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## Teaching Information Skills to Students with Disabilities: What Works?

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*A school library program can make an important contribution to the education of students with disabilities, especially in teaching them information skills that will give them lifelong support in accessing information that may be important to their daily living. As more students with disabilities are included in mainstream schools, school librarians need to gather information and knowledge about the most effective ways of teaching information skills to this group. Earlier literature on this topic is reviewed, and examples and approaches that were found in schools that participated in an Australian study on school library services for students with disabilities are discussed.*

### Background

As in other countries worldwide, many disabled children in Australia attend their local school (De Lemos, 1994; Murray, 2000a) as a result of inclusion policies in education. The school library program can contribute immensely to the education of disabled students, and one area where there can be an impact is in the acquisition of information skills. For students with disabilities, acquiring skills that will enable them to access information that affects their lives is of the utmost importance. If students are to become information-literate, access to an information skills program administered by a professional librarian is essential.

An Australian study (Murray, 2000a), which evaluated school library services for students with disabilities attending mainstream schools, investigated the acquisition of information skills by these students. This article<sup>1</sup> summarizes the literature relating to the context and findings of the study regarding the acquisition of information skills by students with disabilities. Thus the literature review considers the changing role of the special education teacher that leads to more collaboration with other teachers and professionals in their school; the development of information-skills teaching and cooperative curriculum planning and teaching (CCPT); and the teaching of information skills to students with disabilities. Data and examples from the Australian study are then discussed in order to identify possible approaches and strategies to use in teaching information skills effectively to students with disabilities.

## The Transition to Inclusive Education

Developments in special education over the last two decades have had an impact on the role of special education teachers. Ware (1995) commented that "the need for collaboration between general and special educators has been recognized as the key barrier to improved delivery of services for students with special needs in mainstream settings" (p. 127). Dyson (1992) sees a need for special educators to reflect on their own practices and redefine their roles in their school, and Dyson, and Millward (1995) observed that some schools in the United Kingdom are seeking to reconceptualize the role of the special educator as a "teaching and learning coordinator" who assists teachers in increasing learning outcomes for all students.

Lipsky and Gartner (1997), in discussing school reform, identify a change in the role of the teacher generally to becoming a coach and facilitator rather than an instructor, and working collaboratively with other professionals rather than in isolation. In an inclusive setting this will involve working with teacher aides, professionals, and paraprofessionals concerned with the educational provision for a student with a disability. Walther-Thomas, Bryant, and Land (1996) describe teaching and planning models that facilitate the support of disabled students in mainstream classes. They find one of the most successful approaches to be co-teaching, which is based on "ongoing classroom participation by supporting colleagues" (p. 256). It involves teachers working together as partners in planning and delivering an educational program for a particular group of students. But for co-teaching to be successful, staff development and time for planning must be provided.

McGrath (1990) discusses the transition special education teachers have made in Australia from using withdrawal as the primary method to team teaching with classroom teachers in supporting disabled students. She recommends that schools should have a policy that reinforces the role of specialist teachers such as special education teachers, teacher-librarians, and teachers of English as a second language. McGrath identifies a need for classroom teachers to understand the benefits of team-teaching, especially the benefits it brings to the targeted students without attaching any stigma to them. A more recent British study found that special education staff had an important role in supporting individual students and groups of students or in working in the classroom alongside subject teachers (Lee, 1996).

Another trend involves the conversion of what were originally resource bases for the support of disabled students to learning support centers that are available to all students. This change removes to some extent the labeling of students who use such services. Several Australian schools are creating learning support centers or groups that involve the amalgamation of special education, information technology support, and school library services.<sup>2</sup> Dyson (1992) and Heeks and Kinnell (1994) have observed similar developments in the UK. In schools where this kind of amalgamation has been achieved, computers, software, books, curriculum materials, and teaching

resources are available in one location alongside personnel who can provide learning support, information technology support, and expertise on resources.

### Teaching Information Skills and Cooperative Curriculum Planning and Teaching

The teaching of information skills as part of the curriculum rather than in isolation is a complex issue. In Australia, many primary school librarians regularly take a library lesson with each class in the school, which provides relief from face-to-face teaching (RFF) for the classroom teacher. This arrangement rarely extends into secondary schools, where classes usually are timetabled into the library for an information skills program during Year 7, but from then on classes may only use the library if taken there by a subject teacher.

School librarians are still fighting for recognition that the library lesson should not be used for RFF and that CCPT should be used to ensure that information skills are taught in context. Where a CCPT program is adopted, the work done in the library is an integral part of the work done in the classroom, and students understand this. Haycock (1989) states that the value of CCPT by the classroom teacher and the school librarian depends on the following conditions:

- planning and preparation are shared;
- individual attention to students is increased;
- there is satisfaction both for teachers working together using their joint experiences, and for students gaining independence and power in learning;
- continuity in information skills development is ensured through integration with the classroom curriculum;
- experiences are shared;
- there is a shared goal and responsibility in the partnership: gaining successful learning for students.

Montgomery (1991) found that cognitive style is related to the level of cooperation that takes place between school librarians and classroom teachers in integrating information skills into the curriculum. Librarians who exhibit field dependent characteristics in cognitive style, such as a social orientation, an interest in people and a preference for working with others rather than in isolation, made greater efforts to introduce CCPT with classroom teachers. School librarians who exhibited field independent characteristics such as being socially detached, relying on their own values and self-defined goals, and a preference to work alone, were not so successful.

McGrath (1990) has pointed out that special education teachers share the same problems as school librarians in gaining the support of classroom teachers in team-teaching particular sets of skills. The problems she describes as Support Teacher-Learning Difficulties mirror the problems faced by

school librarians: time to convince classroom teachers of the need to teach together; to plan, implement, and evaluate the units taught together; and to promote a team-teaching policy across the school.

The existence of CCPT in schools in the states of New South Wales (NSW) and Victoria is not extensive. An earlier study I was involved in (Williamson & Murray, 1996) provided evidence that the introduction of a new form of assessment for secondary school students in Victoria, the *Victorian Certificate of Education* (VCE), had forced school librarians and teachers to cooperate in the inclusion of information skills in the curriculum. The VCE focused on independent learning, and students had to complete a number of Curriculum Assessment Tasks (CATs) that in some subject areas replaced formal examinations. Hence there was a much greater need for students to be able to locate, evaluate, and use information for themselves. By Years 11 and 12 (the VCE years), students are so pressured by work that they do not have time to assimilate information skills fully. Thus teachers began to realize that information skills should be taught in the earlier secondary years of schooling, in preparation for the intensive study required later on. School librarians interviewed in the study felt there would be increased opportunities to establish CCPT programs rather than formal library lessons in the lower year levels, because teachers were beginning to see why CCPT was a necessary part of the school program. However, it must be noted that this study was limited in its methodology, and findings cannot be generalized extensively.

### Teaching Information Skills to Students with Special Needs

Both special education and school librarianship literatures were searched for reference to the teaching of information skills to students with disabilities. Little of substance was found in the former. Some textbooks, such as Polloway and Patton (1993), provide an outline of a library skills program, but offer no advice about teaching methods.

References in the school library literature are also sparse. Some of these references are now dated, but their content continues to be relevant. This literature, discussed in the remainder of this section, focused on several key areas: teaching methods, team-teaching, the use of electronic information resources and audiovisual media, and storytelling. A recent British study that covers several of these aspects is also described.

Baker and Bender (1981) identify the attitude of the teacher toward disability as a fundamental factor in successfully teaching information skills to students with disabilities. They emphasize the importance of ongoing assessment and the need to have alternative methods ready if initial activities fail to achieve the expected learning outcomes. Petrie (1982) emphasizes the need to break down tasks into small steps for some students. She maintains that individualized instruction is the optimal method of teaching students with learning disabilities, but advises that wherever possible it should be complemented by the inclusion of the student in group activities. She offers

strategies for using cooperative learning in the information skills context. For working in pairs, three possible combinations are suggested: pairing students with a common need in skill development, pairing a strong student with a weak student, and pairing students with a common strength. Petrie suggests that the ideal combination for a larger group is one low-achieving student, one high-achieving student, and two average achievers, but recommends that such groups be monitored to ensure equitable role assumptions. Petrie, like Baker and Bender (1981), places importance on ongoing assessment as an essential component of teaching information skills to students with learning disabilities. She draws attention to body language and appropriate use of the voice and language as important factors in teaching disabled students.

Wesson and Keefe (1989) recommend strategies for teaching information skills to students with learning disabilities. They offer a hierarchy of information skills appropriate for disabled students and recommend that two to five skills be taught each year. They suggest ways of modifying teaching methods, teaching materials, and motivational techniques. Visual cues, such as pictures, in addition to words on signs and labels can be helpful. Assignments and tasks can be shortened or modified, or the student might work cooperatively with another student. Several reinforcers to motivate students to learn information skills are suggested, such as allowing students to issue materials, allowing them to earn a discarded book or magazine, or using charts to monitor progress with skills to be learned.

In a later publication, Wesson and Keefe (1995) emphasize the advantages of cooperative teaching of information skills by the school librarian and the special education teacher. Team-teaching can overcome the difficulty some students experience in performing a skill learned with one person for a second person. This "generalization" can be a problem in schools where the special education model is one of support classes, where the student has to make a transition from the support classroom to a mainstream classroom—in this case the library. Teaching information skills cooperatively has another advantage: the librarian becomes one more person with whom students with disabilities can interact, thereby increasing their social skills. This advantage may persuade the special education teacher to try cooperative approaches to teaching information skills.

Putnam (1995) also believes that the school librarian can help students to generalize skills. The term *generalization* is used in special education to describe the process whereby a student successfully uses a skill in a setting different from where it was learned. Hansen (1995) suggests that school librarians can learn a great deal about teaching and communicating with disabled students by observing special education teachers. She found this curbed her habit of giving too much information to students at once, which can overwhelm students with certain disabilities. She also recommends consultation with support professionals such as speech therapists.

Special education research has demonstrated that students with learning disabilities respond better to auditory and visual stimuli than to print media. School librarians could use more multimedia in teaching information skills to such students. Robinson (1994) reports on teaching a curriculum unit cooperatively with a history teacher to a group of Year 8 students with diverse learning disabilities. The aim of the unit was the production of a video on the American Civil War. Much of the technical work was dealt with by the history teacher so that the students could focus on intensive research for the content and script. Most of the students were highly motivated by the unit, especially when they were exposed to using other media as well as books so that their reading skills were not paramount to the task.

Research conducted by Mendrinis (1992) showed that disabled students were "not only more motivated but more productive using CD-ROM technology for reference" (p. 29). This study showed that CD-ROM technology was a great leveller in enabling students to access information successfully, regardless of their academic ability. School librarians interviewed by Mendrinis found that students were able to more easily narrow their searches by using CD-ROM reference tools, to gain a better understanding of which subject headings or keywords to use, and then to transfer this knowledge to search other catalogues and indexes. Much of this levelling effect is attributed to how CD-ROM indexes divide topics into subtopics, which helps all students, not just disabled students, to define their topic and search for relevant information.

In a later work, Mendrinis (1997) commented that electronic tools could enable students to "map concepts, ideas, to outline terms visually as well as abstractly" (p. 21) Such mapping can be helpful to students with learning disabilities. It is particularly useful when students lack critical reading ability and initially have trouble identifying sources that are relevant to their topic because they find it hard to read for comprehension. Although scanning a printed text would be too complex for students with low reading ability, menu-driven CD-ROMs can help students understand how one search term is associated with another, thus enabling them to narrow a search and identify relevant information.

Several practitioners (Dequin, 1983; Marshall, 1981; Huston, 1976; Brown, 1976) have emphasized the importance of storytelling in the acquisition of literacy skills for students with disabilities. Marshall bemoans the fact that this activity is rarely undertaken in secondary schools, where it could be important as a motivator to encourage students with disabilities to read. Students would also benefit from hearing books that they might not be able to read on their own. Marshall emphasizes that in storytelling to some groups of children—those with intellectual disabilities, for example—librarians must expect different, possibly slower, or unexpected reactions to the story. Thus the choice of story or picture book must be made carefully.

Dequin (1983) also recommends telling stories to older children and suggests various strategies for storytelling activities.

A British study (Heeks & Kinnell, 1997) focused on learning support for students with learning difficulties in secondary schools. This study found that teaching information skills, including skills in using electronic information resources, was usually included in a Year 7 induction program, and that there was a desire to extend these programs into other year levels with more integration into the curriculum. School libraries also promoted recreational reading, often in collaboration with the English department, and usually through schemes designed to motivate recreational reading, with different targets for individual students. The physical environment of school libraries was also considered. In most of the schools, the libraries were in a central position and easily accessible, presenting an inviting image. The welcoming atmosphere of the school library was seen to be significant in encouraging the use of the library by students with learning difficulties.

The issues identified in the literature and summarized above were considered when questions were formulated to guide data collection in the Australian study that is described in the following section.

### The Australian Study

This study was conducted between 1994 and 1998 (Murray, 2000a, 2000b) in two Australian states. New South Wales and Victoria. A longitudinal approach was used because the study aimed to chart any changes in service provision over time in the period following the adoption of disability discrimination legislation in Australia (*Disability Discrimination Act 1992*). The study included both primary and secondary schools from all school sectors in these states: government, Catholic, and independent. Students involved in the study had disabilities that included visual disability, hearing impairment, intellectual disability, autism, learning difficulties, physical disability, dyslexia, and Down syndrome. Data discussed in this article were collected through two surveys and through observation and interviewing in case study schools.

The survey instrument was a questionnaire designed to collect mainly quantitative data, but included some open questions. It was first administered to a sample of 1,473 schools in 1994. A computer-generated, stratified random sample was used to ensure proportionate distribution across all school sectors. The follow-up questionnaire was sent to the initial respondents 18 months later.<sup>3</sup> There were 492 (33%) valid responses to the first questionnaire: representation across sectors compared favorably with the national statistics. This level of response was acceptable for a mailed questionnaire, especially in view of the workload of school librarians, and considering that the original sample constituted 50% of the finite population. The second questionnaire achieved a response rate of 53.5% (264). SPSS-X (1997) was used for quantitative data analysis of fixed-response questions.

The analysis consisted mainly of frequency distributions and cross tabulations.

Fifteen case study schools (7 secondary, 5 primary, 3 K-12) were selected using purposive sampling with the assistance of experts. The range of special education models used in the two states was represented. All the Catholic schools used a resource room model, where students with disabilities were mainstreamed in ordinary classes with support from a team of special educators. This model provides a less segregated form of education than the "support" or "special" class, which is a class for disabled students attached to a mainstream school. Some schools have a larger, separate unit that caters to children with disabilities. It is government policy in NSW to provide for disabled students through support units or support classes. In the NSW government case study schools, the disabilities supported were intellectual disability, physical disability, and hearing disability. In Victoria, all government schools used the resource room model, but one also had a support unit for students with a hearing disability, and another had a support unit for students with autism. Of the two independent schools, one used the resource room model, whereas the other had a special class for secondary students with intellectual disability.

The people interviewed in each school included school librarians, library technicians, library assistants, special education teachers, special education aides, and students with disabilities. Interview guides were used, but interviews were not structured beyond this.

The questionnaire and the interview schedule covered many aspects of school library provision. Those that relate to information skills acquisition included communication between library staff and special education staff, the involvement of special education staff with library programs (such as team-teaching information skills with the school librarian or input into selection of library resources), use of and cooperation with public libraries, and the particular needs of students with disabilities in individual schools in relation to library use. School librarians were asked how they approached information skills teaching and whether special education teachers had input into the process. Special education staff were asked about how information skills teaching was incorporated into the curriculum and about how students used the library. Students themselves were asked how they went about finding information and how they had learned to use the library. They were also asked about use of their local public library.

### Findings from the Surveys

Qualitative comments from the survey data indicated a range of approaches to the teaching of information skills to disabled students, depending on individual needs and the range of disabilities to be provided for in a school. Some disabled students were included in mainstream classes that went to the library for a library lesson; others received one-to-one instruction, either

from library staff or special education staff, while a librarian was teaching other students. The special education aide was most frequently cited as the chief source of assistance, but cooperative teaching and/or planning with special education teachers was mentioned by a number of respondents. In some schools, peer group tutoring was used in library classes. Respondents were aware of the specific needs of students with disabilities, and mentioned modifying worksheets and other teaching materials. The relative ease with which students with some types of disabilities used electronic information sources such as computerized catalogues and CD-ROMs—compared with print equivalents—was often commented on, substantiating the findings of Mendrinos (1992,1997). Several respondents reported having learned signed English so that it was possible to communicate with deaf students. The need for students to experience success was also realized, as the following qualitative comments demonstrate:

Modify work expectations and break down instruction steps.

Most of our students have intellectual disabilities, and they follow the same program but there are fewer expectations.

Try to match resources with the ability of students;... always strive for a sense of success and achievement.

Guidance to appropriate resources, e.g., a poster might be a more visual interpretation of a topic for that student and allow them to participate in a class activity.

Some respondents did not have the staff or the time to be able to provide for any extra needs, and their comments give cause for concern:

Most of the students we have can cope with the normal method of teaching information skills. However, for our blind student there are frequently times when she misses a lot of what is happening.

No effort is made to cater for these children. Staffing is so limited it is an extreme battle to cope with survival library tasks.

Don't have time to serve the masses, let alone kids with special needs, unfortunately.

Others tried to do something, as the following comment indicates:

Since my position is that of "Cluster Teacher Librarian" (4 school libraries and 600 children per week) I find it extremely difficult to do more than give a little extra time and attention to students with disabilities.

### Findings from the Case Studies

Work in the case study schools also revealed varying approaches to teaching information skills. For students with limited mobility, learning information skills was not necessarily any different from other subject areas. However, students with sensory disabilities, intellectual disabilities, or learning dis-

abilities usually needed some modifications in lesson delivery. A resource room model operated in nine of the 15 schools. In this situation, disabled students would usually have an opportunity to use the library and participate in information skills programs at the same time as the rest of their mainstream class. In these and other schools, students with disabilities might also occasionally visit the library in small groups with their special education teacher, or on an individual basis with their aide.

In some cases the aide would work with the student in the library lesson, modifying material as necessary. Frequently, the school librarian would adapt worksheets and other material to suit individual students' needs, or modify the expectations for individual students. For example, at one primary school, when students worked on dictionary skills, some students might use a less advanced dictionary than others, but perform the same tasks. School librarians realized how important it was that these students experience success.

Worksheets and other materials used by students were collected from the case study school libraries, but school librarians had not evaluated skills learned. Therefore, although it was possible to observe how students were being taught information skills, it was not possible to tell how effective the teaching was other than through the subjective assessments of school librarians and special education teachers.

Information skills were taught as part of the library lesson at all five case study primary schools. Only one school used a CCPT model, and this was introduced for some upper primary classes during the second half of the study. This innovation was achieved through the persistence of the school librarian in seeking timetable changes at some year levels to remove the RFF component of class library time and substitute a CCPT program. The librarians at the other four primary case study schools all stated that RFF was the chief obstacle to the introduction of CCPT.

A curriculum initiative being planned at one primary school reflected the need to consider the impact of information technology on the information skills process, and promised to be successful. The school librarian and the information technology teacher moved the school library and the computer room to a larger joint space, with the full support of the principal. They taught a joint program as a team. This made effective use of the time of two specialist teachers and appeared to have benefits for both; there was a possibility that it might lead to some involvement in CCPT that would include classroom teachers, the information technology teacher, and the school librarian.

In the five large secondary schools (i.e., with an enrollment of 1,000+ students), timetabling and management issues meant that often students did not learn information skills in any planned program, but only received ad hoc instruction from the librarians if their class happened to visit the library. Many secondary students interviewed had learned information skills at

primary school and had transferred these to the use of their secondary school library. Most secondary schools offered orientation and research skills units to Year 7 students, but beyond this, information skills teaching was sporadic.

At one K-12 school, the special education teachers at the senior and junior/middle schools did not give the school librarians the opportunity to teach information skills to disabled students. One of the librarians did exhibit some of the characteristics identified by Montgomery (1991) as being barriers. However, the two other librarians were outgoing and easy to communicate with. But there seemed to be another factor in play here, in that there was a certain amount of "ownership" of the students displayed by the special education staff. It had not occurred to them that the school librarians might be involved in teaching these students information skills; there was a perception that the special education teachers should teach the students everything.

Another example of Montgomery's (1991) argument that personal characteristics affect cooperation was found in one of the case study secondary schools. The school librarian was focused on day-to-day management and seemed to prefer to work in isolation. She mentioned working with only one teacher on collection management, and there was no CCPT. The staff of the support unit at this school said they did not use the library much due to lack of time, but lack of encouragement by the school librarian may have been a factor.

An interesting initiative in a small secondary school demonstrated that team-teaching between special education teacher and school librarian could be effective. This school had a support unit for students with intellectual disability. One of the special education teachers, who had used the library enthusiastically for some time, began to take her class to the library on a regular basis. She worked with her students on information skills, and they learned how to use the online catalogue and to issue and return library items. The school librarian believed that these students could learn the information skills process, provided the process was broken down into many substeps, much as Petrie (1982) recommended. The school librarian and the special education teacher worked on this together and hoped their example would encourage the other special education teachers to bring their classes to the library the following year to try similar approaches. By the end of the study, the school librarian reported that the support unit used the library as much as, if not more than, other faculties in the school.

Some success in teaching information skills was achieved in an independent school with one class of students with intellectual disability. The special education teacher, who realized the importance of information skills, brought this class of 10 students to the library each week. The students took turns in returning and issuing books for their classmates, and reshelving returned items, under the supervision of the school librarian. This gave them confidence and helped their understanding of the arrangement of the library.

The school librarian and the special educator worked together to teach a program of information skills similar to that used with mainstream classes, with some success. The special education teacher also took the class on visits to the public library so that they could practice transferring these skills to a different library. In the following year, this class continued to have a library lesson each week, but without the support of the special education teacher. This arrangement was intended to make the students more independent and also provide some free time for the special education teacher, a familiar scenario. Unless she received help from either a clerical assistant or a senior student at this time, the school librarian found that much of her time was spent in supervising the circulation activity rather than teaching information skills. Despite this, she did manage to teach this class a literature program that focused on the Australian Children's Books of the Year awards and an information skills program that included learning alphabetical order and using encyclopedias and telephone directories.

The study also sought examples of storytelling and related activities in the library that encourage and motivate students to read. One school library had two reading programs based on a buddy system whereby older students read with younger students who had reading difficulties or lacked confidence in reading. Although these programs were not dedicated to students with disabilities, several participated. All the primary school libraries ran literature programs that included storytelling. However, only two librarians in secondary schools included storytelling in their programs.

Twenty-two students with disabilities were interviewed individually, and group interviews were conducted with a further 16. Students interviewed understood how their school library was organized and were able to access its resources. Many had transferred the skills learned to other libraries: either to a public library or from a primary school library to a secondary school library. Some lacked confidence in using public libraries. This was related to the increased complexity of the collections, especially where the nonfiction stock was integrated, so that students had to select from a range of material that included both adult and children's materials. Several said they would only ask for help from a public library staff member with whom they had familiarity. But others had positive experiences. One student, who was a wheelchair user, preferred to use his public library. This was because it was physically accessible, and in his school library there was a mezzanine floor that he could not access unless he was carried there. Other students really enjoyed using their public library and experienced no difficulties. However, most students who used the public library regularly did so because it was a family habit to go to the library.

The special education teachers at three schools had taken groups of students to visit a public library. These visits served a dual purpose: students could practice information skills they had learned in the school library and were also able to practice daily-living and socialization skills they had

learned at school. Surprisingly, none of the school librarians was aware that these visits were taking place until they were brought to their notice through the research project.

### Conclusion

The study showed that many students with disabilities had access to information skills programs, but to varying degrees. In some schools, such as those highlighted in the qualitative data from the survey, where there were staff shortages in the school library, students with disabilities had limited or no access to information skills programs. At the other end of the scale, there were students who had learned information skills at school and had transferred their use to other libraries such as public libraries. Factors contributing to the availability of information skills programs for students with disabilities included the experience and confidence of the school librarian in working with students with disabilities, and also the level of support for a disabled student while in the library, from an aide, special education teacher, or classroom teacher.

Most of the students interviewed were comfortable about the library as a place. Those who used public libraries did so because they found them to be a comfortable environment where the staff were helpful and approachable. A feeling of comfort and ease about using the library is an important first step to gaining information literacy. However, school librarians could actively encourage the use of other libraries in the locality so that students have the opportunity to transfer acquired information skills to another setting.

School librarians who participated in the study were aware of the importance of information literacy for students with disabilities. The teaching of information skills and other related skills was considered to be an important component of their role in the school. Few of the respondents had special education qualifications. One of the case study school librarians was a trained teacher of deaf students, and one had worked in the school's Support Centre for students with disabilities before moving into the librarian position. One of the survey respondents had special education qualifications, and another had previously worked as a special education aide.

Despite what could be considered a lack of expertise, many of the strategies recommended in the literature were used. These were evident from both the case study work and qualitative comments by survey respondents. School librarians who have taught students with disabilities have a good understanding of how to meet their needs in terms of adapting materials and teaching approaches. This ensured the inclusion of a student with a disability, who would be doing the same work as the other students, but either with modified outcomes or perhaps using a different tool. The value of using electronic information sources with this group of students had also been realized. The use of worksheets, the use of computerized catalogues,

and exercises involving electronic information sources often led to cooperative learning and peer tutoring situations.

School librarians were confident about their approach when they had consulted with the special education teacher about the content of information skills programs. Several survey respondents mentioned consulting with the aide who accompanied a student to the library about appropriate modifications to learning materials. These findings support the special education literature, which shows that increased cooperation and communication between classroom teacher and special education teacher is an important factor in the successful placement of a student with a disability in a mainstream class. Future research might focus on the evaluation of learning outcomes of information skills teaching programs for students with disabilities.

Observation in case study schools revealed behaviors on the part of librarians, such as the two examples described above, that gave some support to Montgomery's (1991) theory that cognitive style was related to the adoption of CCPT. Only one school had made any real progress toward introducing a CCPT model for information skills teaching during the four year period of the study. As discussed above, the use of the library lesson for RFF for classroom teachers was identified by participants in the study as a major barrier. Other barriers to the introduction of CCPT corresponded to those identified in the literature: lack of enthusiasm on the part of the special education teachers or the school librarian; and lack of understanding of the importance of information skills by classroom teachers.

The findings of the study supported the view of McGrath (1990) that the efforts of school librarians to introduce CCPT into the curriculum have similarities to the task facing special education teachers in supporting students in mainstream classes. Case study work showed that both of these roles are specialist, and therefore perceived as being different from the role of a classroom teacher, and that success depends to a great degree on personal communication skills and the ability to teach cooperatively with another teacher. The lack of planning time made available to classroom teachers had an impact on the goals of both the school librarian and the special education teachers. Unless classroom teachers understand these specialist roles, they tend to resent time spent on planning processes for CCPT or inclusive curriculum and do not see such planning as part of their role.

The experiences of the study, combined with my experience as both a school librarian and a library educator, lead me to observe that special education teachers have had to adapt to their specialized role over the last 20 years, which corresponds to the period when school librarians have been trying to establish their role. Special education teachers have had to cope with further changes brought about by the mainstreaming and inclusion movements. Many have moved from special schools to mainstream schools, where their role is quite different and they are more isolated in terms of their

expertise, as are school librarians. Thus the recent establishment of learning support centers in some schools that include both library services and special education support services may prove to be a successful innovation that both facilitates greater cooperation between these two areas and enhances their role in the school.

### Notes

- 1 This article expands on a theme that I first addressed in an article published in the British journal *School Librarian* in 2001.
- 2 I was told of several such situations in Australian schools in informal discussions at Australian conferences during 1998-2000.
- 3 The questionnaires may be obtained from me.

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