

Wizard of Oz Evaluations with Children – Deception and Discovery

Janet C Read

Child Computer Interaction Group
Department of Computing
University of Central Lancashire
Preston, UK
jcread@uclan.ac.uk

Emanuela Mazzone

Child Computer Interaction Group
Department of Computing
University of Central Lancashire
Preston, UK
emazzone@uclan.ac.uk

Johanna Höysniemi

Tampere Unit for CHI
Department of Computer Sciences
FIN-33014 University of Tampere,
Finland
johanna@cs.uta.fi

ABSTRACT

This paper describes a small study that investigated how children perceived a Wizard of Oz experiment. Ten high school children attended two different presentations of Wizard of Oz evaluations and once they had experienced both, they were told about the wizard set up and asked some questions about their perceptions of what was happening. The results showed that for the majority of the children, the presence of the wizard went unnoticed even when the wizard was in the room. Those that noticed wizard activity were alerted to it by the sound of the keyboard activity that accompanied one of the experimental setups. This is an important result for the child computer research community, but further work needs to look at effects on different age groups and with different use contexts.

Keywords

Research methods, Wizard of Oz, Deception, Ethics, Children, Experimental Studies,

INTRODUCTION

In a traditional Wizard of Oz experiment, there is a human wizard who manipulates the interface independently of the subject of the experiment. The method was first used by [2], although it was only named Wizard of Oz when it was described by [4]. The technique is often used in recognition systems where a wizard makes commands happen, behaving as if he was the recognition software [1]. The set up for this sort of work relies on the ability to hide the wizard, either by placing him in another location, or by making his manipulation of the interface appear invisible.

The reliability of the findings from a Wizard of Oz study can be compromised by a poor experimental set up, or by a poorly prepared wizard. In speech recognition work, the wizard can hear the user speaking to the computer and he

has to be able to predict what sounds or words the speech recognition software would expect. This is relatively difficult, and the wizard needs to understand how speech recognition works to be able to emulate the software.

There are instances where WoZ studies have been effectively carried out with children; in one study, children played a game which was driven by a wizard sitting in the room where they could see him, in this instance, the game was sufficiently engaging that the children were unaware that the wizard was controlling the interface [3].

THE STUDY

Ten children (five female, five male) aged 12 and 13 participated in the study.

Two rooms were prepared for the experiment; in one, the wizard could be hidden, in the other the wizard was seen. Two different experimental activities were prepared, the first used word processing with a mocked up speech recognition interface (speech), the second was a navigation exercise with a prototype application that had been constructed with images and non-functional event buttons (navigation). Each of these applications was available in both rooms. There were two wizards, one in each room, both trained in either of the two. Children attended in pairs, and on arrival were labelled as A and B or C and D. This allocation was used to determine the order that the child attended the experiments; this is shown in Table 1.

	First Experiment	Second Experiment
A	Speech / Hidden	Navigation / Seen
B	Navigation / Seen	Speech / Hidden
C	Speech / Seen	Navigation / Hidden
D	Navigation/ Hidden	Speech / Seen

Table 1 - The order children attended the experiments

During the experiments, two researchers logged the actions of the child and made notes about significant behaviours; once the children had attended both experiments, each of them sat down with the researcher who explained about the wizards and then asked them some questions about their experience.

IDC 2005, June 6-8, 2005, Boulder

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Specifically, the researchers asked the children

1. If they realised there was a wizard (this was asked for both the hidden (H) and the seen (S) case),
2. Whether they thought it made a difference if the wizard was seen or not,

Once the children had answered the questions they were advised that as they had been deceived, they could now withdraw their consent to participate and have their results destroyed.

RESULTS

All the children were happy for their results to be used and so the results summarized here represent ten children's experiences on two different applications, hidden and seen. The results are in two parts, observed results, as noted by the researchers DURING the activities, and reported results as collected AFTER the activities from the children.

Observed behaviours

During the navigation exercise, there was little evidence that any children were aware that they were not in control. One child appeared surprised when something happened that he had not expected and two children performed multiple clicks that only resulted in one action, but ended unconcerned about that.

During the speech exercise, the children were more savvy, one child appeared to know the software that was being emulated, two commented that the words being presented were not the ones that had been said, one child was heard to say 'what if I say the word file?', showing that he understood what was happening with the software (but not necessarily with the wizard)

Reported impressions

The children were given the chance to comment on their impressions of the activity with the hidden and seen wizards. The interview results were coded as follows: "Something going on definitely" (Wizard), "A hint of something going on" (Possibility), "No Idea" (None). The following charts (Figure 1 and 2) summarize the findings:

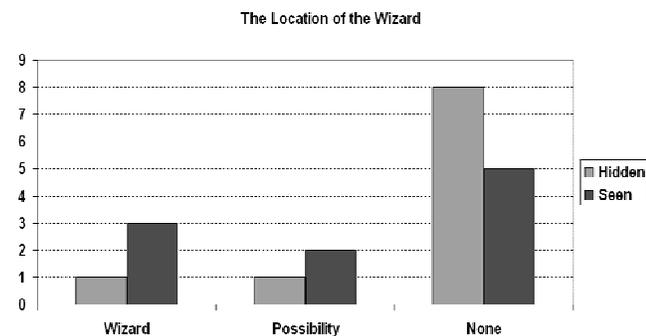


Figure 1 - Wizard Seen or Unseen

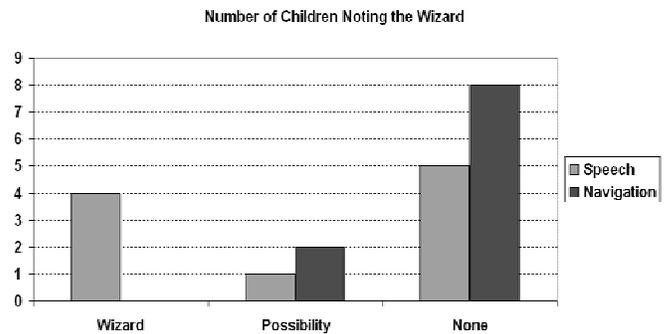


Figure 2 - The Effect of the Activity

DISCUSSION

The biggest predictor of the wizard being discovered was the speech application. This was due to the children hearing the keys being pressed, or noticing odd behaviours. In general, the children were reasonably unaware of the wizard in the navigation exercises, two children thought the wizard was fiddling with the software but did not know what was happening.

CONCLUSION

This paper investigated the feasibility of WoZ method with children and compared the effectiveness of the two different settings. Having the wizard in the same room makes him/her more aware of the user's situation and context and therefore may allow the wizard to provide more efficient feedback to the system. Although, the wizard being hidden was more effective in terms of chance not to be discovered. On the other hand, having cameras, microphone and the possibility to see inside the room but not being seen gave him/her almost the same perceptions as being in the room.

The fact of using WoZ created little disappointment on children expectations, only on the ones who were especially excited by the idea of a speech recognition system. Further works will look at differences in actions and reactions during and after WoZ experiments between different ranges of age amongst children.

References

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