Facilitating the Communication between Malaysian Grandparents and Grandchildren Living Abroad through Computer-Mediated Communication

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ABSTRACT

The main focus of this research is to design a Computer-Mediated Communication system that is easily used by grandparents (GP) and grandchildren (GC) separated by physical distance. An effective and usable design solution requires an understanding of its users and context, and therefore this project also aims to understand the nature of the communication failures and successes in GP-GC relationship and how physical distance and technology change this relationship, especially in Eastern (more specifically Malaysian) culture, which has not been studied extensively in published GP-GC communication literature.

Categories and Subject Descriptors

H.5.3 [Information Interfaces and Presentation]: Group and Organization Interfaces – *synchronous interaction, evaluation*.

General Terms

Design, Human Factors.

Keywords

Usability evaluation, human computer interaction, synchronous communication, older person.

1. INTRODUCTION

Everybody, including older persons, naturally would like to see their family members regularly. Chen reported that 17% of older persons felt that they would like to see more of their families [1]. However when they are separated by distance, the cost of communication can be high, which could be unaffordable for some older persons on small pension. Perhaps one way to overcome this problem is through computer-mediated communication (CMC) systems such as video conferencing or instant messaging, which incur lower costs than

traditional long-distance phone calls.

2. PROBLEMS

Based on the interviews with nine Malaysian grandchildren aged between 6-12 years old living in the UK, the researcher discovered that these children usually use telephone as a way of communicating with their grandparents in Malaysia, even though they are very familiar and comfortable with CMC technology such as Instant Messaging. There are two reasons why Malaysian grandparents do not want to use CMC. Firstly, they hesitate to change their communication method (changing this behaviour is beyond the scope of this paper). Secondly, the software available may not be fit for use for older persons. If the second reason is the main barrier of adoption of alternative way of communicating with grandchildren living abroad, then HCI can contribute in mediating this problem.

At present, most Malaysian older adults do not use the Internet extensively. The majority of Internet subscribers are students and working professionals. A statistic from Malaysian Communications and Multimedia Commission (MCMC) in 2006 showed that there was no older person subscribed to the Internet service [5]. One of the reasons is perhaps the fact that many Malaysian older people live with extended families [6] who are the subscribers of the Internet services. This is evident when this statistic is linked to the data that suggests that the majority of older people live in a house with computer and Internet connection [7]. So even though many grandparents do not have Internet services or claimed to be novice users, it is feasible for them to use CMC with the help of other family members. Therefore, the research focused on the investigation on how to design and evaluate a usable CMC.

3. MAIN CONTRIBUTION TO HCI

There are various ways of ensuring that older persons can utilize the Internet. One possible solution is through applying guidelines that would make the user interface more ageing-friendly. Many such guidelines on other interactive systems are available for public use, such as those for digital TV [2], web page [3] and electronic bulletin board [4]. However, very few published guidelines are available for CMC. Therefore, the first contribution of this project is a set of guidelines that can be readily used by designers and evaluators of CMC for older persons to make their user interface more ageing-friendly.

The second contribution of this project relates to the understanding of the nature of GP-GC communication in

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Eastern culture when separated by physical distance and how distance and technology change the nature of this communication. This knowledge can inform the design of CMC in general and systems for intergenerational communication in particular (or even more specifically, design of CMC for users from Eastern culture).

Finally, the project also contributes in the form of the ageing-friendly CMC system itself, that has been evaluated in controlled experiments (as to measure error rate and capture usability problems) as well as in context.

4. PROPOSED SOLUTION

There are three objectives of this study. First is to understand the nature of the relationship between grandparents and grandchildren. Second is to identify the effectiveness of CMC technology to mediate long-distance relationship. Lastly is to design and evaluate better CMC technology to support long distance communication between grandchildren and grandparent, especially those from the Eastern culture.

5. METHODOLOGY

This study will engage children aged between 6 to 12 years old and have had an experience using Instant Messenger to communicate with their grandparents prior to this study. All respondents will be interviewed about their Internet usage and the nature of communication with their grandparent. They will also be observed on how they are handling the CMC application using their computer.

The same process will be performed with respective grandparents. In addition, the grandparents are required to accomplish some specific tasks during their experience in using three CMC applications: Yahoo Messenger (YM), Windows Live Messenger (WLM) and Skype. These applications were chosen based upon the best three choices put forward by the grandchildren in an online survey [8]. The grandparents will be asked to perform tasks such as registering, installing, logging-in, adding contact, text chatting, sending file, using webcam and using emoticons to observe the nature of communication.

This study also aims at investigating the interaction between grandparents and social helpers, which in this case would be other family members. After the interview sessions, there will be training sessions over four days on using three CMC systems (YM, WLM and Skype) with the help of other family members. During these training sessions, the interaction between the GP and the family members who will be the assistant will be video recorded for later analysis to see the role of social helpers for older persons, in general.

On day 5, the grandparents will be asked to perform tasks such as registering, installing, logging-in, adding contact, text chatting, sending file, and using webcam to communicate with their grandchildren. The problems and likes/dislikes revealed during these sessions will inform the initial design of the CMC system, which will then be evaluated in controlled experiments and in-context with GP and GC at a later stage.

The interaction between them will be recorded and computer screen activities will be captured, too. These grandparents will be visited twice a week for six times and each visit will last no longer than two hours to minimize fatigue.

6. CURRENT STATUS

Currently, I have already completed interviewing nine Malaysian grandchildren living in the UK aged between 6-12 years. All of them are computer literate and their grandparents in Malaysia have easy access to computer. Prior to the interview, the grandchildren had experienced communicating with their grandparents through computer. The objective of the interview is to know and compare their relationship with grandparents before and after coming to England, and also to gauge their experience while communicating with their grandparent through computer. The majority of them preferred Yahoo Messenger (YM) (with Windows Live Messenger (WLM) and Skype in the second and third places) and the researcher identified seven active areas that the grandchild usually access when communicating through YM: webcam, photo, text chat, audibles, IMVironment, emoticons and image or avatar.

The researcher will be going back to Malaysia to interview the grandparents in Malaysia in June 2007.

7. FUTURE WORKS

The researcher will analyze the interview, the video recordings, the saved text chats and the evaluation of three CMC systems and then start the design of ageing-friendly CMC system that can facilitate GP-GC communication.

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