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Taking Up the Challenge: How Can Libraries Teach Information
Skills to Children?

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This paper is based on an original research project “The Games Children Play: Evaluating the Effectiveness of Activities Used to Teach Library Concepts to Children”, carried out in partial fulfillment of the requirements of the Master of Library and Information Studies, School of Communications and Information Management, Victoria University of Wellington. Copies are available from the author or from Victoria University of Wellington.

Unless you have spent the last decade in a sealed vault, you would be aware of the explosion in the growth and use of Information Technology by today’s society. This has led to changes in the way we work, the way we study, the careers we seek and the ways we spend our leisure time. Most of us would agree that information skills are necessary for everyone, from children to jobseekers, those in paid work and third-agers. It is not enough to be “literate”, we must be “information literate”.

Recent media comment has questioned the information literacy skills of New Zealand school children. Research carried out by Penny Moore in New Zealand¹, Borgman, Hirsh and Walter in Los Angeles² and Solomon in North Carolina³ suggests that children do not have enough knowledge of relationships between catalogues, books and shelving systems to put their theoretical knowledge into practice. Also, children’s vocabulary was not sufficient to understand many of the terms used in subject headings. As recently as 1999, New Zealand media commentators stated that our school children are not being taught information skills. The news article in this case, was reporting on Gavin Brown’s research at the NZ Council for Education Research (NZCER). This reported on the results of NZCER’s standardisation of six new Information Skills tests on students in Years 5 through 8.⁴

¹ Penelope A. Moore and Alison St. George, “Children as Information Seekers: The Cognitive Demands of Books and Library System,” *School Library Media Quarterly* 19, no.3 (1991): 167

² Christine L. Borgman, Sandra G. Hirsh and Virginia A. Walter, “Children’s Searching Behavior on Browsing and Keyword Online Catalogs: The Science Library Catalog Project,” *Journal of the American Society for Information Science* 46, no. 9 (1995): 665

³ Paul Solomon, “Children’s Information Retrieval Behavior: A Case Analysis of an OPAC,” *Journal of the American Society for Information Science* 44 no.5 (1993)

⁴ Gavin Brown, “How Information Literate are New Zealand Children?” paper presented at NZARE/AARE 1999 Conference Melbourne Nov 29-Dec 2, 1999. Wellington: NZCER, 1999

Research studies have focused on students' understanding of the information skills involved in gaining access to library resources. The NZCER study was quoted in the print media under the heading "Children Fail Test of Skills to look up Facts".⁵ Of the results quoted, the following were included: "A quarter consistently reversed the meaning of the words fiction and non-fiction"; "the Dewey system confused many children"; "of year 5 students, one in five thought they could use the publisher's name to locate non-fiction books and one in nine thought the Dewey decimal number was the number of pages in the book". The author of the NZCER study, Gavin Brown, is quoted as saying, "our impression is that kids aren't getting taught directly how to do this stuff...". Brown does go on to acknowledge that whereas some people might question the need for information retrieval skills in the age of the Internet, libraries were authoritative and reliable, unlike much information found on the Internet and that if "kids can do that in a school library, then they're better prepared to do it on the Web, too".⁶

I'm sure this research has reinforced the suspicions we children's librarians have had for some time.

However, for many of the librarians who are involved with services to children and youth, comments regarding the lack of teaching of information skills are a surprise. Activities in User Education have existing for some years in public libraries around the country. What is not such a surprise is that the methods and processes used to teach information skills are not as effective as we had hoped.

Recently our own professional organisation's periodical *Library Life*, reported on a visit by "the acknowledged Information literacy guru" and Dean of the University Library at San Jose State University in California, Patricia Senn Breivik. Dr Breivik notes from her own experience that "getting access to information could make a truly significant difference for the better in peoples lives."⁷ She stresses that the United States, though putting "tons and tons of money" into getting internet access to everyone, is "...not making a difference. We haven't found a way to focus on the people empowerment part yet. Having access to a PC and being able to play games on it doesn't mean that you can find information on the internet that can help you with a problem or issue and evaluate it."⁸

This statement resonates in the hearts of committed, passionate Children's and Youth Librarians everywhere. Remarks like "If it's on the computer, it must be true" or "I got it from the Internet so it must be okay" remind us that the growing reliance on the PC as the sole provider of reliable information is becoming ever more disturbing.

An Information Literacy programme must include question analysis, location of information, evaluation, synthesis and presentation of information. Fundamental to any such programme is the ability of the student to understand the library's classification system and therefore, access the required information.

⁵ Theresa Garner, "Children fail test of skills to look up facts", *The New Zealand Herald* Wednesday January 19 2000

⁶ Ibid

⁷ Hazel Dobbie, "NZ could be world model says info literacy guru", *Library Life*, no. 248 (August 2000): 13

⁸ Ibid, 14

Here at Christchurch City Libraries the Central Children’s Library has used a variety of games and activities to introduce school children to the way in which it organises information and to increase their library skills. These methods include:

- The “Poetree”: a tree-shaped variation on the “board game” theme, which is used to promote the poetry collection (which in the case of the Central Children’s Library, as with many other public libraries, is housed within the non-fiction collection).



- Dewey Memory: a selection of Bingo “cards” (slightly larger than an A5 piece of paper), which show colour copies of book covers from particular Dewey

categories with the corresponding Dewey number. As with the playing card game, there are two of every card. Cards are laid facedown on the floor and children are asked to lift them one at a time in an effort to find the matching pairs.



- Dewey Lotto: cards of a similar shape to those above are divided in sections with individual sections showing pictures of book covers from several Dewey categories. The Librarian holds up another series of cards, one card at a time, with each card illustrating one Dewey category. The students cover their playing cards, one section at a time, if they can match one of their pictures with the one

the Librarian is holding. This game works on the same principle as Housie, Bingo or Lotto games.



- The Wheel of Fortune: a large segmented wheel, with spinning arrow placed in the centre. The class is divided into two teams. Children spin the wheel in turn and wait for it to stop at one of the segments. Each segment is labelled with a section of the Library (Younger Fiction, Older Fiction, Fairy Tales etc.) The child then has to find the corresponding sign in the Library itself and retrieve a book from that section. The team with the most books at the end of the game wins.

The above are a small selection of the many games and activities designed by staff at the Central Children's Library, Christchurch City Libraries. A philosophy adhered to by children's staff here is that the Library can be a fun place and learning about the Library should be fun. Hence the use of games as instructional tools.

The activity we are about to examine was designed to meet specific goals.

- To promote the Dewey Decimal Classification system and to help illustrate the subject categories in that system
- To meet the needs of the variety of learning styles within any group
- To enable students to connect Dewey numbers with shelf locations

It was hoped that the activity would help children familiarise themselves with subject categories, therefore assisting them in accessing information from the library.

The use of the laminated book covers primarily gave students something to hold and the game its visual appeal. In this way, it was hoped that the visual/tactile learners in the group would respond to it. I've already mentioned the use of games in order to make learning "fun", but librarians also believed that children gain more from participating in an activity, rather than being "talked to" by a librarian. The fact that the library lesson would involve "doing" something was believed to be appealing to most students, particularly those kinesthetic learners.

By way of definition, when I refer to "learning styles", I mean:

Visual Learners:

- Learn by seeing. These learners often think in pictures and learn best from visual displays. They also need to see the teacher's body language and facial expression.

Auditory Learners:

- Learn through listening. These learners are best suited to verbal lectures, discussions, talking things through and listening to what others have to say.

Tactile/Kinesthetic Learners:

- These are "doing" learners who learn best through a "hands-on" approach, by actively exploring the physical world around them.

Of particular relevance to this is Barbara Prashnig's statement that the majority of school-aged children remain kinesthetic/tactile throughout the primary school years and in fact, "far fewer students than teachers ever imagined are highly auditory or strongly visual...Yet, traditional university and adult education and formal training is still strongly based on auditory/visual information intake. Hands-on, so called "doing learning" or experimental training, is still seen as an add-on to "serious" or academic learning."⁹

A. The Research Project:

The research carried out at Christchurch City Libraries during 1998, as part of my Masters degree, endeavoured to study the effectiveness of one activity used to introduce the Dewey Decimal Classification system to Form 1 students. The research project also aimed to assist the Children's Library examine the effectiveness of the methods they used in user education. Teachers had been asked to fill out annual

⁹ Barbara Prashnig, *Diversity is Our Strength: the Learning Revolution in Action. A Guide to Better Living, Learning and Working.* (Auckland, New Zealand: Profile Books, 1996), 53-55

evaluation forms concerning their classes visits to the Library, but the individual activities had not been evaluated and student input had not been invited.

Today's workshop will consist of examining and participating in this activity. I will ask each of you to play with and comment on the activity itself, ask for suggestions to improve it and comment on whether you think this sort of activity is worthwhile. Bear in mind that as librarians, we should all have a good working knowledge of the Dewey system (or at least a passing acquaintance with it!) and so this will not seem new to us. I'll ask you to put yourselves in the place of schoolchildren who may or may not be aware of the existence of such a system.

The activity itself is modelled on the board-game concept. Initially, children see a board approximately 1 metre x .6 metre, marked out in ten squares, each square representing a Dewey Decimal category (see Fig. 1 below).



Fig 1.

While the librarian introduces the concept of Dewey Decimal Classification and its subject categories, she places a category heading on each square (see Fig. 2):



Fig 2.

The children are then handed two or three small laminated “book covers”. Each book cover represents a subject found in one of the categories marked on the board. The librarian then asks them to place the book covers in the category they believe it belongs in. Children are encouraged to ask questions at any stage during the activity. Much discussion took place about where each book cover should be placed. Finished correctly, the board should look like this: (see Fig. 3):



Fig 3.

Once all the questions were answered and the book covers placed on the board, the librarian showed the children actual book covers from books held in the library. She asked the students which category each one would belong in and discussed their answers with them.

B. Research Project Methodology:

The class attended the library in two sessions, three weeks apart (the normal gap between sessions for classes attending the Central Children’s Library). At the first session they were given a short pretest to determine their library skills knowledge. The instruction session, or activity, teaching the concept of Dewey Decimal Classification followed this.

At the beginning of their second session, the students were given a posttest (identical to the pretest), followed by focus group discussions involving two groups of five students.

To ensure reliability of the data, an independent scorer was used to check answers on the pre and posttests. Also, two recorders were used during the focus group interviews.

One limitation of the study was in the structure of the questions. Obviously, the Pre- and Posttests had to use similar questions, but the order of the questions was altered so that students could not rely on memory to answer the Posttest. However, it may be that some questions were answered with the aid of memory, so results may not be as accurate as was hoped.

[At this stage in the workshop, the audience will participate and comment on the activity itself.]

C. Results of Research:

Learning Styles:

Coincidentally, the group participating in this research project was already aware of their own learning styles as their school was making every effort to incorporate different learning styles into their teaching methods. Students felt that this activity suited most learning styles, particularly the visual aspects. However, though they were generally of the opinion that the visual aspect of this activity was helpful, it would have been more effective with some minor improvements,

- A combination of words and pictures would have helped. For example, book covers showing pictorial representations of objects or ideas found in each subject category may have been more effective if the picture was paired with a word.
- Students also felt that some sort of memory aid such as a handout or flier showing examples of subject categories together with examples of books found in those categories would have assisted in reinforcing the concepts raised in the activity.

Students themselves commented positively on the visual aspect of the activity.

This activity was felt to be more beneficial for those who were visual or kinesthetic learners, but perhaps not so effective for those who learnt by listening. However, the introductory part of the activity was appreciated by one “listening learner” who found this part most useful.

Frequency/Reinforcement

One overwhelmingly obvious and potentially disastrous result was that although students enjoyed the activity at the time, they did not recall it in detail by the time of their next visit three weeks later. Students themselves commented that although they felt they learnt a lot during the session, they quickly forgot what they had learned. Three weeks later they struggled to remember what they had done and would have appreciated a follow-up session.

Difficulties with Dewey Categories

Comments from both focus group discussions supported the research findings and emphasised that whereas some Dewey categories were “easier” to understand than others were (particularly those, which had personal relevance to the students’ own interests); others were much more problematic. This is especially true of those categories, which could be described as “abstract” rather than “concrete, such as “philosophy” as opposed to “Arts, Music & Sport”.

Also, students struggled to understand the relationship of the Dewey numbers with Dewey categories. Question 4 on both Pre and Posttest asked the students to decide on a Dewey Decimal number, for example the 200s or 300s, for placement of a book on a particular topic. Whereas this question was answered with a degree of uncertainty in the Pretest (8 correct responses, but 8 “Don’t Know” responses), the Posttest yielded more correct answers (11 correct responses, with 3 incorrect and 4 “Don’t Know”).

This type of question is difficult to analyse, as responses may be mere guesswork on the part of the students. Also, the question places them in an almost “blind” situation, as Dewey numbers do not often mean anything to students. This is a problem for the activity’s effectiveness, as one of its aims was to help students understand that the library’s classification system assigned numbers to subject categories.

Something to note about this part of the research however is the alternatives chosen to correct responses. When students were asked to choose a suitable subject category for a book on pollution, nine opted for “Science” and three for “Philosophy” while six choose the correct answer of “Social Sciences”. This may reveal more about the confusing nature of Dewey categories than about the students’ ability to choose correctly.

Another interesting result concerned a book on Egypt where, of the six students who choose the wrong subject category, *every* student chose “Literature”. Whether this result has a conceptual basis or is more concerned with the design of the answer sheet (where the “Literature” option was directly above “Geography, Biography and History”) it is not clear.

We could discuss more results from this research project, but we can already see that there are some major implications for the design of programmes both at Christchurch City Libraries and elsewhere.

- Activities based around various learning styles are helpful, but are more effective with frequent reinforcement of key concepts and memory aids.
- Students need to visit the library frequently to assist in reinforcement of key concepts
- Dewey Decimal Classification is a difficult concept to teach, particularly when considering the “old-fashioned” naming of some subject categories and their relevance or not to the lives of ordinary people. The relationship of Dewey numbers to Dewey categories is both key to understanding the classification system and problematic for many people endeavouring to learn what the system involves.

If anyone here has further comments to make, or questions to ask, I would be happy to try to answer those for you. I hope that through this morning’s session I have been able to share some insights with you. As you can see, while we at Christchurch City Libraries have made it a practice of ours to search for interesting, stimulating and fun ways to teach some reasonably dry library concepts to children, our efforts have not always been as effective as we had hoped, for one reason and another. If New Zealand school children are indeed struggling to come to grips with library skills, (and

regarding Dewey, I can hardly blame them!), then we Children's Librarians struggle to find stimulating and effective ways to teach them.

Some food for thought for you: I now work at New Brighton Community Library, one of Christchurch City Libraries' suburban libraries. This is a reasonably low socio-economic area where schools are generally some distance from the library. Though these schools are in the main, eager to visit the library, financial and logistical constraints mean it is often more economical for them to bring two or sometimes three classes to the library in one busload. This places pressure on the space and equipment resources of the library and severely compromises the effectiveness of the teaching.

Also, the popularity of the Library as a place to visit means that often I do not see classes more than once a term. Consequently, the ability to offer an on-going programme reinforcing information literacy skills amongst these students is retarded. We have been struggling with this problem for some time – how to meet the information needs of children with the pressure on space, equipment and frequency of visits?

Concurrently, schools around New Zealand are becoming more technologically equipped as more and more of them are acquiring computers and are connecting to the Internet.

It is becoming obvious to some of us that the answer may lie in how and where we deliver our instruction. Given the fact that we, like many other New Zealand libraries, offer our catalogue on the Web, it is possible to search the catalogue and offer instruction in using the catalogue, without being in the Library.

It seems to me that one way around the problem of delivering effective library instruction programmes is to take the Public Library to the school. This method also has great potential for Public Libraries to develop meaningful partnerships with schools. By removing the burden of cost and organisational problems from schools in the way of arranging visits to the Library, school children could benefit from frequent, meaningful lessons without having to leave the classroom.

That may be part of the solution. Nobody here would deny the importance of the ability to evaluate information, particularly when the Internet is becoming the preferred tool of many. The challenge for all of us is to develop methods of delivering library instruction which are stimulating, meaningful and effective.

If anybody here knows of a sure-fire method of unlocking the mysteries of the Dewey Decimal Classification system (even for your colleagues!), be sure to let us know!

Thank you all for your time and patience – I hope you have enjoyed yourselves.

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