A pilot study: the evaluation of Malaysian virtual folktales in second life

Masyarah Zulhaida Masmuzidin a *, Jianmin Jiang b, Taoran Wan c

Abstract

Learning about courtesy and moral values is important in children’s development. In order to become a harmonious and balanced human in intellectual, spiritual, emotional and physical terms, Malaysian children have been exposed to moral education since primary school. However, it is important for the children to learn and practise it within their family environment and this can be taught through storytelling. In this research, we introduced the Malaysian virtual storytelling land named Hikayat Land which, has been built in Second Life. We conducted a pilot test and will reveal the feedback we gained from our intended users; children aged 11-14 years old. Their opinions will be to improve the weakness of this product in terms of usability, and we want to understand users’ perceptions of the new method of storytelling through virtual technology.

Keywords: Evaluation, Second Life, Virtual Storytelling, Technology for Enhancing Teaching and Learning;

1. Introduction

During the past ten years, children have become one of the largest groups using computer technology. An adult’s main purpose is to accomplish a task. Children, on the other hand, are more into entertainment and fun. One might think designing a technology for children is less challenging, but it is important to bear in mind that children are different from other user groups in many respects for example, cognitive development; behaviour, motor control, language comprehension, reading ability, and interest. These factors however will change when a child goes through a process called child development.

One popular example of children’s development is in the work of Piaget. Piaget, in his theory, segregated children's development’s into four stages: 1) sensory-motor (birth-2 years), 2) pre-operational (2-7 years), 3) concrete operational (7-11 years), and 4) formal operational (11 and above).

Each of these stages has its own characteristic. For example, when a child is in the pre-operational phase, his language skills start to develop and he starts to name objects. In this phase, a child can group shapes with the same colour, although, he still cannot accept other people’s point of view (we call this the egocentric stage). Meanwhile, when at 7-11 years old, a child starts to think logically about objects and events. He can also categorise objects into
several types and can order them into sequence. But, when a child reaches the formal operational stage, he matures enough to handle problems and think like an adult. This is because he has reached a highly developed state of equilibrium, or in other words, the child’s cognitive formation has now fully developed to a point where they can effectively adapt to a great variety of problems. However, a child in this stage might still have different interests compared to an adult.

With regard to the vast differentiation in child development, it is vital for researchers to discern who will use their technology, and to develop a technology that can fulfil the child's needs. It is worth trying to involve the children in the technology design process. We believe children are not only passive viewers in this modern age, but their roles can change to active participants where they can play the roles as user, tester, informant and design partner (Druin, 1999).

In our research, we involved the children in the development process and their main roles were as testers. According to Druin (1999), with this role, children will test the prototype of the product before it releases into the real world. The children will be observed using the product and the impact on them will be assessed. The observer, or evaluator, will ask for feedback from the children by asking questions like “What did you like?”, “What was too boring?”, or “What was too hard?”, during the testing period. Therefore, with the children's participation, we anticipated reaching the following objectives: 1) to gain information about the usability of Hikayat Land in Second Life, and 2) to know users’ perception about the new method of storytelling. Their opinions will be used to improve children's virtual products for Malaysian children and youth.

This paper has been organised as follows: Firstly, we will briefly outline about our project, Hikayat Land and the motivation for the research, followed by the evaluation methodology. Then, we will reveal and discuss the results. Lastly, we will explain about our future work, followed by the conclusion.

2. Hikayat Land and motivation

In Malaysia, we believe that the greatness of a country is not only measured in terms of their economical and technology establishment, but also through the citizen’s capacity to practice for courteous and well respected behaviour. Therefore, young Malaysians have been exposed to moral values since entering primary school, where courtesy and respect have been asserted in Falsafah Pendidikan Negara through Kurikulum Bersepadu Sekolah Rendah (KBSR) and Kurikulum Bersepadu Sekolah Menengah (KBSM) implementation. However, the moral education should not only depend on the school, it should be practiced within the family environment through a strong medium like storytelling.

Children can learn about respect, love, freedom, courage, diligence and other positive values from the stories, and usually, these stories will be recited by a storyteller called Penglipur Lara. However, it is hard to find Penglipur Lara in this modern age. They only exist in rural areas and sometimes perform important event like wedding ceremonies and culture festivals. Their extinction is due to their refusal to hand the stories to other people, especially to the younger generation. They believe that, in this modern era, and with the emergence of technology like the internet and ICT, the young generation are not interested in storytelling anymore. If this continues, it is possible that Malaysians could lose their precious folktales, forever. Therefore, in order to prevent the stories from becoming extinct, researchers like Norhayati & Hwa (2004) suggest the use of 2D technologies to teach children about moral values. They also found the use of advanced technology, like virtual reality and artificial intelligence technology, can enhance teaching and learning, and create a great educational environment, and an interesting experience for the children while they learn about moral values.

We have become motivated to develop Hikayat Land, a virtual land in Second Life where children can read stories about folktales and learn about the history of the folktales. They can also gain knowledge about the efforts made by the government in preserving folktales, and challenge their knowledge by taking virtual quizzes. The children can also communicate with a chat bot (a conversational agent that interacts with users about certain topics by using natural language) called Penglipur Lara. He functions as a guide and will answer questions regarding the land and the stories. Besides all the age appropriate activities designed for the children of 11-14 years old, the children can also make friends with other users, discuss what they have gained from the experience while exploring
Hikayat Land and using features like Instant Messaging (IM) and Video over Internet Protocol (VoIP) provided by Second Life. This can create a great user experience which cannot be achieved through the implementation of storytelling with 2-dimensional technology.

3. Evaluation method

We carried out an evaluation session to ensure this technology can enhance learning and teaching. We expected to gain feedback on usability and user perception of the new method of storytelling. Ten children (5 girls and 5 boys), aged 11-14 years old, participated as the testers in the Hikayat Land’s evaluation session. During the evaluations, we adapted the guidelines for usability testing with children proposed by Hanna, Risden and Alexander (1997). We focused on greeting the children, creating a friendly environment with them by having an informal conversation, talked about their life, their favourite cartoon, and etcetera. Then, we briefly explained to them the importance of their participation, stressing that they were not the object of the test. We also motivated the children by telling how we forget about being a child and that we need their comments and feedback from this usability testing to use in improving the product design and to produce a great and usable product for other kids in the world.

The children received questionnaires on which they had to provide answers, such as age, name, school, computer literacy and folktale knowledge background. After completing the questionnaire, they got a card which stated the five tasks they needed to complete in this test. They had been advised to complete all of them within 25-35 minutes. We also suggested that the children spend ten minutes in Second Life official land, just to learn how to control the navigation in the virtual land with keyboard and mouse, discovering on how to walk, run and fly and how to communicate to other people in the virtual environment.

There were five tasks that had to be accomplished by each of the participants: 1) navigation in Second Life, 2) interaction with the folktales, 3) watching streaming video and learning history, 4) interaction with a chat bot called Penglipur Lara and, 5) take quizzes.

The first task involved navigation only and the goal of this task was to make them familiar with the Second Life interface and gain basic knowledge about Second Life. This can reduce intervention which affects the children’s attention while they used the real project (Hikayat Land). The second task involved users’ interaction with activities in Hikayat Land, that is, interaction with virtual objects like slideshows containing four series of Hikayat Sang Kancil. The third task was watching a video stream to learn about previous productions of Malay folktales. Users watched a video about Hikayat Sang Kancil which had been produced by Radio Televisyen Malaysia (RTM) in 1975. The fourth activity was communicating with a chat bot (Penglipur Lara), or the storyteller. Penglipur Lara is there to answer all the children’s questions on the folktales and the land. However, he only communicates in English during the test. In the last task, users were asked to take two quizzes each containing five questions about the folktales and another five on moral values, which can be gained from the folktales in Hikayat Land. After completing all five tasks, they were interviewed personally by an interviewer. A laptop had been provided during the interview to help users to remember their action, experience and feeling while exploring Hikayat Land.

4. Result and Discussion

During the evaluation session, we found that the stories were understandable and moral value can be projected through virtual storytelling. This is due to the result where the children scored 100 percent in both of the quizzes given to them in the virtual land. However, we noticed the children faced fewer difficulties, especially in term of reading capability and language skills. Below are the results that we gained from the evaluation session:

a. We learned that font size 16-pt is more suitable and readable in this virtual environment, compared to 14-pt. It is based on feedback from the users where they read aloud when reading the dialogue (16-pt), but when reading the narration (14-pt), they told us that it was more difficult to read on the sentences. This finding contrasts with the research reported by Bruckman and Bandlow (2002), where they found textual information with size 14-pt to be the easiest font to be read by the children. However, we believe that other factors like distance and gap from reading point (where the children stand), and the reading material, contributed to this contrast finding.
b. We also found that two of our youngest testers had difficulties in pronouncing a few words like ‘rendang’. In the sentence, the word ‘rendang’ means a shady leafy tree, but it had been pronounced in different ways and this changed the meaning into a Malay traditional food. We noticed this mistake when they started to read out loud, and inaccuracies in pronunciation showed that their vocabulary and language development is still limited, and the way in which they understand words cannot be predicted (Read & MacFarlane, 2006). However, only younger users stressed that they did not know the meaning of ‘rendang’, ‘ujar’, ‘tempik’ and ‘nyaring’. The other older users did not have any issues with this.

c. In the context of interaction, the girls preferred to read the slide automatically, compared to clicking the three dimensional button under the virtual book. Feedback likes “It is much easier to read when I don’t have to click it”, and by pointing at the object and expressing that “I preferred the front slides compared to this one”, showed that how their feelings on this point and click interaction. Although they preferred to read from automatic slide shows, we found that they read the information board at least twice because the slide moved too fast. They cannot read when the information board showed too many sentences as their reading speed is definitely not like an adults. Too much effort in reading will increase their frustration whenever they miss information in certain slides. This will lower their attention and reduce the feeling of being immersed in the folktales. Therefore, further research needs to be conducted on how many words per second within a slide is readable for children age 11-14 years old in the virtual environment.

From the collaboration perspective, all of the participants preferred the concept of team work and sharing in this virtual land. Feedback consisted of “I like to read this with other people”, “I am ok with partners”, and “I want friends but two is enough”. This showed that social interaction plays a significant role in the learning environment, as they can share their experience, argue, and make conversation. It also showed that children are comfortable with their peer existence in this virtual land. From the test, we found 80 percent of the children liked the new idea of virtual storytelling by stating opinions like “It is fun!”, and “Interesting game, I like it”. Some said that they would love to use this application again. It was also revealed that younger users (aged 11-12 years) enjoy their time in Hikayat Land. They started to read the folktales out loud, making different voices according to each character like a small voice for the mouse deer and rough voices for the tiger. This is in total contrast to the older users (13-14 years old), who concentrated and focused during the evaluation process. When we asked about their feeling about this virtual land, they stressed that they like the idea of learning and playing in a virtual environment, but folktales are not listed in their interests. Conversely, we are not going to compare the conflict of interest in this study as we assume all the users have the same interests as they are all in the same children’s development stage.

d. Lastly, communication with Penglipur Lara, our guided chat bot in Hikayat Land. During the evaluation session, we told the children that the chat bot could only communicate in English, although we programmed the chat bot to answer in Malay language as well. The reason for setting a foreign language in the chat bot’s brain is to understand Malaysian children’s English capability. In this study we found, three of the participants (all of them are
girls), could translate the questions given in Bahasa Malaysia to English and communicate with the chat bot. However, 40 percent could only ask the first questions and the rest do not even want to try. We believe, this behaviour and reaction is caused by the feeling of insecurity as the children felt ashamed if the chat bot did not respond to their question as if they were using wrong words or grammar. Based on Fransen and Markopoulos (2010) experience, they found children do not like to make mistakes in the presence of other peoples and they often stop making any action when faced with difficulties.

5. Future work

In our future work, we would like to investigate the few things listed below:

1. We want to investigate more about the distance between the user’s reading point and the reading material which contributes to the user’s ability to read easily. Does the distance matter? Or is it caused by the users’ position in virtual environment?

2. We also want to explore how many sentences in a slide can be read by children per second? Is there any difference in the speed of reading between girls and boys, and between young children (11-12 years) and older children (13-14 years old)?

3. Lastly, we will consider the entire user’s opinion in order to make this virtual land more interesting. One important suggestion from the users is to bring the characters into ‘live’ in the land. When we asked about what they mean by ‘live’, one of them, referring to Nemo, not Naruto, which this can be understandable they want the characters to be in 3D form. On the other hand, another tester described ‘live’ as the character interacting and telling the stories to him like the way in which a normal human being would do.

References


