

# The Usability Study on the Multicultural Children's Book Project of the National Library for Children and Young Adults (NLCY) in Korea

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## Abstract

In this study, usability issues at the multicultural children's book project web site of the National Library for Children and Young Adults (NLCY) in Korea were identified, particularly for children users. Suggestions for improvements include brighter colors, bigger fonts and graphics, more lively animation and sound, easier navigation, consistent interface, summary availability, better organization of information and labeling, and multilingual searching and browsing function. A user study is being planned for future development.

*Keywords:* multicultural children, usability, interface design, National Library for Children and Young Adults

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## Introduction

Beginning in 2009, the National Library for Children and Young Adults (NLCY) in Korea has made about 300 children's picture books published in Korea available on the web, in 6 different languages in the form of adopted animations accompanied by storytelling performances. This large project is one of many efforts by the Korean government to educate and assimilate foreign populations, along with their children, who have been arriving since the 1990's in this still extremely homogeneous country.

A selection committee, consisting of the librarians at the NLCY and external experts, chose a list of quality books. The library contacted the publishers to clear copyright which were subsequently cleared with a modest fee. The ongoing project is currently available at the NLCY homepage at <http://lscn.nlcy.go.kr:8000/>. Figure 1 shows a screen shot of its front page.

## Purpose of Study

In spite of the massive quantity of translated, animated and performed storytelling in this project, the interface of the web site is not ideal for users, particularly for children. In this study, we would like to identify usability issues on this site based on findings from the related literature and provide suggestions for future improvement to create a better interface.

## Literature Review: Children's Information Seeking Behavior

In order to learn how children's information seeking behavior influences children's interface design, various research studies about children's information seeking behavior were reviewed. Dresang (2005) points out that children's information seeking behavior related to children's digital media use might be that the young are missing rich information from the environment due to their information seeking skills not being fully developed. Bilal (2005) tells that 43% of children felt frustrated during the search process because of the zero hits of children's retrieval using Yahoo!igans! In addition, 85% of children were

motivated to use the Web for increasing self-confidence, challenge, discovery and for convenience. According to the research of Madden, Ford, Miller and Levy (2005), the factors which determined children's ability to search successfully were the amount of experience the children had of using the Internet, the amount of guidance from adults and friends (Druin, Foss, Hutchinson, Golub, & Hatley, 2010) plus, the ability of them to explore the virtual environment and to use the tools available. Lu (2010) points out that children's information need should connect to children's other needs at different developmental stages. In a recent study, Bilal & Sarangthem (2009) stated, "children information seeking was characterized by seven modes of behavior: Start, Recognize, Browse, Differentiate, Read, Explore and Finish."

## Preliminary Findings

### Colors, Fonts, and Graphics

The NLCY (URL: <http://lsc.nlc.go.kr:8000/index.php?nFlag=Y&sctnation=2&&nation=>) has a background which currently has some basic colors in muted tones with small fonts displaying the title of the story underneath a small graphic depiction of a page in the story. Children prefer to have a portal page which has bold, colorful backgrounds and graphics which include fonts that are large; such as a 14 pt font for young users and 12 pt font for older users (Nielsen, 2010) with suitable vocabulary for their age (Bilal & Bachir, 2007). Creating a page with brighter colors, larger graphics and fonts will enhance the page and attract more users. It is difficult to know what the languages are on the NLCY interface and the flags depicted show ambiguous identification of each country. Large, Beheshti and Rahman (2002) suggested the use of attractive screen designs based on color, graphics and animation, plus keyword search and browseable subject categories for the design of children's web portals.

### Animation and Sound

Animation and sound are important for children to like and want to interact with the interface page (Nielsen, 2010). Druin (2005) recommended an interface which can be modified to increase children's retrieval success for digital libraries. The NLCY has animation and sound, however there are some limitations. Many scenes only have a character's head or one object moving while the remaining screen is static. In other words, only a small part of the screen is animated, which may make the children watching it bored. In regards to sound, there is only one storyteller on the site with very limited sound effects. The stories need more animation and sound to create more interest and engagement with the story.

### Difficulty in Navigation

To navigate to the next page of stories on the interface, a child needs to click at the bottom of the page, a small numeral or a tiny red arrow. It is difficult for children to find and accurately select a small icon to advance to another page which can cause the child to become discouraged in navigating the site (Hutchinson, Druin, Bederson, Reuter, Rose & Weeks, 2005). Children should have buttons or larger targets on the interface; therefore the child can easily move and accurately navigate to the stories.

### Inconsistent Interfaces

Within each story, there are small interactive buttons which hide or allow the speaker of the story or the written words of the story to appear while the user is listening to the story. It was found in the course of this study, these buttons varied in location from one story to the next. With some stories, the buttons are located on the left side margin of the book and in other stories; the buttons were located on the right side of the book. The buttons also changed color along with being housed in a one button icon or they had their own separate button. Inconsistencies in the layout of a user interface will affect how the user feels about the site and whether they want to continue using it (Ahmed, McKnight & Oppenheim, 2006). Creating a layout which follows the same type of format for each storybook will increase the satisfaction of the users.

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## Summary Availability

Hutchinson and others (2005) explained how older children rely on book summaries when selecting a story to read. The NLCY provides some summaries for their books on the interface; however, they are inconsistent throughout the selections with some books providing a summary, while others do not. Having an overview of a story might aid a user in making a choice in selecting the book to read (Bederson, Quinn, & Druin, 2009). Without the summary, the user will either choose not to read it or they have to enter and start reading the story to determine the choice.

## Information Organization and Labeling

Labeling and organization of information is important, especially for children due to their cognitive and physical development. Within the NLCY, the stories are organized with nine books displayed on a page with the titles of the stories underneath each pictorial representation of the book. Children typically choose books by category or from a physical characteristic of the book. Having individual categories which represent the type of books within the collection will aid the users in the process of browsing or searching for a book they would like to read (Bilal, 2002; Hutchinson et al., 2005; Reuter & Druin, 2004). Moreover, as part of the labeling on the interface, HELP is an essential component, especially on a children's interface page. Children like to have HELP that provides information which aids in the searching process (Bilal, 2002) The NLCY English page provides HELP, however it is labeled "Details". Besides how some young children might not understand the definition of the word "Details", the section itself only provides labeling of each facet on each specific interface page. Additionally, the section does not explain how to conduct a search on the site. A suggestion would be to provide "How To" pages to make it easier for children to search for stories on the site with perhaps screenshots or tutorials of navigating the pages.

## Searching and Browsing

An interface should have more than one type of searching style available to accommodate all age levels and searching modes (Reuter & Druin, 2004). On the NLCY, searching for a story can be done via a search box, though the search box only allows for the Korean language. Being a multicultural storytelling site with multiple languages, the interface should be multicultural and provide for searches with other represented languages. Plus, the site only allows for a keyword search and according to Bilal (2002) who investigated children using a web search engine, children didn't like using only a keyword search box, they would rather use an icon/metaphor (Druin, 2005) and other ways to search on the site (Bilal, 2002). Furthermore, icons/metaphors are needed to aid in the searching process which would aid a searcher who has difficulty spelling (Bilal & Bachir, 2007; Hutchinson, Rose, Bederson, Weeks & Druin, 2005). Icons/metaphors are usually objects which aid a child in the searching process by providing a recognizable item (Large, Beheshti, & Cole, 2002). Providing representative icons will allow users who are younger to find a story they would like without having to worry about interpreting the text presented on the page. Additionally, when searching or browsing, children typically prefer a faster load time to keep their interest (Bilal, 2002). The NLCY is inconsistent in the load time with some individual stories loading slower than others.

## Conclusion

There is a great value in making 300 children's books available to the public at the NLCY digital library in 6 different languages with their original pictures animated and their stories performed in a storytelling mode. However, to provide more pleasant access to the valuable site, particularly for children users, there is much room for improvement in terms of the user interface. Based on these findings, a user study is being planned for future development, which should be more intuitive for users, particularly children.

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