical and behavioral presentations also change the perspective of user feedback.

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