Designing for Children
- With focus on 'Play + Learn'

Ethnography study to improve a children library called 'Miracle library'

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Abstract: In this paper, we present an ethnography study on a children's library in Korea. The research goal was to search design solution directions to create better library experiences that could satisfy children and parents. The ethnography study was designed to understand four things: 1) how users feel in the library and what their behaviors and expressions are, 2) how users react to unsuitable objects or inconvenient situations, 3) how children act to achieve their goals and with what strategies adults support children to do so, and 4) how librarians manage their job, and what children and parents typically do while at the library? This paper presents key findings that were elicited and design solution directions are proposed.

Key words: children library, ethnography, library experience, user experience, user research.

1. Motivation and background

As many as 50 to 60 percent of all public library users in U.S.A. are young people (Walter, 2003). One of important roles of public libraries is to provide children with a reading and play space. In Korea, there is a children's section in most public libraries, however the spaces are small and children's activities are restricted by adults. From the recognition of the lack of spaces for children to read and play, children's libraries called the 'Miracle Library' were established through nationwide movement led by a major broadcasting company 'MBC' several years ago. The founding idea of 'Miracle Libraries' was to provide children with space to read, study and play in their own way. From building to running everything was done by nongovernmental groups. So they have been typical examples of changes in village culture through library penetration in Korea (Soonyoung Heo, 2005).

We wanted to know if Miracle Libraries kept in line with its initial aim for children and if there were any aspects to be improved, to provide better library space for children. To do so we conducted an ethnography study. By observation of users' behaviors and activities in context, we tried to find design solution directions for elements to improve. Our observations were done at 'CheongJu Miracle library' which was built in 2004.

In this article, we describe how we conducted our ethnography study and what the findings and insights lead us to believe. In the first part, related research is surveyed. We then discuss the processes and methods we employed and finally the findings, insights and design solution directions are described.

2. Related Works

Ethnographic methods are old and confirmed to elicit clients' requirements in many fields. In library research as well, requirement elicitation for improving services is one goal of ethnographic study. Childers (1989) used specific ethnographic techniques such as key informant interviews, daily logs, and participant observation to determine the states and needs of libraries. Another ethnographic study aiming to elicit requirements for developing information searching systems was conducted at a help desk in a university library (Crabtree et al., 1997). These two studies did not relate to children.

One reason for using ethnographic methods with children is that their oral and written language skills are not well developed (McKechnie, 2000). In a library study, MacKechnie used ethnographic methods: audio-recording of naturally occurring discussion, participant observation, and key informant diaries for exploring the information-seeking behaviors and library usage of preschool students.

Some ethnography studies are related to digital services (Crabtree et al., 1997),(Sandvig, 2000),(Seadle, 2000),(Bryant et al., 2009). Sandvig(2000) used non-participant observation and unstructured interviews with children, parents, librarians, and library volunteers at a free public computer center. Through ethnographic method, the researcher found that children used the place for playing, transmitting information and working. Seadle(2000) conducted ethnography studies with people who involved digital library as developers, sever providers, engineers, educators and so forth. Micro cultures of those groups of people were studied to improve digital library service. Bryant et al. (2009) studied how digitalization changes physical space in a university library through an ethnographic approach.

In architectural research, a study on spatial planning of children's library was done in a Miracle Library through observation and interviews (Kang and Shin, 2006). This study focused on the influence of the physical environment on children's behavior.

Some studies on children in libraries are related to children's searching behavior and ability in digital library (Borgman et al., 1995),(Hirsh, 1997),(Reutef and Druin, 2004) (Hutchinson et al., 2006). Borgman et al.(1995) tested four different browsing systems to understand children's information-seeking abilities through experiments. Hutchinson(2006) also used experiments to compare two different types of category browsers for children's digital library. Hirsh(1997) explored how elementary school children find information from science library catalogs through one-on-one interview, online monitoring techniques, observations and card sorting tasks. Reutef and Druin(2004) used mouse selection logs to see children's searching and selection strategies in using a digital libraries.

Reviewing researches shows that most ethnography studies focus on specific issue like information seeking and relate to digital technology. Many other studies aim to explore children's ability, while there are few studies on overall observation in children libraries, devised to uncover design solution directions.

3. Field Study Goals

Understanding people and context was the main goal of this ethnography study. To make the study follow a consistent flow based on the main goal, we set field study goals. They were specified as four key aspects to observe and are listed below.

- *How do users feel in the library and what are their behaviors and expressions? With these we can estimate if the library plays well its role as a children library.*
- *How users react to unsuitable objects and inconvenient situations? In some cases they may invent their own methods to deal with these situations.*
- *In the library, librarians, children and parents are mixed. How are children acting to achieve their goals such as searching for and reading books? How do the different adult groups support the children? What are their strategies?*
- *How do librarians manage their job? What do children and parents spend most of their time doing in the library?*

4. Research Procedure

4.1 Contact/preliminary visit

Before the main observation we made a preliminary visit to set an observation plan. We interviewed a librarian to understand the library more specifically.

The library was 2 story building. The first floor was for education and social activities. And the second floor was the main library. Before going into the library, everybody is required to remove their shoes and put them on a shoe shelf next to the entrance. This is a common practice in Korea because floors are often made of wood and heated in order
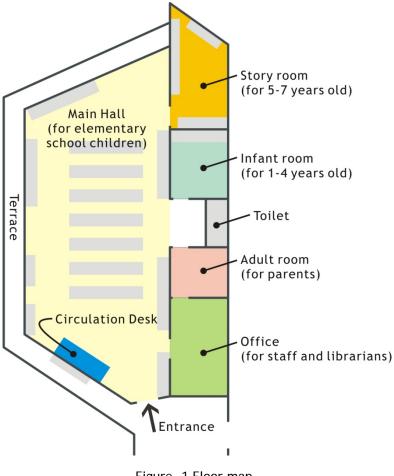
Figure. 1 Floor map

that people can sit directly on them. The library space consists of six parts; a main hall for elementary school children, a story room (for 5-7 years old), an infant room (for 1-4 years old), an adult room, an office and a circulation desk. The staff was made up of two types of librarians; staff-librarians who were employees working in the circulation desk and in the office, and volunteers who worked around bookshelves helping children and arranging books. The volunteers were temporary workers for at least one day and at most had worked there for more than one month. Most of them are middle school or high school students coming for getting service credit for their schools. Others are university students and mothers.

4.2 Setup

There are a number of modes for researchers involved in an ethnographic research process; non-participation, complete observer, observer-as-participant, moderate or peripheral membership, active participant and complete participation and complete membership (Baker, 2006). We played as complete observers and unobtrusive measurement was used so

that the users didn't know their behaviors were being observed and recorded. Photographs were used to collect data.

Based on our preliminary visit we set an observation strategy. Since the library had six sections, each section was needed observation. If an observer stays in a certain section, things happening in the vicinity could be observed. However this kind of observation would lose perspective of the user's full experience over time. So location and people based observation were planned. To instantly jot down observation with interpretation, we used notepads where pages were divided into two columns; the left column for facts and the right column for interpretation of the corresponding facts.

To make observation effective we set an observation framework. The main observation elements were objects, places, people and communication. Based on these, observation checklists were made to avoid observing irrelevant subtleties.

4.3 Main observation

Main observation was on a Sunday. We divided the observation into 4 parts; session 1, middle discussion, session 2 and final discussion.

Session 1, 'location-based observation', was designed to observe people's general experiences in certain areas. Each author was in an appointed place to observe people's activities and behaviors. Observers were situated at the circulation desk, main hall, infant room and story room. This aspect lasted from 10 a.m. till noon. After that, we had an hour's discussion about session 1 and planned our strategy for session 2.

Session 2, 'people-based observation', was designed to discover particular users' experiences. Two of us followed a family and the others followed groups of friends and individual users. The observation was done for 2 hours in the afternoon. Finally we got together to discuss what we had observed before losing track of what we had seen. We organized facts and interpretation from general issues to specific ones.

5. Findings and Insights

Based on the issues we categorized, we constructed an affinity diagram. Major findings were re-categorized into groups as follows.

Copying other people's activity. Children unconsciously copy what other people did. For example, children left books everywhere; on the table or in empty spaces on bookshelves. When a person put a book on a certain place, other children unconsciously stacked books on top of it; it functioned as a return pile. Other coping activities were everywhere. In the infant room, kids wanted to take out books as their mothers or others did. In the main hall,

as a boy started to run around the shelves, his friends started to do it until they were interrupted by a staff.

Reading everywhere. Children's reading place is not limited. Chairs and sofas are used for reading. However the floor was the main place where the reading occurred. Children sat on or even lay down on the floor. In the aisles between shelves, they used the shelves as book rests or as a backrest while reading. In some cases this became an obstacle for other people.

My own space like a small attic. Children prefer small spaces. In the main hall, there were half-opened small rooms underneath the circular tables. Children went into them and stayed there for a long time while reading. And we saw a boy going underneath a sofa.

Visual rather than text. Graphical information is more useful than text. Every book had two labels on it; a text code label and a color code label. Children used color code to search books rather than text code. And they selected a book by checking the front cover images rather than book titles.

Long staying. Children relatively stayed in the library for a long time. Most of them stayed for more than two hours. Their main activities were reading and searching books. Borrowing books was a small part. Thus the reading environment and searching system should be firstly considered.

Boring parents. Most children came with other people. There were few coming alone. Some higher grade elementary children came with friends, the others came with parents. This might have occurred due to transportation matters. So the parents' role was limited there. In the infant room, mothers took care of their child or would read books to them. However in the main hall, parents were less interactive with children or with other parents. We saw nodding or resting parents on the chairs and sofas.

6. Design Solution Direction

Children stay at the library for a long time. So the space should not only be convenient for reading but issues beyond reading should be considered such as facilities for water fountains and snacks. Other issue such as caring books and belongs when they leave the space temporally for toilet, eating or some other reasons should be considered as well. They need something to put their books or belongings so that they resume reading when they return.

Long staying causes busy internal book circulation as well. This means that books which children are searching are frequently kept by others. There is no record or information regarding who is keeping them and when they left. The shelf can be smart so that it

records when a book leaves and informs you when it returns via mobile phones, pagers or any other system.

Considering children like to get into small spaces, playful furniture rather than normal and purposive one will be suitable for children behaviors. For example furniture where children can go, sit or lie down can provide children-preferring space. And they need to feel safe, enjoyable and uninterrupted while using the furniture. Space for parents should be also considered. Children-oriented space makes parents boring. Parent books can be on higher shelves rather than in an isolated adult section. And some family-oriented space will make parents and children interactive through reading and playing.

Something inducing children's behavior will work well rather than direct instruction, because children tend to copy other people's activity. For example, some types of 'fake books' in the free spaces on shelves will lead to users' unconscious piling books. This will prevent placing books everywhere and work as an internal book circulation system.

Considering that children search books by the color code or cover images, children's information handling should be visually supported. Flipping or pulling out and placing books for checking the cover images are hard jobs. A system showing the front cover images should be possible for book searching.

7. Conclusion and Discussion

In the present study we aimed to explore design solution directions to create better library experiences. Overall, the library seemed to retain its initial goal, providing children with the space to read, study and play in their own way. Allowing for sitting on the floor, including a color code system, imparting room divisions considering children's developing stage, and taking and reading books without any interruption were mostly unique for children. However there were some opportunities for improvement and providing better user experience. Space, furniture, searching system and some facilities can be improved. Although the design solution directions are relatively front end and simple, they can be used as a starting point to study specific problems and generate detail design ideas.

On the study procedure, we achieved some findings during the preliminary visit. This helped us to set up specific research goals and strategies. We found that this data could also be part of our ethnography study. And there was one foreign member who was conspicuous among Koreans, particularly when with children. We felt that he could not achieve the strategy of unobtrusive measures. However, we managed to conduct a fluent observation without noticeable effects of others' curiosity. This might be because of the library context, where most users were absorbed in reading. On top of that, different

perspectives from different people make rich insights added significantly to our study. For example, sitting and lying down on the heated floor is common in Korea however, from our western researcher's perspective, taking and reading books sitting on the floor was impressive and unique.

Acknowledgement

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