学 位 論 文 の 要 旨

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学位論文題目	Building an Enhanced Browsing/Reading Environment by the Installation of the BrowsReader in the Children's Room of a Library or Kindergarten

Reading together draws much attention as a societal concern for children not only to yield emotional reaction but also to gradually advance intellectual thinking. For children to find and read picture books of interest together with their families and/or friends, the children's room of a library or kindergarten is one of the best places. It can be noted that if the collection there is not biased in content and not limited in number, it becomes more attractive and enhances the reading together activity. Unfortunately, mainly due to finance, many small public libraries are unable to collect many and/or various picture books. In a large public library, however, children have to physically browse through multiple bookshelves or search a bibliographic database for keywords.

We here try to solve these problems, by building a new children's reading environment in the children's room of a library or kindergarten, where the BrowsReader is installed, and children's activity in browsing/reading together with their families and/or friends is steadily enhanced. The BrowsReader is a system designed so that children can gather around it and engage in picture bookshelf browsing and picture book reading. Its basic ideas involve the processing of the *primary* and *secondary information* seamlessly and the assisting children in *browsing/reading together* the printed, digitized, and web picture books. To realize the BrowsReader we introduce three notions; (i) a *surrogate picture book*, which consists of the front-cover image followed by the page images of a printed, digitized, or web picture book, (ii) an *abstracted bookshelf*, which presents the front-cover images and the titles of many picture books in the form where all are linearly arranged, with some of the images bundled in places and some of the titles superimposed in string, and (iii) a *unified view*, which presents every page of any picture book in a form that seems like a printed picture book's page. The features of the BrowsReader realized involve:

(1) A large number and wide variety of printed, digitized, and web picture books are reproduced as surrogate picture books.

(2) Children, together with their families and/or friends, can easily browse in an abstracted bookshelf storing surrogate picture books and have a similar experience to browsing in the physical bookshelves of a children's room, without noticing the difference between the primary and secondary information.

(3) Children, together with their families and/or friends, can read any found surrogate picture books in a unified view that allows each surrogate picture book to be viewed as if it is an ordinary printed picture book.

(4) The browsing/reading activity for the surrogate picture books would not infringe upon copyright protection.

The hardware setting of the environment is just a computer with a touch-display. By gathering around the BrowsReader children can easily browse in an abstracted bookshelf and then find surrogate picture books which are of interest. Any found surrogate picture book, which can be moved around, rotated, and enlarged, is read by flipping the pages with the same convenience as with a familiar printed picture book. The BrowsReader further is easily customized so that it can be installed in any children's room.

The BrowsReader has been evaluated along with its step by step improvement through eight case studies; three of the case studies were conducted in the temporary children's rooms built in Oita University campus and five in the actual children's rooms of Oita Prefectural library, Beppu University's attached kindergarten, Oita City library, Beppu City library, and Yufu City library. A free-style evaluation study, where children freely used the BrowsReader, was employed so as not to have any long lasting influence on the children's browsing/reading activity in the future.

In the initial three studies, where hundreds of digitized and non-flash-based web picture books and also printed picture books became available, the children's behavior was observed, and then the children were questioned and interviewed to evaluate the effect of the installation. Through the observation and the answers we confirmed the BrowsReader could be used in an actual situation.

In the latter five studies, a relatively large number of digitized, non-flash-based and flash-based web picture books and a fairly large number of printed picture books collected in a children's room became available on the BrowsReader. The printed, digitized, and web picture books, which were arranged so that they reflected the scheme used to classify the printed picture books, were able to be browsed all together, and any digitized/web picture book be read as if it was an ordinary printed picture book. By analyzing the data of the employed logging system, and questioning and interviewing the librarians and kindergarten teachers who observed the children's behavior, we collected the evidence showing that the children's activity in browsing/reading together were steadily enhanced in the actual children's rooms.

（注）和文 2,000 字又は英文 800 語以内　　　　続紙　有□　　無☒

学位論文審査結果の要旨

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論 文 題 目	Building an Enhanced Browsing/Reading Environment by the Installation of the BrowsReader in the Children's Room of a Library or Kindergarten
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審査結果の要旨（1000 字以内）

　幼い子どもから小学校低学年くらいまでの子どもにとって，家族や友達と一緒に絵本を読むことは，感情を豊かにしかつ知的能力を発達させるのに大きく役立つと言われている。この事実を踏まえながら，家族や友達とのグループ読書に最適な場所の１つは図書館や幼稚園の子ども室であるとし，そこでのグループ読書活動を活発化する新しい方法について述べている。研究開発したブラウズリーダと呼ぶコンピュータシステムを子ども室に設置することで，ブラウジング主体で望む絵本を見つけ出せ，それらをグループで読むことができるような読書環境の実現についてである。ブラウズリーダを使うと，次のような特徴が生まれる。

- ・冊子体絵本に加えウェブで公開されている種々の電子絵本も扱える
- ・１次情報と２次情報の区別ができずとも，子どもは多数の絵本が収められた絵本棚から望むものをうまく探し出せる
- ・探し出した絵本は，それが冊子体絵本か電子絵本かの区別を気にせず，家族や友達と一緒に読める
- ・電子絵本を扱う際でも，著作権に抵触せず低コストで済む

　論文中では，子ども室での従来からの読書活動を参考に，各種の絵本，それらを納めた絵本棚および読む際の絵本の見え方それぞれを，代替絵本，抽象化絵本棚および統一化ビュー，と名付けて導入した概念のもとで体系的に整理した上で，ブラウズリーダの実装方法を記している。

　ブラウズリーダの設置によるグループ読書活動の活発化の評価については，仮の子ども室や公共図書館・幼稚園内の子ども室での多面的な利用を通して行っている。仮の子ども室では，幼い子どもでも，絵本棚をブラウジングしながら読みたい絵本が探し出せること，探し出した絵本が電子絵本，冊子体絵本の何れであっても違いを気にせず読まれること等を確かめている。大分県立図書館を含む県内５か所の子ども室では，これらの確認事項に加えて，子ども達は読書活動の中でブラウズリーダを日常的に使っていることも確かめている。評価のまとめとして，子ども室での蔵書対象に電子絵本も加える必要があり，また，地方に在住する子ども達に電子絵本をより多く読んでもらえるような方策を立てることが必要であると提言している。

　論文公聴会における説明は適切で，質疑に対する応答も的確であった。審査委員会では，全員一致して本論文は博士（工学）の学位に相当すると判定した。