

# Designing Children Preferences and Interest of a Social Networking Site

Nur Azila Azahari, Tengku Siti Meriam Tengku Wook, and Zurina Muda

**Abstract**— This paper discuss about the role of children in promoting innovation and advancement of technology. By using a suitable approach, children can be encourage in communicating and collaborating with adult to generate innovative idea, identify their preferences and even recognize their potential and interest. A study has been conducted and a methodology used is User Centered Design (UCD). This methodology will enable us to identify preferences and needs of children. 30 children have participate in the study and a preliminary analysis is conducted and presented here. Finding shows some statistical result, design and ideas from the children. These findings could contribute interesting taught, approach and open new possibilities in making the new social network useful. Hence, their preferences and interest is the focus of this study and will be highly considered in designing a new interface of social network site especially for Malaysian kids.

**Index Terms**—User-centered design, Miscellaneous

## 1 INTRODUCTION

The existence of social networks for children is one of the best approaches in increasing the level of social interaction among children [7,8,9]. One example of social network that is famous among children is Scuttlepad. The international usage for Scuttlepad is more than 65% (webstatsdomain.com). It shows that the children have been exposed widely and rapidly to the social networking activity. In Malaysia, children are also begin to get more exposure to the social networking facilities such as Facebook and Twitter.

However, these facilities are mean for people with age more than 13 years old and are not too suitable for the children. Thus, one of the best approaches is by developing a social networking site that are suitable for children. This the subject matter that we going to discuss throughout this paper. The children social networking site should not just for them to get new friends but also could improve their attitude and enhance their level of thinking. Malaysian children within the age of nine to 15 years old will be the focus user of this new social networking site. The objectives of this study are:

- To identify the preferences and needs of children in Malaysia on a social network.
- To design social network prototype based on the preferences and needs given by the children.

Section 2 in this paper provides a literature review on the children's role in technology and a brief of the role of an adaptive technique. Section 3 discuss about the method used in this study and the implementation of that method. Section 4 describes the findings from the method's implementation, with some chart and figure that can be refer. The last section is the summary of this paper and the future work.

## 2 LITERATURE REVIEW

There are so many social networks which have been developed and used by Malaysians. However, children also using this social network sites [7,8,9,10,11,12,13]. The young users pretends to be older when signing up [13]. According to [10], in Malaysia, about 250000 children were registered in Facebook. They also spent about 64 hours average every months to get accessed into the social network site[11]. This could be risk for them because it could lead to problems such as cyberbullies, online predators, invasion of privacy, and identity theft [9]. Thus, one of the initiatives of the researcher is to develop a new social networking site for children in Malaysia. Children used social network sites as a medium to communicate with friends and family, sharing video and pictures and other social interaction with society [9].

According to [6], interactive products for children are typically designed and built by adults who often have very little idea about what children want and need from them. Thus, the study must find out the children's preferences and interests in the social network by involving them in the preliminary study before we start develop a new one.

Involving children in product development is beneficial [6] especially when the users are the children themselves. According to [1] the concept of user should be defined to include everybody whose work is affected by the product in some way, including the users of the system's end product or output even if they never saw a

- Nur Azila Azahari is with the Pusat Teknologi Komunikasi dan Pembangunan Insan, Universiti Malaysia Perlis, Malaysia, Jejawi. 02600. E-mail: n.azilaazahari@yahoo.com
- Tengku Siti Meriam Tengku Wook is with the Faculty of Information Science and Technology, Universiti Kebangsaan Malaysia, Malaysia, Bangi 43600. E-mail: tsm@ftsm.ukm.my
- Zurina Muda is with the Faculty of Information Science and Technology, Universiti Kebangsaan Malaysia, Malaysia, Bangi 43600. E-mail: zurina@ftsm.ukm.my

single screen. If the social network is developed for the adults, hence the users are the adults. The same goes if the social network is developed for a child, then, the user is the child himself.

According to [3], there are many roles children can play in the design of a new technology. Children can be trusted as one of the best design partners if the designs are developed for them. [3] also said, by encouraging idea generation in smaller steps, and establishing parameters for collaboration with others, these young children would be less frustrated and more productive in the brainstorming process. The adults can take action by giving them motivation to get some preliminary data and requirements from the children.

Children are young, so the approaches used in getting the requirements are not as same as the approaches used for adults. By learning about the users' work experience, educational level, age, previous computer experience, and so on, it is possible to anticipate their learning difficulties to some extent and set appropriate limits for the complexity of the user interface [1]. Since most children at this age are not yet able to fully express their ideas clearly in writing, drawing gives them a way to do so [3].

The researcher has to find out the best approach to obtain the requirements. The aspect which surfaces most frequently is the children's eagerness on drawing. Allowing an adult to annotate their drawings enables more complete expression of their ideas [3]. Children can express their ideas and imagination by drawing on a paper and so on. Based on [3], children can also lead to unexpected technological innovations. According to [4], children prefer simple interface design with bigger fonts and buttons. They also enjoy the attractive combination of colours. There must be some solution that can help to create a creative interface design for the children's social networking.

According to [5], user-adaptive techniques allow the user-system interaction to be adapted to different usage situations. [5] said that the use of multimedia elements such as text, graphic, animation, audio, and video interactively in multimedia courseware development are able to insert multi-sensory concept in one-medium communication. According to [2] the purpose of adaptations is to improve the user-system interaction, for example by supporting expert users with repetitive tasks or introducing novice users to the interactive system. Adaptation of interactive systems describes changes to the interface that are performed to improve the usability or user satisfaction [2]. The most important criterion in designing an interface is an interface that allows the user to surf the content and enjoying it while using the system.

### 3 SECTIONS

The methodology used in this study is the use of User Centered Design (UCD). The method used are two techniques, namely questionnaire and drawing. The questionnaire was conducted first and was followed by drawing. This study uses questionnaires and drawing as part of the UCD.

This study involves children aged nine to fifteen years old. All of them must have the experience in using the social networks. The purpose of this method is to get the preliminary requirements from the children. It involves two phases. The phases are, firstly to identify the children's requirements and then to generate design ideas. They were had been briefed on the research objectives and about their roles as the users and design partners.

#### 3.1 Grouping the user

This questionnaire was conducted in a class which included children aged between nine to fifteen years old. In the context of the Malaysian people, children aged between nine to twelve years old are classified as primary school students. Children aged thirteen to fifteen years old are classified as lower secondary school students. These children are from different levels of schooling. Thus, we distributed the children into two types of group. The first group was made up of 15 children aged between nine to twelve years old from Sekolah Kebangsaan Bandar Baru Sintok, Kedah. The second group consisted of 15 children aged between thirteen to fifteen from Sekolah Menengah Kebangsaan Bandar Baru Sintok, Kedah. In a class of 15 children, the questionnaires were distributed to them. A briefing about the objectives of this study was done before the session started.

#### 3.2 Identify Kid's Preferences by Questionnaire

The first phase was to recognize and identify children's interest in social networking. The children were given a set of questionnaire. This questionnaire categorized into three sections with a specific focus. The first section focuses on the knowledge and experience in using social networking. The second section focuses on the preferences and interests of the social network. The last section focuses on the design of the social network site.

Most of the questions are the closed-ended questions that just need the children to answer that question by tick on the list of the answers given. Besides, some of that are add on with the open-ended question. It is because if those kids choose the answer is 'Others', they must give the direct answer for that question.

For example, such as question about 'which social networking that they already used', the list answer for that question are Facebook, Peace Hotel, Myspace, Twitter, Habbo, Habboon, Imbee, Togetherville, Everloop, Scuttlepad and Others. So, if they choose to tick the answer on 'Others', they must fill in the blank given with the suitable answer. The reason why those kids must fill in the blank when they choose the 'Others' as the answer, because we need to know other social networking that they have used.

There are also open-ended question that need the kids to answer by fill in the blank given. This is because the researchers want to know the elaboration idea from kids themselves about their opinion and knowledge on social networking site.

### Focus on knowledge and experience

This type of question focuses on getting the children’s knowledge and experience in using the social networks. Some of the questions are; which social networking that they already used and how long do they use the social networking site in a single day.

### Focus on preferences and interest

This type of question asks about the children’s preferences and interests in the current social networking sites. They were also asked about the future social networks based on their preferences and interests. Some of the questions are; the reason why they used the social networking site and their opinion about the interface of social networking site used.

### Focus on the design

This type of question includes some questions that required a little bit of exchanging ideas between the participants. At this stage, the children were allowed to discuss among themselves. The questions included asking about the design which they think was suitable as the social networking site. It also included questions about improvements that could be included in the future social networking site.

### 3.3 Generating Design Idea Using Drawing.

The drawing session was conducted with 30 children to generate design ideas and creativity on the preferences identified on the social networking interface. This technique involves the design activities of the last question in the questionnaire. After being asked a few questions about their knowledge and experience on the social networking site, the children now had more ideas on the discussion.

The last part of the questionnaire asked the children to be innovative and creative enough to draw their ideas of a new interface for a social networking site on a piece of blank A4-size paper given. They were encouraged to be more creative and imaginative by allowing them to use pen, pencil or color pencil. It was interesting to see how they let their imagination flow by drawing their ideas on the paper given. They are also could discuss and collaborate with their friends to generate the wonderful ideas.

Before the children answered the question, they had been briefed about the design that they would be sketching. The children had already been explained on which design they had to sketch to get the exact feedback from them.

## 4 FINDINGS

### 4.1 Finding from the Questionnaire

#### Analysis of the question on knowledge and experience

From the preliminary analysis, it seems that children are not familiar with the word social networking. However, all of them are very familiar with Facebook. From the preliminary analysis, Figure 1 shows that 100% of the children have the experience of using Facebook, and other social networking sites such as Twitter and MySpace, with the average of 40 %. This shows that children are familiar with the use of social networking sites but they are not familiar with the word ‘social networking site’ itself. This also shows that they may not follow the rules in registering to these site because the Facebook are mean to people with age more than 13 years old.

Another question asked about the frequency of social networking site used daily. The analysis shows that out of 30 children, 13 children would use it once a day, followed by seven children who would use it twice a day, five children would use it three times a day and two children would use it four times a day. Only one child said that he would use the social network for more than 10 times per day. These preliminary results also found that children who regularly use social networking sites would use them to connect and communicate despite for other purposes. The results shows that a total of 27 children which is equivalent to 90% of all children agree to this statement and the remaining three children who are disagree contribute of 10% of the all children involved in the study.

#### Analysis of questions on preferences and interests

The analysis found that the highest reason why the children use the social networking sites is because of the chatting application. From 30 children, 23 would use the social networking sites because they liked the chatting application. The second highest reason is because they would use the social networking sites as a medium of communication with their friends and they were able to develop new relationship with other people. Figure 2 shows the result of this type of questions.

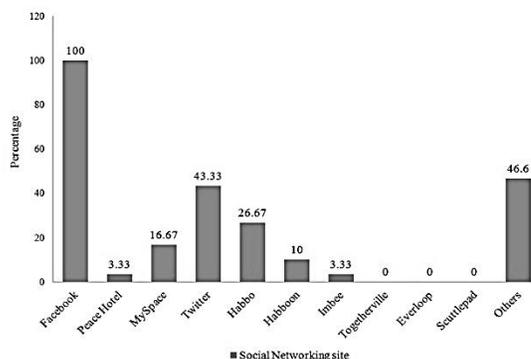


Fig. 1. The usage percentage of average social networking site

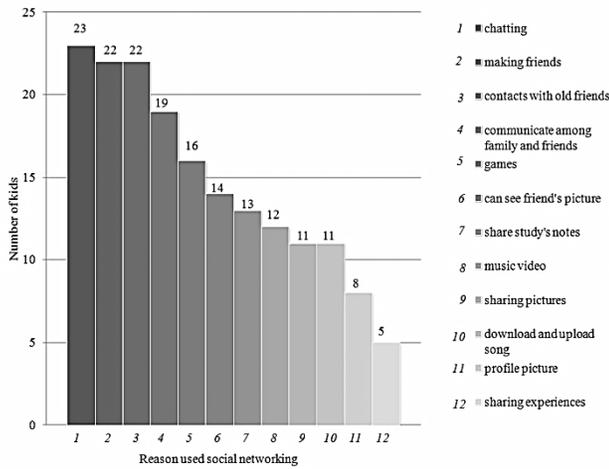


Fig. 2. Children's reason chart of used the social networking

In the general analysis of this part, children are encouraged to gave their opinion in both negative and positive aspects of the design of the current social networking sites. Some positive opinions are that the current social networking sites already have suitable text size, the layout is organized in a proper way, and the instruction was easy to read and understand. The children seemed to be interested in the chatting application a lot because they are many positive opinions about that. The warning sound which is used to alert on incoming messages made them feel excited and comfortable. There were also some negative opinions. The negative opinions listed were related to the number of advertisements that included pictures and the media consisting of pornographic materials. These children gave their opinion based on their knowledge about current social networks that they have used.

**Analysis from the question on the design.**

This question asks the children to tick and choose interfaces that had been shown that they preferred. They were given four choices of interfaces. The first choice of the interfaces as shown in Figure 3(a) was an interface that allows users to choose their own badge on a picture, status or activity. The example of the badges given had the rate from 'the best of the year' to 'the worse of the year'. The second choice was the interface that allows users to share a simple picture for their homework. The interface as shown in Figure 3(b) given some sort of pictures with no colours. A user may choose to colour the picture. This interface was designed for the children aged nine to twelve years old in completing their homework. The third interface as shown in Figure 3(c) focused on children aged 13 to 15 years old. The interface allows users to upload some mathematical formula in completing their homework. The last interface is shown in Figure 3(d) was an interface that allows a written status to be on the site can be filtered automatically for inappropriate words used. For example, obscene words or words not suitable for children of this age will be deleted from the status.

From the analysis, it shows that the first interface has scored the highest rate among the four choices given. It shows that the children are more interested in the interface that has fun and interactive layout rather than the one that is beneficial for their academic or their attitude per se.



Fig. 3(a). The first interface to be choose. (from Scuttlepad.com)

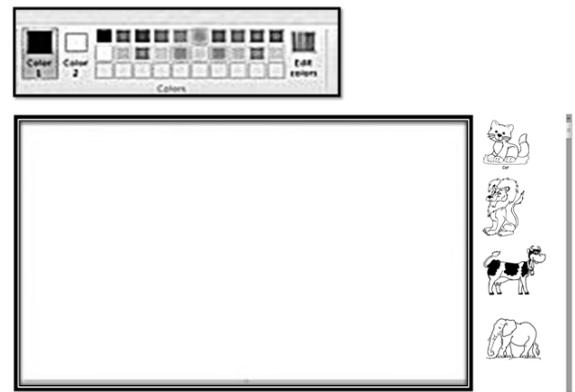


Fig. 3 (b). The second interface to be choose

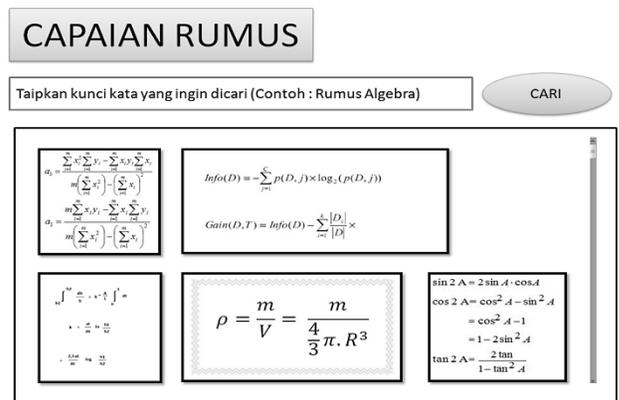
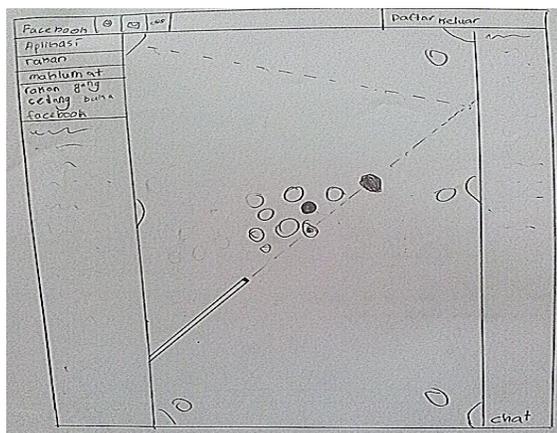


Fig. 3(c). The third interface to be choose





**Fig. 4(e).** Games is one most important application that must be present in a social networking site for children.

Results from the drawing session showed that children have very distinct ideas for the interface of social networking site. From the sketching in Figure 4(a)-(e) shown that children were keen on having a chatting application, cursor, emoticons, colour selection, wallpaper, avatars and games on their page.

## 5 CONCLUSION AND FUTURE WORK

As a conclusion, children can be promote to be our technology design partner. Children have the ability to generate ideas by using their imagination and creativity attentively. From their imagination and thinking skills, we are able to gather more useful data and distinct information.

For the social networking site, it was found out that Malaysian children are interested in a new dimension and different expectation of their lives. They wanted an adaptive interface which would allow them to create their preferences. They were very interested in having their own avatar, and background colour and wallpaper. These children were very interested in having a social network page that could be manipulated by using existing features on their own pages. For that, we will take these considerations in order to design and develop a social network site that is preferable by them, without neglecting the aspect of nurturing them to be a better human in the future.

Based on results and finding, we shall also said that children in Malaysia have the abilities to give their cooperation and opinion about their preferences and interest which enable us to achieve the objective of this study.

Finally, this study will use an adaptive technique in developing the children's social networking prototype. Adaptive techniques which concern on the icon, background, avatar and chatting application will guide the children to learn more about the usability of social networking. The adaptive techniques to be apply in the children's social networking will be as the guidance to the user on how to use the system are the future work that we will concern.

## ACKNOWLEDGMENT

This work was partially supported by fundamental research grant scheme sponsored by UKM under the grant no. UKM\_TT\_07\_FRGS\_2010. Nur Azila Azahari thanks to Kementerian Pengajian Tinggi (KPT) and Universiti Malaysia Perlis (UniMAP) as the sponsor for her study. The authors are indebted to the children of Sekolah Kebangsaan Bandar Baru Sintok and Sekolah Menengah Kebangsaan Bandar Baru Sintok for inspiring this work.

## REFERENCES

- [1] J. Nielsen, *Usability Engineering*. Academic Press. Elsevier. 1993.
- [2] M. Bezold, and W. Minker, *Adaptive Multimodal Interactive System*. Springer. 2011.
- [3] L.M. Guha, A. Druin, G. Chipman, J.A. Fails, S. Simms, and A. Farber, "Working with young children as technology design partners", *Communication of the ACM*, vol. 48. No.1, pp 39-42, January 2005.
- [4] Tengku Siti Meriam Tengku Wook and Siti Salwa Salim, "A conceptual design for children's webOPAC interface : graphic design issues", pp 785-791, 2007.
- [5] Zurina Muda and Ros Emiliana Kartina Mohamad, "Adaptive user interface design in multimedia courseware", *IEEE*, pp. 196-199, 2006.,in press.
- [6] S.R. Kelly, E. Mazzone, M. Horton, and J.C. Read, "Bluebells: A design method for child-centered product development", October 2006.
- [7] D.Boyd, "Why youth (heart) social network sites: the role of networked publics in teenage social life", MIT Press, pp 119-142. 2009.
- [8] S.Livingstone, L.Haddon, A.Gorzig, and K.Olafson, "EU Kids Online Report", 2011.
- [9] McAfee, "A parent's guide to social networking sites", Santa Clara, 2009.
- [10] Hariati Azizan, "250000 kanak-kanak Malaysia guna Facebook walaupun di bawah had umur", *mStar Online*, [http://mstar.com.my/berita/cerita.asp?file=/2012/7/1/mstar\\_berita/20120701124655&sec=mstar\\_berita](http://mstar.com.my/berita/cerita.asp?file=/2012/7/1/mstar_berita/20120701124655&sec=mstar_berita) (Accessed 9 Oktober 2012).
- [11] T.N. Ke and S.F. Wong, "My online friends understand me better-the impact of social networking site usage on adolescent social ties and mental health", *Slides*.
- [12] Mohd Dahlan A.Malek and Ida Shafinaz Mohamed Kamil, "Jenayah dan masalah sosial di kalangan remaja: cabaran dan realiti dunia siber", *Program Jenayah Siber dan Isu Pemerdagangan Manusia di Malaysia*.
- [13] D.Gross, "Social network and kids: how young is too young?," *CNN*, <http://edition.cnn.com/2009/TECH/11/02/kids.social.networks/> (Accessed 3 Februari 2011).



**NUR AZILA AZAHARI** received the B.Sc Information Technology from Universiti Utara Malaysia in 2010. She is current as a M.Sc student in Faculty of Information Science & Technology, Universiti Kebangsaan Malaysia. Email : n.azilaazahari@yahoo.com



**DR TENGKU SITI MERIAM TENGKU WOOK** received the B.Sc of Information Technology from Universiti Kebangsaan Malaysia in 1998, M.Sc of Information Technology from Universiti Kebangsaan Malaysia in 1999 and Ph.D from Universiti Malaya. She is current as Executive Programme Coordinator (Multimedia System) and senior lecturer at Faculty of Information Science & Technology, Universiti Kebangsaan Malaysia. Her specialization were in Multimedia in Education and Human

Computer Interaction. Her research interest were in Interaction Design, Haptic User Interface, Usability Evaluation, Information Visualization. Email : [tsm@ftsm.ukm.my](mailto:tsm@ftsm.ukm.my). Contact number : +6 03 - 8921 6078



**DR ZURINA MUDA** received the B.Sc of Computer Science from Universiti Kebangsaan Malaysia in 1997, M.Sc of Information Technology from Universiti Kebangsaan Malaysia in 1999 and Ph.D from University of Southampton. She is current as Head of Multimedia Studies and lecturer at Faculty of Information Science & Technology, Universiti Kebangsaan Malaysia. Her specialization was in Multimedia in Education. Her research

interest were in Multimedia Intelligent Design and Development, Spatial Image Annotation and Retrieval, Interactive Game Design and Development. Email : [zurina@ftsm.ukm.my](mailto:zurina@ftsm.ukm.my). Contact number : +6 03 - 8921 6182