

Cultural Difference and Its Effects on User Research Methodologies

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Abstract. Various researches have proved that cultural differences affect the process and results of user research, emphasizing that should cultural attention be given in order to obtain sufficient results. After performing three experiment methods: probe, usability test, and focus group interview in the Netherlands and Korea, we discovered that productivity and effectiveness was poorer in Korea. The differences were found due to the contrary between cultures, strongly indicated by Hofstede's cultural dimension Individualism vs. Collectivism. In addition, we have proved that the different factors made an impact on user research process and result. Based on the analysis, we compiled guidelines for each of the method when performing in Korea.

Keywords: Cultural difference, User research methodology, User participatory study, User research guidelines.

1 Introduction

As market competition globalizes, understanding users of various cultures during the design process has become important for securing a corporation's competitive power. However, most user research methods currently in use have been developed for people living in the US and Europe. It makes us wonder if those methods can achieve the expected sufficient results when applied to people living in other cultures.

Recently, various researches have proved that cultural differences affect the process and results of user research, emphasizing that should attention be given to users' various cultural backgrounds in order to obtain sufficient results (Hall, 2004). Yet there lacks of insightful studies concerning the relationship between culture and user research methods. This paper aims to reveal the effects that cultural differences have on user research and suggests guidelines as how cultural difference can be considered to conduct effective user research and gain useful results.

2 Study of Background Theory – Cultural Difference

2.1 Cultural Variables

Edward Hall's context theories say that information during a communication or information in a message is part of context (Hall, 1989). In high context culture, most

information is included in the context, thus it is less externally expressed. However, communication is direct, clear, and expressed externally in low context culture. Concerning Hall's context communication, Hofstede revealed that high context communication occurs in collectivistic culture and low context communication occurs in individualistic culture, according to his cultural difference's dimension of individualism vs. collectivism (Hofstede, 2001).

2.2 Culture and Politeness Theory

Based on Politeness Theory,¹ Ting-Toomey developed Facework Framework, explaining the difference in communication pattern in individualistic-low context culture (LCC) in which one desires not to be disrupted, intruded, and forced by others., and collectivistic-high context culture (HCC) in which one desires to be liked and approved by other people and concern about others' reaction.

3 Relationship Between Cultural Difference and User Research Methods

3.1 Classification of User Research Methods Regarding Communication Pattern

It can be said that user research methods collect knowledge in different levels according to the characteristic of the communication. This knowledge about user experience can be distinguished by possibility of observation and explicitness. Sanders (1999) explained that in order to effectively observe knowledge at different levels, different methods must be applied according to the characteristics of that knowledge level, as shown in figure 1.

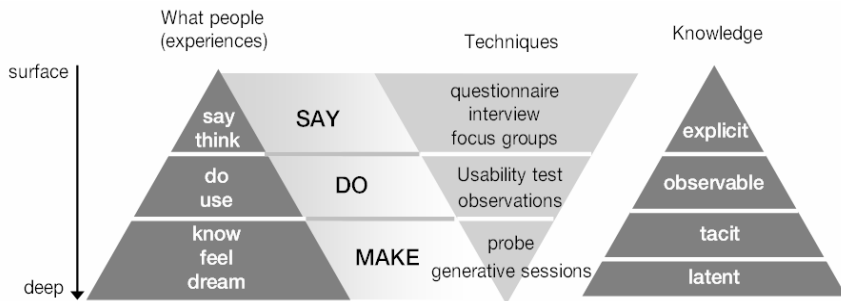


Fig. 1. Cognitive level of user experience and corresponding methods of user research with different communication patterns

3.2 Extraction of Influential Factors

The characteristics in different cultures were integrated and mapped to communication patterns of user research. Group activity was also mapped together to

¹ Politeness Theory explains that social intimacy, politeness, or implicative expression is emphasized when a speaker demands a listener in general (Brown et al, 1987).

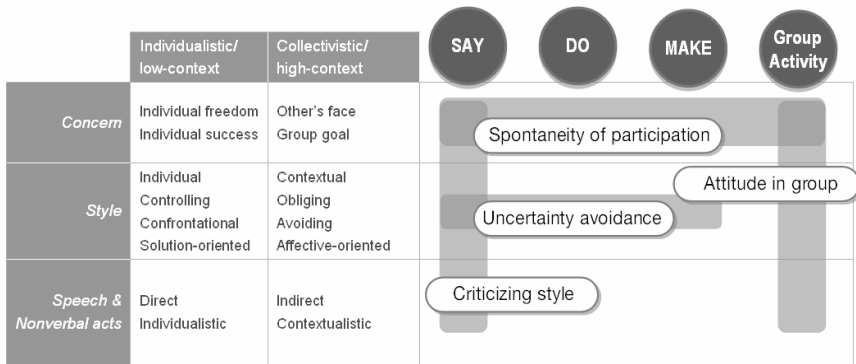


Fig. 2. Integration of cultural difference and extraction of influential factors

take into account some cases where the group constituent was one of the targets of face-keeping.

4 Results and Analysis

4.1 Experiment Design

Participant Selection. According to Hofstede’s cultural dimensions (Hofstede, 1991), the Netherlands (individualism figure of 80) was selected to represent individualistic-LCC, and Korea (individualism figure of 18) to represent collectivistic-HCC. Six engineering major university students from each country, who are in their 20s were selected, male:female ratio was 3:3, and none of the participants had previous experience with any of the tests.

Experiment Methods. In this research, probe, usability test, and focus group interview were conducted to observe the effects from four factors mentioned in ‘Extraction of Influential Factors’. ‘Design of next generation’s portable media device’ was selected as the topic of the experiment, considering the diverse perceptions in each country.

Probe - to observe how participants act to ambiguous and open-ended tasks during workbook writing and photographing, we provided very expandable and self-interpretable tasks that can highly reflect an individual’s own experience. Participants are encouraged to escape from formality of writing so they can make use of the free-form (with aid from photograph, drawing, stickers, etc.).

Usability test - to observe participants’ eagerness to find problems as well as verbal protocol and attitude during the usability test, participant was allowed to talk about the product’s problems (Iriver U10 and Sony PSP) after using them for seven various given tasks.

Focus group interview - find out how comfortable a participant when sharing his own experiences and thoughts in a group. In addition, it was used to observe how easily a participant can be affected by the opinion of the majority and interaction among group members.

4.2 Results

User research was performed firstly in the Netherlands at Delft University of Technology and then in Korea at Korea Advanced Institute of Science and Technology.

Probe. Participant's feedback during probe period - the procedural aspect, and sufficiency of workbook writing and photography - the result aspect, was analyzed.

Participant feedback. Even though both groups felt the ambiguity of terms on the workbook, they attempted to interpret those ambiguous terms own their own to complete the task without any help. Dutch participants wrote in the workbook almost every day, but Korean participants later revealed that they had trouble writing in the workbook every day, so sometimes they wrote several days of work all at once.

Sufficiency. Workbook contents and photographs were analyzed and compared to find out how sufficient each group expressed their experiences and how diligent they were in taking photographs. Dutch participants' sufficiency was found higher than Korean participants'. Not only Korean participants gave only short answers to workbook questions, but were also poorer in exploring the freeform expression.

Usability Test. Protocol analysis was performed on interview and behavior of participants to compare tendency to criticize a problem and attitude towards participation.

Eagerness of Usability Test. Figure 4 shows that Dutch participants criticized the products more actively, seeing a product's both weaknesses and strengths.

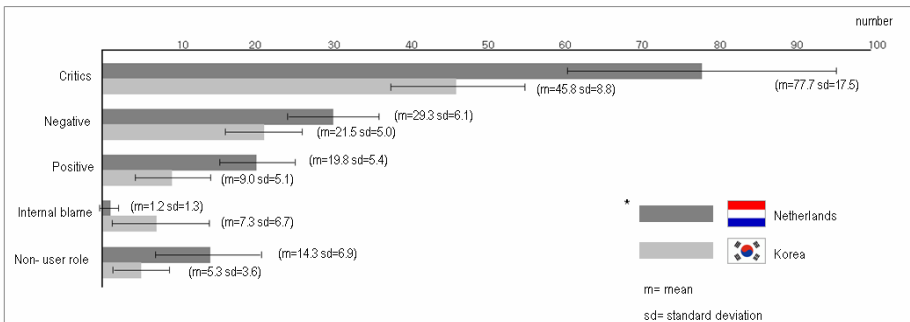


Fig. 3. Comparing performance during Usability test between two groups

Tendency towards Self-Criticism. Dutch participants believed that most problems that occurred during the tests were product faults. Relatively speaking, Korean participants blamed their mistakes for the problems occurred. However, it varied greatly from individual to individual (Mean =7.3, SD = 6.7), discrediting the conclusion that Korean group have more tendency towards self-criticism. Presumably, the participants were well-educated engineering students thus they were comfortable with the whole test situation and handling digital products.

Level of Anxiety during Usability Test. In general the level of anxiety did not differ much between two groups of participants.

Diligence of User Role. Korean participants maintained user role better than Dutch participants. Dutch participants explored product functions outside given tasks and sometimes criticized the tasks. Miranda Hall’s research has shown that Dutch participants had a wider range of observation and also discovered a wider range of problems, not to mention their frequent escape from the user role.

Focus Group Interview. Protocol analysis was done according to the timeline to gather for all participants’ frequency of presenting an opinion, interaction style, and to observe the role required by the moderator.

Active Participation and Even Distribution of Voice. Figure 5 conveys that Dutch participants engaged more actively in the discussion, continuous expression of thoughts and ideas without much help from the moderator. The Korean timeline [Fig.6] shows that there are temporal spaces between opinions and seems like responses were given only when the moderator asked a questioned or pointed out someone to speak. Since Dutch participants were more active when suggesting opinions, they were also more likely to escape from their user role in comparison to Korean participants. Korean participants were found to speak more frequently as time elapsed and that they need a refreshing time to increase the rate of participation.

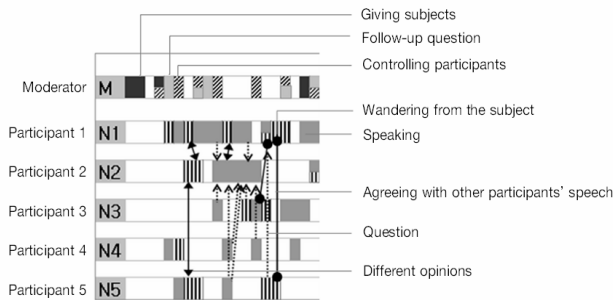


Fig. 4. Description of timeline diagram

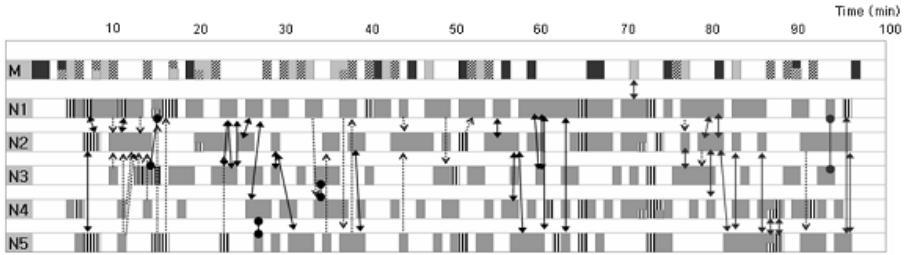


Fig. 5. Analysis of Dutch participants' focus group interview timeline

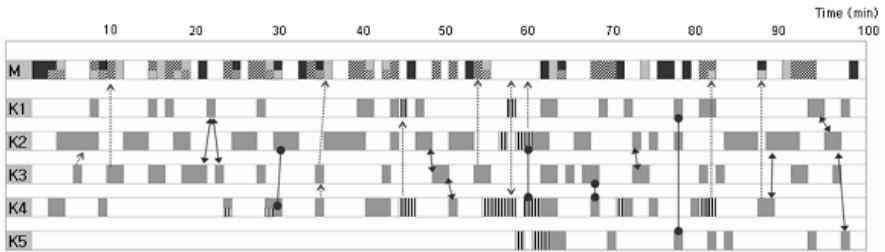


Fig. 6. Analysis of Korean participants' focus group interview timeline

Role of the Moderator. In Korean group, moderator needed to specifically assign on participants constantly and ask more detailed questions to carry on the discussion. On the other hand, Dutch moderator did not have to do much since participants actively engaged in discussion as soon as the discussion topic was suggested. But some participants tended to become verbiage or circulated the same topic for too long, requiring the moderator to control such behavior.

Interaction among Participants. Voluntary interaction amongst group members was more obvious in the Dutch group, when someone finished, opposing opinion and corresponding questions were actively generated. On the other hand, Korean participants were apt to ask the questions to the moderator. Assumingly the high uncertainty avoidance causes such behavior; constituents are less likely to engage in free discussion but are more likely to seek for confirmation from the moderator. There was no significant conformity of opinion in either group.

4.3 Discussion

After performing three experiment methods in the Netherlands and in Korea, we discovered that productivity and effectiveness was poorer in Korea. The differences lay in spontaneous participation, uncertainty avoidance, style of problem criticism, and attitude were found due to the contrary between Individualism-LCC and Collectivism-HCC. In addition, we have proved that these factors made an impact on

user research process and result. Based on the result, we have compiled guidelines for each of the method when performing user research in Korea.

Probe. Constant communication between a participant and a researcher is crucial during the probe period to boost participant's motivation and stimulate of responsibility. The communication between a researcher and a participant must be playful and informal. To alleviate any burden from the participant and induce fun, some playful tasks and factors must be added to the probe tool. Besides, the design must be well designed and some "cute" and "friendly" factors should be augmented so that participants can feel more comfortable and friendly.

In order to increase motivation, should task planning be more considerate of a specific cultural zone by finding out local activities in trend or spread of technology.

Usability Test. To increase the efficiency, some type of orientation or sensitizing process must be provided to teach participants to have a critical mind. Attempt to switch to less direct method to find problems rather than face-to-face interview.

Focus Group Interview. Game factors such as warming-up sessions before the interview and a game to increase friendliness among participants are needed. Provide devices that will make the participants feel obligated to speak (ex. microphone) or come up with factors that will promote detailed explanation of one's opinion.

5 Conclusion and Future Research

This paper has analyzed how cultural difference affects the user research process and result and suggested guidelines how user research in Korea should consider cultural effects.

Nonetheless, the limitation of this qualitative research lies in that the sample was extremely small. Besides, the participants do not sample the general population since they were student in their 20s from highly educated engineering schools. Therefore, this paper can become the foundation of future research, which will aim to include a wide range of age groups and numerous participants. If this research continues on, valid data of various cultures will become available. Moreover, the guidelines of considering cultural effect in user research suggested by this paper will have to prove its usefulness by cases of real life applications.

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