

How Do Dyslexic Nursing Students Cope with Clinical Practice Placements? The Impact of the Dyslexic Profile on the Clinical Practice of Dyslexic Nursing Students: Pedagogical Issues and Considerations

Geraldine A. Price¹

School of Education, University of Southampton

Anne Gale

School of Nursing and Midwifery, University of Southampton

The safety of dyslexic nurses, and whether they are a danger to their patients, has been widely discussed. This empirical study sought to discover the impact of the dyslexic profile on clinical practice for nursing students. Two focus groups of third-year nursing students in higher education were set up: a control group and a dyslexic group.

The findings were congruent with the literature, in that students provided evidence of literacy difficulties, memory problems, lack of automaticity skills, issues of self-esteem as well as specific skills deficits. While cognitive processing problems emerged, the findings also pointed to some strategies the students were using to compensate, as well as a significant underpinning ethos of ensuring patient safety. Finally, evidence of apparent disability discrimination, usually resulting from ignorance by nursing mentors who knew little or nothing about dyslexia, was also apparent.

Pedagogical considerations for the support of dyslexic students in the academic setting have been well researched. However, it is apparent from this study that such methods do not always transfer to the clinical setting. The findings of the study have implications for pedagogy and support in the work setting for dyslexic nursing students.

Key Words: Dyslexia, Cognitive Deficit, Nursing Practice, Clinical Practice, Anxiety, Self-Esteem, Dyslexia in the Workplace, Mentor Support, Automaticity, Language Processing.

“Dyslexic nurses give pills by color” (Ellis, 2001, p. 5)

“Council to probe threat to public from dyslexia” (Munroe, 2001, p. 11)

Headlines capturing the general public's fear concerning the safety of having dyslexic nurses on the ward demonstrate that there are genuine worries about employing dyslexic adults to care for the sick and those with acute medical problems. Often these media debates are based upon a little knowledge, which is known to be a dangerous thing. However, since the issue has been placed in the public forum, it behoves the research community to examine the matter more thoroughly.

1. Please address correspondence to Dr. G. A. Price, School of Education, University of Southampton, Highfield, Southampton SO17 1BJ, England. Email: gap@soton.ac.uk

Definitions of dyslexia are problematic because of a general lack of agreement. A working/operational definition of dyslexia incorporates the elements of the dyslexic profile, which are used in this paper:

Dyslexia is a processing difference which is experienced by people of all ages, often characterised by difficulties in literacy. It can affect other cognitive areas such as memory, speed of processing, time management, co-ordination and directional aspects. (Reid, 2003, p. 5)

Adult dyslexia is a term that is more increasingly being used (Fitzgibbon & O'Connor, 2002; Kirk, McLoughlin, & Reid, 2001; McLoughlin, 2004; Morgan & Klein, 2000). However, the impact of dyslexia upon the workplace is still to be analyzed. Similarly, in the current context, studies are needed to determine the prevalence of dyslexia in the nursing community. Current estimates suggest that 3–10% of the general population may be affected by the condition (Snowling, 2000). The suggestion that the adult dyslexic is simply a “dyslexic child grown up” still exists (Rice & Brooks, 2004, p. 14; see also, Fitzgibbon & O'Connor, 2002; Patton & Polloway, 1992). Studies on the experiences of dyslexic adults in higher education and in the workplace have demonstrated that although greater understanding is needed for dyslexic adults to gain parity, their contribution is valued. While in adulthood, diagnosis and identification may be regarded as a cathartic experience that can lead to a new understanding of self and a reframing of negative images experienced in childhood (Gerber, Ginsberg, & Reiff, 1992), nevertheless, dyslexia remains an enigma in the workplace context (McLoughlin, 2004).

The main purpose of this exploratory study was to analyze and interpret the experiences of students in clinical settings. It was speculated that the dyslexic students would experience greater and more persistent difficulties than their nondyslexic counterparts on the hospital ward with duties that put pressure upon working memory capacity and tasks requiring functional literacy. It is not the intention of this article to examine the nursing curriculum but to look at the impact of dyslexia in the workplace, and the ability of students to develop coping strategies during clinical practice. This leads to questions about the ways in which dyslexic nursing students can be better supported in the teaching and learning environment of clinical practice and may lead to the development of a pedagogical framework that dyslexia support tutors could use to provide additional support. Thus, a synergy between the academic setting and the clinical practice learning environment may be achieved.

Studies have examined the institutional infrastructure of support for learning difficulties and academic problems, dyslexic students' perceptions of the support received in the academic setting, and the effect of self-esteem upon learning (Palfreman-Kay, 2001; Riddick, Sterling, Farmer, & Morgan, 1999). There is a paucity of research into the realities of students with dyslexia learning nursing skills, however. Understanding not only course demands but also the needs of dyslexic nursing students should be viewed in both the academic and clinical settings.

A review of the approaches to supporting academic skills in higher education (HE) for dyslexic and nondyslexic students has demonstrated the variety of ways in which institutions have responded to widening participation, and the creativity that university staff employ to support the curricular needs of dyslexic students (Farmer,

Riddick, Sterling, & Simpson, 2001; Singleton & Aisbitt, 2001). The notion of a continuum of support for developing academic skills is important in analyzing the type of support offered. The provision of support embedded in the curriculum is the model regarded as the most effective for developing subject knowledge and inculcation into the academic community. At the opposite end of the continuum of support is the “bolt-on” model whereby students receive academic support from teaching and learning specialists, who are often geographically located at the heart of the institution in places like the library (Tinklin, Riddell, & Dilson, 2004). Specialist dyslexia support for academic skills also reflects a diversity of learning and teaching models. It should be noted that specialist tutorial support and equipment provision only became a reality for student nurses in the U.K. 2002 when the Disability Discrimination Act (DDA) (HMSO, 1995) was extended to education (Special Educational Needs and Disability Act – SENDA) (HMSO, 2003), and the Department of Health was required to meet the needs of students with disabilities. Thus, academic support for this group of students now seems to be established across nursing schools in the U.K. (Wright & Eathorne, 2003). However, whereas academic needs are being catered for in some way, the clinical practice aspect of nurse education has been overlooked.

There is limited research on the impact dyslexia has on nursing practice, and there is even less to suggest what schools of nursing should do to address needs in this area (Sheehan & Nganasurian, 1994; Shellenbarger, 1993; Taylor, 2003; Wright & Eathorne, 2003). Wright (2000) recommended that studies be undertaken to illuminate how dyslexia might have an impact upon nursing care as a way to a better understanding of the support needs of this group of practitioners. Good advice may be found with regard to meeting the needs of dyslexic employees (Bartlett & Moody, 2000; Fitzgibbon & O’Connor, 2002; Morgan & Klein, 2000; Reid & Kirk, 2001). However, much of this information is general in nature. For example, it includes guidance on how to be effective in an office environment; how to be efficient when carrying out filing duties; and the importance of utilizing learning strategies (Fitzgibbon & O’Connor, 2002). For employers, in turn, there is information on how to provide a dyslexia-friendly workplace (British-Dyslexia Association; BDA, 2005). The significant omission from this literature is the issue of competence and safety in medical environments. A nurse has the responsibility to care for people and is often responsible for life and death decisions. Clearly, all nurses are required to be competent and to ensure that the patient’s safety is maintained (Nursing and Midwifery Council, 2002).

The Dyslexic Profile

Research into the dyslexic condition is too detailed to mention in this article. There is evidence that phonological difficulties and problems with reading and spelling spill over into adulthood, despite the many compensatory measures adopted (Herrington, 2001; McLoughlin, 2004; Morgan & Klein, 2000; Price, 2003). While the lower-order skill aspect of literacy, in terms of decoding and encoding, may have been mastered by many adult dyslexic people, often the demands of the workplace are such that they place more emphasis on higher-order literacy functioning. Indeed, it is the notion of reading performance and *functioning in context* that is significant. Everatt (1997) asserted that the “reading ability of the dyslexic individual is fragile” (p. 19). This fragility, rather than literacy difficulties per se, was seen to have a profound effect

upon the experiences of the dyslexic student nurses in this study. Everatt speculated that the vocabulary of dyslexic people is more restricted and that this has an impact upon comprehension skills (Everatt, 1997; Hanley, 1997). Thus, it is the speed at which adult dyslexic students comprehend that is fundamental to their context. Difficulties with spelling are a well-recognized feature of dyslexia and have been attributed to persistent problems with sequencing and underlying phonological difficulties (Frith, Landerl, & Frith, 1995; Plaza & Guitton, 1997; Snowling, 2000; Stanovich & Siegel, 1994). Once again, it is the functionality of spelling competence that is more important on the wards in a hospital.

Nursing practice requires not only functional competence in literacy but also a reliance upon automaticity in the face of a busy ward. If, as Beaton, McDougall, and Singleton's (1997) findings suggest, reading performance is affected by noise interference, for example, this difficulty is more marked if the reader has dyslexia (Beaton et al., 1997). Thus, the combination of noise interference and the significance of the context places greater demands upon students who may not have been taught compensatory strategies that are appropriate to the workplace. Indeed, many of the solutions that are advocated for academic circumstances do not transfer to clinical practice.

The difference between ability and performance is something that many individuals with dyslexia describe (Morgan & Klein, 2000; Palfreman-Kay, 2001; Reid, 2003). Performance in context is often reliant upon the demands placed upon, and the management of, cognitive infrastructure—most notably the ability to multitask (Just & Carpenter, 1992); language processing, working memory, and speed of processing (Fawcett, 2001; Gathercole & Baddeley, 1993; Rack, 1997). Therefore, the ability to retain and retrieve information at speed is a key feature of working on the ward in a busy hospital.

What Does Clinical Practice Involve?

Health care delivery is complex, and care management is dictated mainly by the care needed for specific client groups. As a result, some clinical settings have much more rigid routines than others. This is coupled with individual and varied management styles of the wards. Many wards are busy and hectic, and decisions are required instantaneously. In some wards patients are admitted at all times during the day, requiring handover procedures. Nurses are required to administer medication according to the instructions and information recorded on patients' charts.

Student nurses are assessed by qualified and experienced nurses on each clinical placement to which they are allocated. The current practice document includes a list of tasks related to a specific setting, and the assessor or his/her deputy is expected to observe the tasks being completed and deem the student to be competent at performing them. There are also formally identified core skills. Students complete nine clinical placements in the three years of their program. Most of the placements last between six and eight weeks.

Occupational Competence and the Special Educational Needs and Disability Act (HMSO, 2003) (SENDA): Conflicts and Dilemmas for Nurse Education

SENDA (HMSO, 2003) demands that "reasonable adjustments" are made to ensure that individuals with disabilities are not placed at a substantial disadvantage in comparison with a person who does not have disabilities. This is particularly

problematic in the clinical setting where patient safety is of paramount importance. As mentioned, the types of “reasonable adjustments” that are given to dyslexic students in the academic setting are well recorded. However, these same adjustments do not transfer readily to the clinical setting. For example, the provision of extra time in situations that put the working memory under stress cannot be justified when dealing with the emergency of a dying patient. There is also the issue of the “reasonableness” of the adjustment and the credibility of the advice given. This can result in a tension in the nursing context between patient safety and a desire to meet the terms of SENDA.

One approach to inclusion is to ensure that the environment is changed to meet the needs of the practitioner with disabilities. This principle was embraced recently when a disability office at a university suggested that the dyslexic student not read drug charts. However, such a recommendation demonstrates a lack of understanding of the demands of this particular workplace and the professional functioning within the parameters of patient care. It is impossible to isolate this one duty, which is such an integral part of medical care. Thus, the demands of the workplace in all its aspects must be taken into consideration when deciding what is a “reasonable adjustment.”

One feature of the Act is that responsible bodies should recommend that people disclose their disabilities. The underlying intention here is that specific arrangements can be made to meet the requirements of the person with a disability. This Act will challenge much of the difficulties that student nurses encounter with regard to nursing education and practice. The issues surrounding student nurses, or, indeed, qualified nurses disclosing their dyslexia, may be unhelpful in settings where there is little or no knowledge of the implications of dyslexia, nor an understanding of how to help.

METHOD AND PROCEDURES

The participants in this pilot study consisted of 20 female undergraduate students on a three-year nursing course at a U.K. university, in the adult nursing branch. The students were divided into two groups. A control group consisted of 10 students who had no history of dyslexia. These students did not provide the department with psychological reports, nor did they make any declaration about dyslexia during the admissions process. The experimental group consisted of 10 students with dyslexia, who had been identified and assessed through the university procedures.

Data Collection

Focus group interviews were chosen for the collection of the data. The advantages of focus group interviews are many and well recorded (Stewart & Shamdasani, 1990), and include the following:

1. The data can be obtained in such a way that the interviewer can interact with the respondents. This means that clarification, probing and follow-up questions can be used flexibly and adapted to immediate responses and relayed experiences (Cohen & Manion, 1994).
2. The open format allows for group respondents to build up information as they react to comments made by other members of the group.

In choosing this format, the researchers felt that the dyslexic students might benefit from the experience of hearing the worries of fellow students as well as sharing

how they addressed these difficulties. Each intake of students in the School of Nursing and Midwifery numbers about 700. In such a large cohort, students with dyslexia may experience feelings of isolation. It was reasoned that the benefits of meeting other students with dyslexia could provide them not only with support for some of the issues they face, but perhaps in the future could form the nucleus of a support group.

A decision was made to video-record rather than tape-record the interviews because it would be possible to analyze nonverbal language interaction and responses within the group discussions. All the ethical committee regulations were adhered to, and full written consent was obtained before the focus group interviews took place. The dyslexic group and the control group were video-taped separately in order to protect the vulnerability of the dyslexic group.

The questions (see Table 1) designed as an interview guide were based upon current theoretical models of dyslexia and adult learning theory, and were devised to explore reading, writing, spelling, working and short-term memory, speed of processing, language retrieval, motor skills and perceptual difficulties. The questions were embedded in the nursing practice that involved one or more of these skills or focused on a situation that might create difficulties for the student with dyslexia.

Table 1
Interview Questions and Domains

Question	Domains Explored
Can you identify any problems you have with nursing documentation?	Knowledge, behaviors, skills, attitudes, feelings and functional literacy.
Particularly, can we explore issues about reading and learning drug names/medical terminology.	Knowledge, behaviors, skills, reading, spelling, working and sequential short-term memory, and speed of processing.
What experiences have you had in writing nursing documentation and what issues bother you?	Knowledge, behaviors, skills, feelings, reading, note-taking and making, speed of processing, language retrieval, writing and spelling.
How do you cope with nursing handovers? What are the issues for you?	Attitudes, feelings and behaviors.
Do you have problems with learning procedures; for example, dressing techniques?	Knowledge, behaviors, skills, working and short-term memory functions, speed of processing, motor skills, and automatization.
What about using and understanding the various charts used on the wards?	Knowledge, behaviors, skills, speed of processing, working memory functioning, sequencing skills, functional literacy, and automatization.

Analysis of the data was based upon theories of adult learning (Jarvis, 1988). Specifically, the analysis was an inductive exploration of the knowledge, behaviors, skills, attitudes, and feelings in relation to learning. It sought to uncover significant patterns or changes that became evident within and between the student groups.

Jarvis (1988) suggested that a course of learning must affect all of these domains, and this framework was also linked to the curriculum outcomes of the nursing program. The questions and the domains tested are listed in Table 1.

The focus group interviews were conducted upon focused group techniques (Cohen & Manion, 1994). That is, the researcher asked the initial question, which explored an aspect of practice, and the students would share their subjective thoughts and experiences of their practice experiences. The researcher would on occasions seek clarification of what the student had said. This focused technique relies on “the prior analysis by the researcher of the situation in which subjects have been involved” (Cohen & Manion, 1994, p. 326).

Procedure

Students were given an open invitation to participate in the pilot study. Many of the control group members were recruited by a lecturer with access to the third-year students and by follow-up letters. Two letters were created specifically for named students drawn from the school’s database: one was sent to a convenience sample of students (the control group) and the other to identified, dyslexic students. The letters indicated that the study would explore issues of learning nursing in clinical settings. The letters were identical, other than that one specified dyslexia and was only sent to students with dyslexia.

Recruitment to the dyslexic group was slow. This might partly have been due to the fact that the dyslexic group’s letter did not indicate that there were discrete discussion groups, and that the dyslexic students would not be expected to bare their souls in the presence of their nondyslexic peers. Studies of dyslexic students have highlighted such problems as poor self-concept (Humphrey, 2002), feelings of stigmatization (Riddick, 2000) and negative experiences of education (McKissock, 2001). Given this research evidence, it was clear that to expect students with dyslexia to discuss the issues of clinical practice with students without dyslexia would be both ethically and morally unacceptable. Recruitment ceased when sufficient dyslexic and nondyslexic volunteers had agreed to participate.

The difficulty of getting nursing students together to conduct focus group interviews was exacerbated by the structure of occupational courses. That is, students spend varying amounts of time on campus for formal academic input and periods in clinical practice. The latter consists, in the main, of shift work. Students’ placements are spread over a number of health authorities and national health trusts in the region. This pilot study was conducted to ascertain whether a larger study needed to be developed.

Analysis

Phenomenological studies involve the direct experiences of individuals to be taken at face value (Cohen & Manion, 1994). The significant statements made by the students during the interviews were taken at face value, and from these the researcher formulated *a posteriori* meanings, which were clustered into themes (Holloway & Wheeler, 1996). The categories created were therefore interpretive but were based on rationality in that they were congruent with the theory regarding the impact of dyslexia on learning, emotions, and performance. No software was utilized in the data analysis.

RESULTS

While the findings were divided between two categories, namely, the similarities and the differences expressed by the two groups, for the purpose of this article, the experiences of the dyslexic students is the main focus. Nevertheless, a number of generic outcomes of shared experiences emerged from both the control and the dyslexic group.

Generic Issues

The key issues for *all* the students, with or without dyslexia, were:

- Understanding the medical and pharmacological jargon, language, and abbreviations of each ward/hospital setting
- Understanding the rules and the organizational structure of each setting
- Coping with frequent changes of work placement
- The variability of the quality of mentorship
- Professional inconsistencies

Despite the commonalities across the two groups, it must be noted that the dyslexic group's comments regarding these issues were generally expressed more forcefully and with greater emotion.

“Don't you find that you have to prove to them that although you're dyslexic you're perfectly capable?”

The impact of these issues on their learning and performance appeared to have affected these students over a greater period of their placement than the control group.

The Dyslexic Experience

Differential experiences emerged from the analysis of the data from the two groups.

The key themes for the cohort of students with dyslexia were (Gale, 2004):

- Aspects of literacy deficits
- Organizational skill problems
- Disclosure of dyslexia, issues of confidentiality, self-esteem and anxiety
- Safety issues
- Insights into self-performance
- Compensatory strategies
- The dysfunctional student

These differences will now be explored in greater detail because they shed light upon the impact of the dyslexic profile on functioning in the workplace.

Literacy deficits. Not unexpectedly, the dyslexic group expressed concerns about literacy on the ward in the form of word recognition, spelling mastery, and time taken to retrieve and use language effectively. Often these concerns were related to “functional” aspects of literacy and the speed at which nurses are expected to perform literacy-related tasks in the process of patient care. One student stated that she had difficulty getting the technical names “into her head.” Another commented that

“I write more; it takes me so long to get to the point, I am unable to spell or remember the word.”

However, this group of students also made positive comments such as:

“Once I've done it about ten times, I know it.”

Another student stated that by the end of the placement, she was *“just beginning to pick up the drugs, more or less.”*

The group acknowledged that learning drugs and medical terminology was a major task. By comparison, while the control group found mastery of new language a challenge, they made no comments about spelling or having particular difficulty with this learning. The complexity of orthographically similar words added to this challenge. This is compounded by medical and nursing staffs’ habitual use of jargon and abbreviations; for example, CABG (pronounced cabbage) is an abbreviation for coronary artery bypass graft. Added to this shorthand use of language in the working context, drugs have both a chemical name and a manufacturer’s name, meaning that each drug has at least two names. This presents a double overlay of language which has to be processed.

Organizational skill problems. As stated earlier, health care delivery is complex and lacks the security of uniform management structures. Both student groups found it difficult to master this variability of work ethos. This affected their ability to fit in and feel part of the team. Differences in ward layouts, as well as variations in hospital organization, made this even more problematic. The dyslexic group reported many incidences of individual professional variation and preferences for modes of working. All learning is so dominated by these idiosyncrasies that this affects the students’ day-to-day performance.

The process of “handover” presented significant challenges to the dyslexic students’ ability to set priorities and manage their workloads. Handover involves listening to a verbal report on up to 30 patients, outlining name, age, diagnosis, current treatment plans, a condition report, and an outline of other changes that need to be achieved during the shift.

One student stated:

“I find it really difficult to keep up with somebody who is telling me what the patient has; it is really difficult to keep up with everything they are saying and think about what’s important and everything you have to do during the shift.”

The understanding and completion of varied charts used on the wards presented challenges to both groups. The control group related their problems with charts simply to the professional and personal variation between placements and individual preferences, stating comments like

“I just picked it up as I went along.”

They acknowledged that these problems would persist, but without posing a major difficulty for them. The dyslexic group, in contrast, briefly mentioned these personal and professional issues, but focused mainly on the practicalities of having the skills to document their findings. The charts vary in complexity and detail, but most require completion of boxes or charting in graphical form. Comments made to support this included:

“following the lines is difficult,”

“dots and ticks have no meaning,” and

“the spacing is cramped.”

One student said,

“I find it hard to find the actual line to write on.”

Throughout their descriptions of chart documentation, the dyslexic students reverted to a concrete mode of thought, using their fingers to describe how they managed to complete the charts. Another summed it up as follows:

“Chart keeping, it is a nightmare but we get there.”

Answering the telephone was another issue mentioned only by the dyslexic group. This was a topic discussed only in the first person and was considered as a difficulty encountered by *all* the dyslexic students. Understanding the language, coping with strong accents, significant background noise, lack of nonverbal cues, inability to take notes at speed and remembering numbers or instructions, were all mentioned as other significant problems. The strategies to deal with this issue were varied. Some managed these tasks better than others, and it was clear that managing the telephone remained a significant problem for this group of students.

Issues of disclosure of dyslexia. Currently no guidance is provided from the School of Nursing and Midwifery as to whether or not students with dyslexia should disclose their disability. In the sample group, all but one student disclosed her dyslexia on every placement. The underpinning ethos appeared to be positive because this enabled students to ask for help, to seek advice regarding spelling difficulties, and to check that they had completed all the tasks required of them. It provided the means to help manage workload in small doses. One student described the hurt this declaration meant for her:

“In every placement I’ve got to go in, I’ve got to tell them I’m dyslexic . . . I feel like I’ve got to be really hard, I’ve got to be strong. I can’t let this ward get to me, I’ve got to battle through this, I’ve got to finish and qualify, it feels like this huge humiliation.”

The research design did not set out to measure self-esteem and anxiety. However, self-esteem and raised anxiety levels were apparent when the videotapes were analyzed, both from individual commentary and from body language. The dyslexic group’s responses often demonstrated an egocentric conceptualization of the situation, whereas the control group’s were externalized to the system. This is best illustrated by some of the following comments made by the students with dyslexia:

“I feel silly.”

“I ask, regardless of what people think.”

“You have to keep apologizing.”

“I don’t really care if I am an annoying student.”

“I hope when qualified they will understand me.”

“If you tell people, they pity you; if you don’t tell, they think you are stupid.”

“She would check every time. I was never trusted again.”

Clearly, self-esteem becomes an issue at the time of declaration of dyslexia. Although disclosure was generally seen in a positive light, the responses these students got from their mentors at other times were much less positive. Having to keep asking for information and guidance, despite being viewed as important, did not come easily to these students, especially when the response from the mentors was negative. Another student stated that she felt *“really stupid”* having to stop staff and ask them to repeat information. Such responses suggest poor self-esteem.

Coupled with the issue of low self-esteem is the lack of confidence linked with anxiety when completing tasks. One student stated:

“Don’t you find with dyslexia that you don’t just check it once; you check it about five times?”

Another said,

“I make sure I do it right.”

This highlights the dyslexic students’ constant worry about the safety of the patient and the impact of the dyslexic profile.

Safety issues. Another important difference between the two student groups surrounds issues of safety when caring for people. The control group never mentioned the word safety or even implied that this was important to them. However, the dyslexic group identified that being safe was very important to them, and they described some of the practices they employed. One student stated:

“If I am not sure, if I cannot find out by myself, I have to keep going and asking; I just want to make sure I’m not doing anything wrong.”

Another made notes throughout the day to keep control of her work, as well as support her struggle to remember all her responsibilities. Another knew she sometimes needed to check her understanding of patient details. She then described the potential to get this wrong, commenting that this *“is quite worrying.”* One student’s rueful comment summed up their dilemma:

“Don’t you find that you have to prove to them that although you’re dyslexic you’re perfectly capable?”

Insights into self-performance. The dyslexic group made constant reference to their self-awareness of their strengths and weaknesses. Underpinning the outline of nursing tasks were descriptions of the strategies they employed to compensate for their deficits, together with their self-management of these difficulties. For example, one student, describing the problems with administering drugs, said:

“I keep looking at the name and looking in the trolley until I find it, then I compare the spelling . . . you don’t just check it once; you check it about five times.”

This reading, rereading and constant comparison was used to verify the names of the drug she was about to give a patient. This was clearly a method she employed to compensate for her weak literacy skills. She further admitted:

“if ever I am in any doubt, I ask someone to check it, regardless of what they might think.”

Compensatory strategies. Alongside the dyslexic students’ descriptions of the maintenance of patient safety and self-insights, they detailed the strategies they employed to help manage their organizational, memory, and literacy difficulties. Some have already been outlined, others included the use of colored pens and colored stickers to assist in the management of diverse tasks, ensuring that important details would not be forgotten. Some sought to manage their workloads by ensuring their mentor divided up their work responsibilities into manageable chunks. This enabled the student to pace the work and complete all the necessary tasks.

Prereading prior to the placement was another strategy utilized by some of the group members. When students needed to take notes, some of them arrived early for the shift to make a note of names and diagnoses so that they did not have so much to record at the handover. Others described keeping constant memory prompts—identified in code and abbreviated form so that they knew what they had

to do. Many of these strategies were not described in detail, and require further scrutiny. Certainly, as well as creatively managing their work, these students appeared to be working much harder than their peer group to achieve the same end. One student stated that:

“She worked twice as hard as the others.”

The dysfunctional student. One student in the dyslexic group displayed strategies in her management of nursing practice that could be construed as cause for concern. First, this student did not disclose her dyslexia to her mentors. Second, she described strategies she had used that enabled her to avoid doing tasks that she knew would be difficult for her. During the group discussion about learning drug names, she outlined the following:

“I don’t know if this is an avoidance tactic but I haven’t really had anything to do with drugs and I wonder what you guys are talking about. That’s one of my fears. What if you give someone the wrong drug? You know what you do, you look at something and you presume what it says, you look at the word, oh it says that and someone else says ‘well no actually it doesn’t say that at all.’ If you do that with a drug you’ve made a big mistake.”

This signifies a distinct lack of experience and knowledge for a student almost halfway through the final year of study. On one level, the student had some insight into her avoidance tactics. However, this was accompanied by a significant lack of understanding that, once qualified, she would be required to do these tasks. The reason behind this lack of experience appears to be a fear of harming the patient. In order to avoid such harm, her desire to be safe overwhelmed her need to gain appropriate and important nursing experience. If she were to complete the rest of the course without being assessed on these tasks, she would have a deficit of her skill level that is incompatible with that of a qualified nurse.

DISCUSSION

Issues for Nurse Educators

The overriding consideration in nurse education in clinical practice has to be danger versus safety. Whatever learning model emerges to meet the specific needs of dyslexic nursing students, this principle must be given due consideration. Herein lies both the conflict and the challenge. It is evident from this study that the dyslexic condition should not present a barrier to entry into the nursing profession. However, careful analysis of the individual’s strengths and weaknesses measured against the specific job requirements (Morgan & Klein, 2000) could become not merely a futile labeling experience but a means of establishing the suitability of the individual to the rigors of clinical practice.

It is not suggested that radical changes are necessary in the assessment and identification process for those wishing to enter the nursing profession. This would be discriminatory and run contrary to the spirit of SENDA. Rather, a sensitive analysis of the diagnostic features of cognitive profiling could be used to great effect. Thus, knowledge of an individual’s cognitive strengths and weaknesses would have to be carefully interpreted by trained professionals who have knowledge of the demands of working on a busy ward and the cognitive architecture that is needed to perform with safety in this context (McLoughlin, Leather, & Stringer, 2002). Such assessment would require agreement on clear baseline performance levels in areas such as speed

of information processing, working memory capacity, ability to multitask in extreme conditions, and functional literacy—that is, a fair assessment of the ability to perform in the workplace (Kirk et al., 2001; McLoughlin et al., 2002; Morgan & Klein, 2000; Reid & Kirk, 2001).

Baseline assessments have become a statutory part of educational practice in primary schools. It is vital that the principles and process of this approach for adults in employment draw upon the strengths of such practice that are *appropriate to the adult* employee/trainee. Thus, further study is necessary to produce procedures that will ensure inclusion and equality of opportunity, echoing Gerber et al.'s (1992) “goodness of fit” (p. 20).

Rethinking Compensatory Strategy Instruction

Organizational difficulties are, in a sense, the overarching problem for the dyslexic student nurses and affect every aspect of performance in clinical practice. As reflected here, attempts were made by most of the students to rectify and bypass problems in memory and organization at all levels. They need to be able to make strategic decisions in planning and organization to ensure greater efficiency and effectiveness (Case, Mamlin, Harris, & Graham, 1995). Cognitive strategy instruction (bringing the thinking skills to the surface) (Ellis, 1993) requires not only a deeper understanding of the needs of the dyslexic learners but also a clear knowledge of what they will encounter in clinical practice.

Many dyslexic adults are able to achieve professional success because they have developed, either by intuition or by education, strategies for coping—what Gerber called “learned creativity” (Gerber et al., 1992). Equally, what this study has highlighted is that generalizing a strategy may not always ensure transfer to this particular context. Some of the creative solutions that have been advocated in the educational setting do not shift effectively to clinical practice (Heaton & Mitchell, 2001):

- Providing extra time to perform tasks
- Using a tape recorder to support weak auditory memory (ethical issues in patient care)
- Using a word processor to make notes (not always possible when an emergency patient is being admitted)
- Problems of patient confidentiality that would preclude nonmedical support for the student being appropriate

Supporting Literacy Difficulties

The blossoming of inclusive systems within a widening participation framework has resulted in the development of specialist provision for the support of dyslexic students in HE (Department for Education and Skills; DfES, 2003; Higher Education Council for England; HEFCE, 1998). The type of support offered and approaches to literacy support are varied (Hunter-Carsch & Herrington, 2001). A pedagogy that is embedded in the student’s coursework, providing “situated practice,” is suggested (Kelly, Soundranayagam, & Grief, 2004, p. 21). This approach is based upon cognitive strategy instruction and, to meet the specific literacy demands of nursing students, the provision of a morphological approach to functional literacy issues.

The following eight components could provide the students with skills that would increase their functional literacy.

1. A morphological approach to the development of word recognition skills

2. Knowledge of the rules of syllabification
3. The development of *critical* listening skills
4. Practice in “reading” complex charts
5. Knowledge of abbreviations and medical jargon that will be encountered
6. A toolkit of note-making strategies
7. Development of individual memory strategies
8. Speed practice in all these components

The medical language that students encounter was seen in this study to challenge their word recognition and listening skills. Therefore, it is important that new technical vocabulary is introduced in a multisensory manner so that the students can hear as well as see the words that will be used frequently by doctors, consultants and nurses on the wards. New terminology can be introduced through the medium of the audio tape and word cards or by “talking” worksheets on the computer. Such an approach to literacy development entails closer liaison between dyslexia tutors and nurse educators. The development of a guide to medical and pharmacological language would require considerable investment in both time and money. This guide would best be developed as an interactive CD ROM as this would permit multisensory media to be utilized and would, therefore, be more user friendly, and especially be of benefit for individuals with dyslexia (Mortimer, 2003).

Mentoring and the Apprenticeship Model

Preceptorship—apprenticeship in the clinical setting, whereby an experienced clinical nurse “acts as a role model” (Quinn, 1991, p. 40)—is the predominant model that the students experienced. The system encourages experiential learning and a problem-solving approach to the development of professional skills. Within this system, the students are assessed while carrying out duties on the ward. This study has raised the issue of the quality of the mentoring. Thus, commentary by the students exposed their vulnerability within the mentoring system, in part because of the variability of the quality of the mentoring (Duffy, 2004).

The study also uncovered evidence of disability discrimination, usually resulting from ignorance by individuals who knew little or nothing about the impact dyslexia has on work performance. Comments about lack of trust, feelings of stupidity, and how the declaration was received provide evidence of this. Nevertheless, declaring dyslexia to a mentor was important to the students; they wanted the mentors to know about their needs. However, the comments also illustrate that understanding of this declaration is variable and not always positively received. The mentors would, therefore, benefit from information and advice about managing disclosure from students. Furthermore, the mentors need to know about their professional responsibility with regard to the limitations of confidentiality with regard to this type personal information. Mentors would benefit from clear guidance on which details of this personal information can be discussed with other acceptable members of the staff so that support and help for students’ learning is provided appropriately.

Negative comments, thoughtless remarks, or public embarrassment were sometimes used by mentors when teaching and supervising students. This is in clear contradiction of an educational ethos that should value and respect learners. Empathetic understanding from the teacher enhances the ability to learn, and learning is made less difficult for students when judgmental attitudes and critical comments are avoid-

ed (Rogers, 1988). Dyslexic adults are very conscious of the need to repeat their questions because of weak memory skills. Many feel embarrassed by such repetitions (McLoughlin et al., 2002). Therefore, when they are belittled and made to feel “stupid” by comments from their mentors, it is not surprising that self-esteem and confidence are affected.

Disability awareness sessions and information about dyslexia could help address this. Such training is probably best located within a mentorship program. Disability awareness is a requirement for all supervisors of nurse learners (Nursing and Midwifery Council, 2002). The subject must be addressed thoroughly and robustly, otherwise the problem will persist, and students with dyslexia may continue to suffer discrimination (McLoughlin et al., 2002). Furthermore, training should address the problem of “learned helplessness” that can be induced in people when they have been informed that an individual has dyslexia and are ignorant as to what they should do (Kerr, 2002).

The Learning and Teaching Environment: Access for the Dyslexic Adult in Clinical Practice Contexts

It is important to respect the individuality of the learner and to differentiate the learning environment to meet the needs of different learning and cognitive styles (Morgan & Klein, 2000; Reid, 2003). Students in this study found that a valuable means of learning was the mentors’ use of demonstration and role modeling. Again, the difference between the two groups was that the preprinted information that outlined the necessary techniques and processes was, generally, not helpful for the dyslexic students. Instead, these students relied more on demonstrations, especially in relation to mastering practical procedures. Therefore, repeatedly, they would request to see a given task demonstrated (Townend & Turner, 2000, p. 289).

Clearly, in the interests of patient safety, it would be better if students could practice nursing skills before their exposure to the wards. With the development of interactive and virtual learning environments such an objective could be met (Gobbi et al., 2004). That is, “virtual” patients can now be programmed to simulate complex needs and care.

The teaching of technical terminology is another aspect that needs consideration. Both student groups discussed the complexity of the language used in health care settings, and the problems they encountered learning it. While the dyslexic group clearly found this area more difficult than did their typical peers, nevertheless, both groups struggled. In some settings, a ward induction package included, among other things, a glossary of words and abbreviations commonly used in that setting. Such a resource was of significant help, giving students some reference material as well as an aid to their learning. The provision of this type of resource in all settings would help all students learn and orient themselves to new settings.

Peer support is recognized as a useful method of supporting students (Hunter-Carsch & Herrington, 2001; McNeil, 1995). The establishment of self-help groups could be encouraged. A database of dyslexic nursing staff who are willing to provide buddy support for students with dyslexia (Morgan & Klein, 2000) could be set up in a number of ways. First, the students who participated in this study have tried out different strategies and developed a sense of what works. They are ideally situated to share this knowledge with future nursing students. Second, a few of the qualified nurses in the mentorship program may have dyslexia and may be willing to support students.

This study illustrated the importance of gathering more evidence to gain insight into the experiences of dyslexic nursing students in clinical practice. Only with such insight can nurse educators ensure that the two learning environments—the academic and clinical settings—provide an educational experience to promote a safe and inclusive workforce.

Geraldine A. Price is a researcher and advanced teacher trainer in the field of SpLD at the School of Education, University of Southampton. She works with teachers in schools and colleges to develop inclusive learning environments and to develop professional assessors in the educational field. The focus of her inquiries is related to the impact of the cognitive profile upon the writing process and clinical practice. **Anne Gale** is a lecturer in the School of Nursing and Midwifery at the University of Southampton. As well as lecturing in nursing she has developed an interest in supporting nursing students with dyslexia. The main focus of this work surrounds nursing staff with dyslexia, seeking to improve the education and support for these individuals in clinical settings.

REFERENCES

- Bartlett, D., & Moody, S. (2000). *Dyslexia in the workplace*. London: Whurr Publishers.
- Beaton, A., McDougall, S., & Singleton, C. H. (1997). Humpty Dumpty grows up? Diagnosing dyslexia in adulthood. *Journal of Research in Reading*, 20(1), 1–6.
- British Dyslexia Association (BDA). (2005). *An employers' guide to dyslexia*. Somerset: Author.
- Case, L. P., Mamlin, N., Harris, K. R., & Graham, S. (1995). Self-regulated strategy development: A theoretical and practical perspective. In T. E. Scruggs & M. A. Mastropieri (Eds.), *Advances in learning and behavioral disabilities* (pp. 93–114). Greenwich, CT: JAI Press.
- Cohen, L., & Manion, L. (1994). *Research methods in education* (4th ed.). London: Routledge.
- Department for Education and Skills (DfES). (2003). *The future of higher education*. London: Author.
- Duffy, K. (2004). *Failing students*. London: Nursing and Midwifery Council.
- Ellis, E. S. (1993). Integrative strategy instruction: A potential model for teaching content area subjects to adolescents with learning disabilities. *Journal of Learning Disabilities*, 26, 358–383.
- Ellis, R. (2001, December 16). Dyslexic nurses 'give out pills by color.' *Mail on Sunday*, p. 8.
- Everatt, J. (1997). The abilities and disabilities associated with adult developmental dyslexia. *Journal of Research in Reading*, 20(1), 13–21.
- Farmer, M., Riddick, B., Sterling, C., & Simpson, B. (2001). *Assessment of the functional needs of dyslexic students in higher education*. Paper presented at the 5th British Dyslexia Association International Conference, University of York.
- Fawcett, A. (Ed.). (2001). *Dyslexia: Theory and good practice*. London: Whurr Publishers.
- Fitzgibbon, G., & O'Connor, B. (2002). *Adult dyslexia: A guide for the workplace*. Chichester: John Wiley & Sons.
- Frith, U., Landerl, K., & Frith, C. (1995). Dyslexia and verbal fluency: More evidence for a phonological deficit. *Dyslexia: An International Journal of Research and Practice*, 1(1), 2–11.
- Gale, A. (2004). *Learning nursing and dyslexia: An exploratory study to discover the impact dyslexia has on student nurse learning and performance*. Southampton: University of Southampton.
- Gathercole, S. E., & Baddeley, A. D. (1993). *Working memory and language*. Hove: Lawrence Erlbaum Associates.
- Gerber, P., Ginsberg, R., & Reiff, H. (1992). Identifying alterable patterns in employment for highly successful adults with learning disabilities. *Journal of Learning Disabilities*, 25(8), 475–487.

- Gobbi, M., Monger, E., Watkinson, G., Spencer, A., Weaver, M., Lathlean, J., & Bryant, S. (2004). Virtual interactive practice: A strategy to enhance learning and competence in health care students. In Medinfo 2004, *Building high performance health care organisations: Biomedical informatics for enhancing health care* (pp. 874–878). San Francisco: Research & Education.
- Hanley, J. R. (1997). Reading and spelling impairments in undergraduate students with developmental dyslexia. *Journal of Research in Reading*, 20(1), 22–30.
- Heaton, P., & Mitchell, G. (2001). *Dyslexia: Students in need*. London: Whurr Publishers.
- Herrington, M. (2001). Adult dyslexia: Partners in learning. In M. Hunter-Carsch & M. Herrington (Eds.), *Dyslexia and effective learning in secondary and tertiary education* (pp. 99–120). London: Whurr Publishers.
- Higher Education Council for England. (HEFCE). (1998). *Widening participation in higher education: Funding proposals*. London: Author.
- HMSO. (1995). *Disability discrimination act*. London: Author.
- HMSO. (2003). *Special educational needs in the disability act*. London: Author.
- Holloway, I., & Wheeler, S. (1996). *Qualitative research for nurses*. London: Blackwell Science.
- Humphrey, N. (2002). Teacher and pupil ratings of self-esteem in developmental dyslexia. *British Journal of Special Education*, 29(1), 29–36.
- Hunter-Carsch, M., & Herrington, M. (Eds.). (2001). *Dyslexia and effective learning in secondary and tertiary education*. London: Whurr Publishers.
- Jarvis, P. (1988). *Adult and continuing education theory and practice*. London: Routledge.
- Just, M., & Carpenter, P. (1992). A capacity theory of composition: Individual differences in working memory. *Psychology Review*, 99, 122–129.
- Kelly, S., Soundranayagam, L., & Grief, S. (2004). *Teaching & learning writing: A review of research & practice*. London: National Research and Development Centre for Adult Literacy and Numeracy, Institute of Education.
- Kerr, H. (2002). Learned helplessness and dyslexia: A carts and horses issue? *Reading*, 35(2), 82–85.
- Kirk, J., McLoughlin, D., & Reid, G. (2001). Identification & intervention in adults. In A. Fawcett (Ed.), *Dyslexia: Theory & good practice* (pp. 292–308). London: Whurr Publishers.
- McKissock, C. (2001). The role of counselling in supporting adults with dyslexia. In M. Hunter-Carsch (Ed.), *Dyslexia a psychosocial perspective* (pp. 245–253). London: Whurr Publishers.
- McLoughlin, D., Leather, C., & Stringer, P. (2002). *The adult dyslexic: Interventions & outcomes*. London: Whurr Publishers.
- McLoughlin, D. (2004). Dyslexia and the workplace—policy for an inclusive society. In G. Reid & A. Fawcett (Eds.), *Dyslexia in context: Research, policy and practice* (pp. 177–188). London: Whurr Publishers.
- McLoughlin, D., Leather, C., & Stringer, P. (2002). *The adult dyslexic: Interventions and outcomes*. London: Whurr Publishers.
- McNeil, C. (1995). *Peer tutoring*. Northampton: University of Leicester, Centre for Citizenship. University of Leicester & Kingfisher Press.
- Morgan, E., & Klein, C. (2000). *The dyslexic adult in a non-dyslexic world*. London: Whurr Publishers.
- Mortimer, T. (2003). *Dyslexia and learning style*. London: Whurr Publishers.
- Munroe, R. (2001). Council to probe threat to public from dyslexia. *Nursing Times*, 97(50), 7.
- Nursing and Midwifery Council. (2002). *Code of professional conduct*. London: Author.
- Palfreman-Kay, J. (2001). Students' views of learning support. In M. Hunter-Carsch & M. Herrington (Eds.), *Dyslexia and effective learning in secondary and tertiary education* (pp. 206–221). London: Whurr Publishers.

- Patton, J. R., & Polloway, E. A. (1992). Learning disabilities: The challenge of adulthood. *Journal of Learning Disabilities, 25*(7), 410–415.
- Plaza, M., & Guitton, C. (1997). Working memory limitation, phonological deficit, sequential disorder and syntactic impairment in a child with a severe developmental dyslexia. *Dyslexia: An International Journal of Research and Practice, 3*(2), 93–108.
- Price, G. A. (2003). *Cognitive load and the writing process: The paradox of the dyslexic writer in higher education*. Southampton: Southampton University.
- Quinn, F. M. (1991). *The principles and practice of nurse education* (2nd ed.). London: Chapman and Hall.
- Rack, J. (1997). Issues in the assessment of developmental dyslexia in adults: Rhetorical and applied perspective. *Journal of Research in Reading, 2*(1), 66–76.
- Reid, G. (2003). *Dyslexia: A practitioner's handbook*. (3rd ed.). London: John Wiley and Sons.
- Reid, G., & Kirk, J. (2001). *Dyslexia in adults: Education and employment*. Chichester: John Wiley and Sons.
- Rice, M., & Brooks, G. (2004). *Developmental dyslexia in adults: A research review*. London: NDRC.
- Riddick, B. (2000). An examination of the relationship between labelling and stigmatisation with special reference to dyslexia. *Disability and Society, 15*(4), 227–248.
- Riddick, B., Sterling, C., Farmer, M., & Morgan, S. (1999). Self-esteem and anxiety in the educational histories of adult dyslexic students. *Dyslexia: An International Journal of Research and Practice, 5*(4), 227–248.
- Rogers, C. (1988). *Freedom to learn for the 80's*. New York: Merrill.
- Sheehan, M., & Nganasurian, W. (1994). Spelling it out. *Nursing Standards, 25*(8), 42–45.
- Shellenbarger, T. (1993). Helping the dyslexic nursing student. *Nurse Educator, 18*(6), 10–13.
- Singleton, C. H., & Aisbitt, J. (2001). *A follow-up of the National Working Party survey of dyslexia provision in UK universities*. Paper presented at the 5th British Dyslexia Association International Conference, University of York.
- Snowling, M. (2000). *Dyslexia* (2nd ed.). Oxford: Blackwell Publishers.
- Stanovich, K. E., & Siegel, L. S. (1994). The phenotypic performance profile of reading-disabled children: A regression-based test of the phonological-core variable-difference model. *Journal of Educational Psychology, 86*, 24–25.
- Stewart, D. W., & Shamdassani, P. N. (1990). *Focus groups theory and practice*. Thousand Oaks, CA: Sage Publications Inc.
- Taylor, H. (2003). An exploration of the factors which affect nurses' record keeping. *British Journal of Nursing, 12*(12), 751–758.
- Tinklin, T., Riddell, S., & Wilson, A. (2004). Policy and provision for disabled students in higher education in Scotland and England: The current state of play. *Studies in Higher Education, 29*(5), 637–657.
- Townend, J., & Turner, M. (2000). *Dyslexia in practice: A guide for teachers*. London: Kluwer Academic Publishers.
- Wright, D. (2000). Educational support for nursing and midwifery students with dyslexia. *Nursing Standards, 14*, 35–41.
- Wright, D. J., & Eathorne, V. (2003). Supporting students with disability. *Nursing Standards, 18*(18), 37–42.

Received June 21, 2005

Revised October 26, 2005

Accepted October 27, 2005

Copyright of *Learning Disabilities -- A Contemporary Journal* is the property of Learning Disabilities Worldwide and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.