How can I find a doggy book?: Children’s cognitive processes of physical characteristics of books

ABSTRACT
This paper reports partial results of a study of children’s information seeking behavior regarding physical characteristics of books from Beak’s study (2014) constructing a child-driven metadata schema by understanding children’s cognitive processes and behaviors during book selection. Understanding children’s cognitive processes and behaviors during book selection contributes to support knowledge organization systems reflecting children’s perspectives. This paper includes a short transcription of an account of two children while perceiving physical characteristics of books. In addition, two examples are introduced to show how physical characteristics can be described in metadata records.

Keywords
Metadata, knowledge organization systems, children’s information seeking behaviors, cognitive processes.

BACKGROUND
Children have become a significant user group in both physical and digital library environments. To keep pace with the growing information needs from a children’s user group, Library and Information Science has developed child-friendly search interfaces, web portals, and digital libraries. Behind these products, a large number of studies on children’s information behavior have been conducted. A body of literature in children’s information behaviors shows that children have different information seeking and searching behaviors from those of adults (Bilal, 2000; Borgman et al., 1995; Hirsh, 1997; Pejtersen, 1986; Sandlian, 1994; Solomon, 1993). Moreover, in order to motivate children’s interest or attention to find information, digital libraries or web portals for children are concerned with aesthetic aspects (Reuter, 2007a; Large et al., 2009). The International Children’s Digital Library project is a good example of a children’s digital library considering many issues related to children’s searching and browsing behavior and aesthetic aspects (Druin, 2005; Hutchinson, Druin, & Bederson, 2007).

Despite a large amount of effort and research regarding improving information retrieval systems for children, children still complain about using library cataloging systems and finding information in an online environment. This is because of the lack of consideration in information organization systems for children’s libraries or children’s resources. Existing knowledge organization systems, including metadata schemas, and previous literature in the metadata domain have shown that there is no specialized metadata schema that describes children’s resources that also has been developed by children.

INTRODUCTION
Beak’s dissertation research (2014) identified cognitive factors and facets that children perceived during book selection. Based on the cognitive factors and facets, Beak (2014) constructed a child-driven metadata element set. In terms of the research design, 22 child participants between the ages of 6 and 9 had participated in Beak’s study (2014) and visited local libraries three times. She used a triangulated qualitative research design which has been methodologically influenced by Reuter’s study (2007b), consisting of questionnaires, paired think-aloud, interviews, and diaries. Participants were asked to think aloud while selecting books in libraries by interacting with a friend. The findings of children’s cognitive factors and facets show results similar to a pilot study by Beak (2012) and Reuter’s (2007b) study in general. The cognitive facets identified by Beak (2014) range from characters, illustration, familiarity, series, story, subject, difficulty, engagement element, basic bibliographical information, recommendation, genre, and novelty to physical characteristics. This proposal focuses on reporting physical characteristics of children’s cognitive processes during book selection rather than introducing all cognitive facets or a child-driven metadata element set.

PHYSICAL CHARACTERISTICS
Physical characteristics are one of the cognitive facets that the child participants in Beak’s study (2014) perceived during book selection. Participants perceived physical characteristics through books’ shapes, folded or over-layered pages or pictures, or texture components in a book. For example, children’s books by written and illustrated by Eric Carle, such as The Very Hungry Caterpillar, or Mister Seahorse are popular among children because they tend to have over-layered pages that children can interact with while reading them. In this sense, physical characteristics are often associated with an engagement element cognitive facet. Physical characteristics are apt to motivate children’s emotional interest in reading a book and to be used as a cue to recall the book later. For instance, pair 9 (Children Q and R) in Beak’s study (2014) provided a good example of participants’ perceptions of physical characteristics (see Transcript 1).
Q: I want Doggy.
Q: No, that was the one he [R] had last time. That was all furry.
Z: Oh, but you [R] didn't bring it?
Q: He [R] did bring it, but it's probably still over there [a book cart].
Z: Oh, Okay.
Q: But she [a librarian] might have put it back.
[...]
Q: Hey, where'd you find it last time?
R: Last time I found it here. It's not here. It's not here. It's like that big.
Q: As big as all those?
R: Yeah.
Q: No, it's not.
R: It's pretty wide.
[...They are looking at other books.]
Z: Okay, do we have enough books now?
Q: No.
R: Doggy.
Q: I'm still going to look.
Z: Do you want to ask a librarian?
Q: I'm afraid to.
Z: You're afraid to?
Q: I don't know what the book is called.
Z: How do you describe the book?
[Going to a librarian and asking]
Q: Oh, Excuse me. Do you have any book where it's like a dog on it, but you can actually feel the fur on it?
Librarian: Is it a specific book or do you want any book where you can touch?
Q: It is like a certain book. It was over there.
Librarian: Like the board books?
Q: Right over here in this area. I was looking, and it was red. It's not this one. On the cover it had like a little dog house. You could feel on it.
Librarian 1: You know... I don't know which one you are talking about. And if you don't know the name of the character, maybe they can look it up down at the information desk.
R: Really?
Librarian 1: Do you want to go down there and she can look on the computer?
R: Yeah. I'll take a look on this computer.
Z: Good job! Not here, I think she means by over there.
Librarian 1: You want to go down by [librarian's name]. She's all the way down there.
Q: Should we do that?
R: Yeah. I'll look for it.
Q: You know how to work the computer?
R: Yeah.
Q: Why don't we just ask her where it is? You do it, R! Ask her.
[...]

Q: Dog house book that we can like feel the dogs fur on it.
Librarian 2: Oh, that would be with the board books. Against the wall.
Q: Yeah, we saw them but it's not really there. And he put it in here [return box]. And the person took it out.
Librarian 2: Oh, you just returned it.
Q: Yeah.
Librarian 2: You know what? It might be on the cart that the lady's putting the books away on.
R: A book dropped down there.
Librarian 2: I know I saw it. I'm going to get it in a minute, thank you.
R: Okay. Let's find the cart.
Q: Where's that girl anyway? Where's the cart? She might have put it back. Where was it? Over here? Nope. It's not back.
Z: Are you sure that it was there?
Q: Yeah, I'm looking and I can't find that book.
R: It was in that one, that one, or that one.
Q: And I'm looking at them.
R: No, Q! It had a point and it was pointing up.
Z: It had a point up?
R: Yeah, it was the book just like a dog house. Look for a point pointing up.
Z: R, what do you mean point up?
R: Like the book is shaped the same as.
Z: Oh, the book shaped like different.
Q: Yeah! More like a dog house.
R: Yeah! It is like a little on top. Like dog houses.
Q: It's not there right now.
Z: Ah. I see.
Q: Why don't you tell the lady that, the one over there? Tell her.
Z: Do you mean that book? I think I saw something there?
Q: Where?
Z: Over there.
Q: Yes, Doggy. ["My Dog"]
R: We found it.
Q: Doggy.
R: We found it.

Transcript 1. Partial transcript of pair 9’s third library visit (Children Q and R, Z: Researcher)

During the third library visit, two participants in pair 9 were looking for a book, *My Dog* written by Angela Joy, and illustrated by Nicola Slater (see Figure 1). Children Q and R had seen this book during the second library visit. However, they could not remember its title or author during the second library visit. If the children do not know the book title or author, how can they find this specific doggy book? What they remembered about this book were three things: 1) the book had a dog that child R called Mr. Doggy (not the character’s correct name), 2) the book had fur that they could touch, and 3) the book was shaped like a dog house. It suggests that the main character in a book and the
physical characteristics of the book are more important for the children during book selection than basic bibliographic information such as title, author, or illustrator. Can existing library catalog standards support these kinds of children’s cognitive processes and information seeking behaviors?

Figure 1. Book cover of My Dog

EXAMPLES: METADATA RECORDS OF MY DOG

Unique characteristics of the book My Dog are that the book is shaped like a doghouse and includes fabric patches representing dog fur. How does a current library cataloging standard describe this book? The following example is from OCLC Connexion (see Example 1). It shows a metadata record of the book My Dog.

| > Title: My dog / |  |
| > Identifier.LCCN: 2004017630 |  |
| > Identifier.ISBN: 1589257596 (hardcover) |  |
| > Identifier.ISBN: 9781589257597 (hardcover) |  |
| > Contributor.namePersonal: Slater, Nicola, • ill. |  |
| > Creator.namePersonal.MEntry: Joy, Angela. |  |
| > Date.issued.MARC21-Date: 2005 |  |
| > Description.note: Includes fabric patches representing dog fur. |  |
| > Description.note: Shaped like a doghouse with die-cut opening in front cover. |  |
| > Description.note: Cover title. |  |
| > Description.summary: When Joe’s mother takes him to pick out a dog, she suggests many different ones, but Joe knows right away which is the right dog for him. |  |
| > Format.extent: 1 v. (unpaged) : • col. ill. ; • 28 cm. |  |
| > Language.ISO639-2: eng |  |
| > Publisher: Tiger Tales, |  |
| > Publisher.place: Wilton, CT : |  |
| > Subject.class.LCC: PZ7.J824 • Jo 2005 |  |
| > Subject.class.DDC: [E] |  |
| > Subject.topical.LCSH: Dogs • Fiction. |  |

Example 1. OCLC Connexion record for My Dog (number: 56128259)

The record from OCLC Connexion used ten different metadata elements with nine different refinements to describe My Dog. Information about doghouse shape and fabric patches were described in a description element with a note refinement. A description element cannot function as an access point in a browsing search. Beak and Olson (2011) pointed out the limitation of the note field in AACR2+ in relation to children’s searching behavior and the nature of a browsing search interface. In other words, information described in a description element could be searched by keyword, but could not be functioned as a category-based browsing search. Given the previous literature in the children’s searching behavior domain, a browsing search is more effective for children than a keyword search. In order to allow children to find My Dog by a unique book shape and fabric patches, physical characteristics should be described in an independent metadata element rather than being described in a Description element.

Beak (2014) shows a metadata record example for the book My Dog described by a child-driven metadata schema that she developed based on analysis of children’s cognitive processes during book selection (see Example 2). Although this paper does not introduce child-driven metadata elements, example 2 provides a general sense of child-driven metadata elements, showing how physical characteristics of the book My Dog are described.

Example 2. A metadata record for My Dog described by a child-driven metadata schema

A child-driven metadata schema allows a metadata record to describe different aspects of a book. Although many
online catalogs provide a book’s front cover image along with bibliographic information, they do not describe information listed on front book covers. Given that children perceived many aspects of books through a front cover, simply displaying the cover in an online catalog may not be sufficient to represent it. In this sense, a child-driven metadata schema provides more information associated with book covers through metadata elements such as color, book shape, or object. Recommended best practice for physical characteristics is to describe if the physical carrier of the resource is not designed traditionally. In the case of My Dog, the book’s shape is unique. Therefore, it is better to provide a description regarding book shape separately from a description element. It also enables books to be categorized by whether or not book shape plays a role as a cue to find a book so that children can browse books having unique shapes. In addition, one of the most memorable characteristics that the children recalled about this book was fur, a textured material. While Dublin Core describes the textured material information with a Description.note element in example 1, a child-driven metadata schema describes it with metadata elements of a textured material and an engagement element. It allows books to be gathered by textured materials or at least by whether or not a book includes an engagement element.

CONCLUSION

Physical characteristics are one of the cognitive facets that the child participants in Beak’s study (2014) perceived during book selection. As an account of children in pair 9 showed, physical characteristics play an important role in finding and selecting books. They not only are cues to refresh their memory about the books, but they also motivate children’s interest in reading the books. Given that there are relatively few books having unique physical characteristics, physical characteristics may not be perceived as often as other cognitive facets. However, this paper shows that it is obvious that children perceived physical characteristics more easily than bibliographical information like title or authors, and used them as cues to find books. Therefore, knowledge organization systems like metadata need to reflect these children’s cognitive processes during book selection.

REFERENCES


