Learning Disabilities: Bringing Fields and Nations Together

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Abstract

This article advocates an approach to supporting students who experience difficulties in learning, irrespective of nosology, particularly in the key areas of literacy and numeracy. In the state of Queensland, Australia, a distinction has been made between students' experiencing learning difficulties and those who have learning disabilities (LD). However, government priorities for improved achievement in literacy and numeracy have focused schools on the performance of all low-achieving students, without regard to diagnostic category. Many are now mobilizing a schoolwide effort that combines resources into a unified plan, using a three-wave approach. The first wave is high-quality classroom teaching, the second is early intervention, and the third is ongoing support for those students who have persistent difficulties, using adapted instruction and intensive tutoring. A further theme is the promise of neuropsychological advances for giving meaning to the underlying impairments of some students—who do have LD—that justifies the provision of adaptations to sustain their learning throughout their schooling and beyond. Throughout this article, the different yet converging understandings of LD in Australia and the United States are tracked, with suggestions made for future research that avoid the problems of operationalizing the definition of LD proposed by Keogh in 1982.

Students in Australian schools who have experienced learning difficulties in basic school subjects have been of concern for at least the latter half of the 20th century. Initially, the term *slow-learning child* was commonly used for students who were marginal achievers without any obvious etiology that would have caused their referral for possible enrollment in a special school or special class—such services then being the only source of support beyond the classroom.

Following the practices developed in the United States around the time of the passage of the Education for all Handicapped Children Act (EAHCA; 1975), Australian students with low achievement in reading or other basic subjects were identified and ultimately labeled by exclusion, using a discrepancy between their achievement and their presumed academic ability (sometimes determined by a standardized intelligence test) and considered or presumed to have an underlying dysfunction of a neuropsychological nature. The label "learning

disabled" became commonly known among special educators and school psychologists, and Australian educators looked increasingly away from the United Kingdom and remedial education and to the United States and the new term *learning disabilities* (LD) as a framework for understanding and dealing with low school achievement.

As Kirk and Elkins (1975) showed, in the United States during the 1970s, LD soon became operationalized as reading disability with lower ability. In other words, teachers and administrators applied new funding allocations, paying limited attention to the definition contained in EAHCA and instead trying to assist any students failing in literacy. Whereas it had been anticipated that LD would be found in a small proportion of students (up to 3%), it rapidly became the dominant disability supported under EAHCA and its successor legislation such as the Individuals with Disabilities Education Act (IDEA; 1990). This is not surprising, since the operationalising of the definition of learning disabilities

has been a continuing challenge, as pointed out by Keogh as early as 1982.

As I have described elsewhere (Elkins, 1983, 1990), Australian politicians who formed the Australian House of Representatives Select Committee on Children and Adults with Learning Difficulties were not convinced that these students could be shown to have impairments in the way that was and is central to students with disabilities (Cadman, 1976). Rather, they chose to describe them as students with *learning* difficulties, and I have subsequently emphasized that it would be better to focus on the circumstance rather than on the student by expressing the notion of students who are experiencing learning difficulties, thereby opening up the possibility of exogenous influences, including dyspedagogia. However, Australian practice today remains focused on the student rather than on the constellation of possible contributing factors.

Unsurprisingly, the terminological distinction between LD and *learning difficulties* was often ignored, and

the nuance of experiencing difficulties, rather than having disabilities, was lost on most people. However, both the Australian federal and state governments kept the field of learning difficulties/ disabilities outside special education, putting the emphasis instead on the role of schools in supporting students who underperformed academically for any reason. Australia is a federation modeled on the United States (though retaining the Westminster combination of legislative and administrative arms of government), so it is as difficult to describe what pertains in all Australian schools as it is in the United States. For this reason, this article is confined largely to the situation in the state of Oueensland (once referred to by others as the Deep North of Australia and now best known as the home of the late Steve Irwin, the "Crocodile Hunter," and the former home of the "Great White Shark," Greg Norman). In Queensland, an attempt has been made to use both the terms learning disabilities and learning difficulties, the former being a subset of the latter. This distinction serves as a reminder that there is a small group of students whose learning problems have an endogenous origin, even though this often cannot be demonstrated and can only be inferred. Such students, whose challenges will probably remain throughout their life, deserve the same opportunities for adapted learning as those who have physical, sensory, or cognitive impairments.

In Queensland, until recently, specialist teachers assisted about half of those thought by their class teachers to need help beyond what they could supply, because of either limited time or lack of competence. For many years, the prevalence of students experiencing difficulties in learning-defined relatively against teacher need for support—was thought to be about 10%, although this has increased in recent years, as will be described later. Beginning in the 1960s, assistance was provided by experienced teachers who had completed at least one additional year of graduate study, called Support Teachers for Learning Difficulties (STLDs). These teachers began by withdrawing small groups of students for short periods of tutoring. Over the years, they have adopted a wide variety of approaches, including in-class collaboration and coteaching, professional development of teachers, assessment, parent counseling, and coordination of school special needs committees. Students suspected of underachievement in reading or arithmetic were not regarded as having a disability and did not participate in the diagnostic process, called ascertainment, leading to eligibility for schools to receive funds for the support of students with impairments. Instead, an assessment process called appraisement was introduced to assist in the planning of support for students experiencing learning difficulties and to permit district administrators to allot the available quantum of STLDs among schools according to manifest student needs. It is unclear whether the process of appraisement consumes too great a proportion of the time of STLDs, but some have suggested that this is so, as there are always more students needing assistance than can be supported, and an incremental approach that maximizes the time spent supporting these students and involves assessment only to the extent needed to plan teaching seems to be preferable.

Neuropsychological Evidence

Since the mid-1970s, when the decision was made to use the term *learning difficulties*, not *disabilities*, because impairment could not be demonstrated (Cadman, 1976), much has changed regarding scientific evidence about how learning occurs, how it can be impaired, and which neuroanatomical structures and neuropsychological functions are involved (e.g., Beaton, 2004). Early anatomical research had suggested that differences in brain structure might account for reading and other learning problems (e.g., Gala-

burda & Kemper, 1979), but teachers cannot await postmortem evidence. Implementing interventions is thought to be crucial in the early years of schooling, although early intervention may easily be oversold (van Kraayenoord, Luke, Elkins, & Land, 1999) and there is less support available for older students. Many clinicians have suggested that some students continue to experience problems throughout their lives and probably have learning disabilities, whereas other students respond to early intervention and do not truly have a disability. More recently, brain imaging research has suggested that differences in brain functioning might account for learning disabilities. Newer techniques in neuroscience and brain imaging have led to considerable progress in LD theory. Researchers have used neuroimaging technologies that enable researchers to understand more clearly the working of the brain using procedures such as magnetic resonance imaging (MRI), functional magnetic resonance imaging (fMRI), and positron emission tomography (PET), together with measurement of regional cerebral blood flow (rCBF), transcranial magnetic stimulation (TMS), single photon emission computed tomography (SPECT), near-infrared spectroscopy (NIRS), and measurement of event-related potentials (ERP) using electro-encephalography (EEG; Fiedorowicz, 1999). Thus, in my opinion, that some students' problems can be termed learning disabilities (i.e., based on impairment) has been validated through research using these investigative technologies, although it is unlikely that these expensive techniques will be used routinely to diagnose LD. Where learning disabilities are thought to have arisen from some trauma, however, these high-tech procedures appear to be invaluable. For students in whom a brain insult is not suspected, and in whom there may be a genetic basis for the problem, the challenge is to determine whether the evidence obtained suggests an initial impairment or a long-term compensation mechanism. There are enough imponderables

in the area of neuropsychology to give us cause to remember that current functioning may reflect a permanent state, a malleable state, or an adaptation to tasks that are not easily performed in the way that most people do them. In my view, there is now evidence to expect that some students who experience difficulties in learning literacy or numeracy but who are able to function well in other aspects of daily life will need long-term support or adaptations in the same way that persons with physical or intellectual impairments do. What the prevalence of LD as demonstrated by neuropsychology will be is uncertain, but it may be well short of the percentage currently qualified for support as having LD under U.S. legislation and regulations. There is also concern that educators and scientists know too little about the subtleties of the other's discipline (see Hruby & Hynd, 2006, for a salutary warning of how popularizing and overenthusiasm for the neuropsychology of reading can set back both fields).

As to how best to teach students with LD, neuroscience as yet has not been very informative. We know that LD may be associated with low activity in the left temporoparietal cortex for phonological tasks (e.g., rhyming) and that the left inferior frontal gyrus may also be less active. One practical advance may come from the findings of Temple et al. (2003), who reported changes in these areas following Fast ForWord intervention that was accompanied by increased reading scores. However, Finn, Bothe, and Bramlett (2005) have made a detailed critique using 10 criteria such as confirming evidence, avoiding peer review, and grandiose outcomes. They cited evidence critical of the claims made for Fast ForWord and noted that the intervention scored on 7 of the 10 criteria, thus calling the validity of Fast ForWord into question. The point to be made here is that it may be quite difficult to move from neuropsychological evidence to effective intervention and that fulfilling the promise of neuropsychological study to improve reading or math achievement may yet be years away.

Rethinking LD in the United States

Why should I now wish to reflect on the LD field in the United States, which of course I know less well than scholars who are immersed in it? One reason is that Australians do take their lead in education from the United States, and not just in military matters. We Australians do watch Big Brother (I refer here to Orwell, not reality television), and if we are not to be misled, we must understand the context in which U.S. education operates. It has been all too easy in the past to assume that LD is an objective field with no variation across cultural contexts. Mc-Dermott, Goldman, and Varenne (2006) have made a strong critique of American education for its use of LD, claiming that "LD is a kind of self that American education knows how to produce" (p. 16).

In recent years, researchers in the United States have questioned the conventional view of LD, based on evidence that students described as having a learning disability in reading have similar reading characteristics to students with low general ability (e.g., Stanovich, 2005). There is some evidence that a discrepancy between expected and actual achievement is no longer a valid basis for identifying students with LD, and that we do not need to wait until students are in Grade 2 or later for a discrepancy to be treated as significant. This is a concern that many in Australia would share, particularly as experience with Reading Recovery and the Year 2 Diagnostic Net (Queensland Studies Authority, 2005) has shown that it is possible to identify 6 year olds who are struggling to read narrative text aloud with accuracy and fluency. If we are to assist young students who may have difficulties in reading, writing, or mathematics, then we need something better than the discrepancy model. We note also from the literature that interventions for a "residue" of students who do not respond to the usual support services are lacking in effectiveness. This issue has been referred to (somewhat unfortunately) as treatment resistance. It also has focused our attention on the challenge of ongoing support for students who may not ever "catch up" or, to put it in terms familiar to American readers, will always be "left behind." The "can-do" attitude that has served the greatest nation so well may have met its match in these "hard to teach" students (Wise & Snyder, 2002). The current responsiveness to intervention (RTI) concept is clear evidence that researchers have recognized the limitations of past understandings about the nature of LD (see National Research Center on Learning Disabilities, 2004).

Some Australian Thinking

As mentioned earlier, drawing on Clay (1993) and others, Australian scholars have described three waves of literacy instruction (e.g., Louden et al., 2000). Much less has been said about difficulties in mathematics, but the three-wave model seems to apply there also.

First-wave instruction occurs in high-quality classroom programs, which, if they begin in the precompulsory years, will be broadly sociocultural in orientation and well removed from the "reading wars," because, as Tharp and Gallimore (1988) elegantly showed, there is room for teaching approaches from guided discovery to explicit instruction, practice, and praise, as used judiciously by teachers who are autonomous professionals. It is of course not easy to ensure that all classrooms are up to this challenge, and there are good arguments for increasing the proportion of resources available for improving firstwave instruction, although this rarely happens if special education funds are derived from different sources than general school budgets.

Second-wave instruction is exemplified by early interventions in liter-

acy, such as *Reading Recovery* (Clay, 1993), MULTILIT (Wheldall, 2002), and *Support-a-Reader*, a Queensland teacher aide or volunteer program of one-on-one listening to reading that derives from the New Zealand approach known as *Pause*, *Prompt*, *Praise* (McNaughton, Glynn, & Robinson, 1981). In numeracy, Wright's (2003) *Mathematics Recovery* is also a second-wave approach.

Third-wave support is necessary for students in the middle and upper primary years who need ongoing assistance with learning. This kind of support is rarely available or is severely time-limited, as the first two waves demand such a high proportion of the less than adequate funding that may be used at the discretion of school principals. Most third-wave support is ad hoc or has a limited research basis. I have been impressed by the Morningside model developed by Johnson and Layng (1992), which I observed in Seattle some years ago. I know of nothing as systematic in Australia outside of university research centers. However, if this last group of hard to teach students does in fact have learning disabilities, then what may be needed is an ongoing modified program that gives them access to the curriculum, circumventing their difficulties in literacy or numeracy.

While acknowledging that progress is being made using the RTI framework (Fuchs & Fuchs, 2005, 2006; Torgesen, 1999, 2000; Torgesen et al., 2001), I believe that we need to make changes in general education classrooms, especially to cope with the extreme range of attainment in basic skills as grade levels increase. When current moves toward educating students with substantial impairments in general education classrooms are noted, the conclusion is unavoidable that ways are needed to have effective teaching in every classroom. To achieve this is challenging, but not impossible. Several Australian research studies attest to the existence in some schools of effective programs that meet the needs of a diverse collection of students (Louden et al., 2000; van Kraayenoord, et al. 2000). Some of these schools use multi-age grouping, and others have no option but to individualize, namely, the one- or two-teacher schools that exist in large numbers throughout the Australian outback. Here, teachers expect students to be working at different levels and use the principles of universal design for learning (Center for Applied Special Technology, 1999-2006), even though they may never have heard this term. I turn now to some research on how schools are accommodating students with learning difficulties within broader literacy and numeracy initiatives.

Influence of Accountability in Literacy and Numeracy

Educational research is funded mostly by the Australian government through open competitive grants that either reflect researchers' priorities (termed Discovery grants), community needs (Linkage grants), or government policy agendas, which at present address the theme of educational disadvantage in literacy and numeracy. State governments also engage in funding research that reflects aspects of their research and evaluation needs. They also manage research funding from the federal government to engage in research on topics that receive a state focus while failing in the general area of educational disadvantage, including students with disabilities.

I will mention a few such studies. The first one fits a broad definition of research through its use of literature review, surveying target groups, and inviting submissions. The *Report of the National Inquiry into the Teaching of Literacy* (Department of Education, Science and Training, 2006) owes its existence to a letter written by a group of academics, mostly psychologists, who expressed concern about a perceived lack of attention to phonics and related matters, such as phonemic awareness. In the end, although the necessity of phonics was stressed, the report made

a balanced set of recommendations and gave little by way of sensational ideas to feed to the press. However, it criticized preservice teacher education, joining a series of reports over 30 years that have identified inadequate attention to the teaching of reading and mathematics in Australian teacher education. More needs to done to ensure that all graduating teachers understand how to teach literacy and numeracy, not only as general skills but also as they are used in all curriculum areas and at all grade levels where they plan to teach.

There has been considerable interest in Oueensland in an investment in curriculum reform called Literate Futures (Queensland Department of Education, Training and the Arts, 2002). This reform was based on an extensive review of how schools can be encouraged to improve literacy outcomes. As with many such initiatives, there has been some slackening in the attention of schools to the implications of Literate Futures, although the requirement that public schools develop school literacy plans appears to have been taken seriously. Research is needed to determine how much impact can be detected in both test scores and measures of recreational reading. In Queensland, mathematics has received less attention, although interventions such as Mathematics Recovery (Wright, Martland, & Stafford, 2000) have been developed elsewhere in Australia and are used in several countries.

Several studies sponsored by the Australian government have addressed school literacy and numeracy. Two related national studies dealt with students with learning difficulties and students with low-incidence disabilities who were educated in (predominantly) ordinary classrooms. Another study targeted the middle years of schooling, and the most recent study, based in the state of Queensland, focused on effective support for students who experience learning difficulties in literacy and numeracy. The details of these and other studies of literacy and numeracy are available on the Web site of the Australian government Department of Education, Science and Training (2005).

As part of this research, case studies of schools thought to be successful in teaching literacy and numeracy were conducted. It is difficult to obtain quantitative evidence about the success that these schools have achieved, although achievement tests are conducted in Grades 3, 5, and 7 and will soon take place in Grade 9. Therefore, the researchers accepted the nominations for being a successful school from people at district or regional levels. Nomination of the schools was based on a combination of statewide test scores and the schools' adoption of a serious commitment to improving outcomes for their students. In some cases, schools had been honored in statewide competitions in which they submitted portfolios of evidence.

The following elements appeared to the researchers to have contributed to desired student outcomes and represented effective practices:

- A literacy plan (sometimes also numeracy) drawn up by the staff of the school and enacted by the whole school community.
- A commitment of significant resources to the literacy (and sometimes numeracy) effort of the school.
- The sharing of expertise among all staff, including teaching assistants, parents, and volunteers.
- Ensuring that all students are given adequate time to learn without interruption. One school had put its free play recess at the final half hour of the day to maximize "good" learning time.
- Trying to use statewide test data to fine-tune their efforts (a task that most schools found difficult).
- Implementing their own annual testing program, and assessing students who transferred in during the year.
- Inviting middle school and older students to make self-assessments of their literacy progress.

 Using practice software for short periods—but frequently—to build fluency in reading, spelling, or arithmetic.

It is clear that teachers can be given the skills and can accept the responsibilities that enable effective instruction. Thus far, Australian governments have used the "carrot" approach, supplying some additional funds to support interventions with students who do not reach benchmarks. It is evident from Australian research that it is very difficult, though not impossible, to prevent or eradicate low literacy or numeracy levels in all students. However, effective schools now seem to use their support staff and teaching assistants collaboratively in mainstream classrooms more than in the withdrawal to resource rooms that was used 30 years ago.

School Literacy Plans

In Queensland, an accepted definition of literacy appeared in the *Literate Futures* report (Queensland Department of Education, Training and the Arts, 2002). Literacy is "the flexible and sustainable mastery of a repertoire of practices with the texts of traditional and new communications technologies via spoken language, print, and multimedia and the ability to use these practices in various social contexts" (Luke, Freebody, & Land, 2000, p. 9). In the report, four focus areas were proposed:

- Student diversity
- Future literacies
- Teaching reading
- School literacy planning

Schools were required to develop literacy plans involving data relating to

- Community profiles
- Strategic community partnerships
- Shared vision
- Leadership, coordination, and professional learning

- Standards and targets
- Classroom organization and pedagogy
- Assessment and monitoring
- Intervention and special needs

This approach does not single out any particular stage or method. Nor is there any imposition from state or district authorities. The literacy plan has relevance because of the school's ownership of it. The literacy plan applies at every grade level, and every teacher and principal has a role to play. It involves using literacy at all levels in the curriculum as well as literacy-focused lessons. The plan regards literacy as part of living in society. Again, numeracy is often neglected, as numeracy plans are not mandated.

In one sense, effective schools are those that have striven to consider how best to create their school plans. Writing a plan and submitting it to the state Department of Education can be a mere formality. However, if schools are serious about improving the quality of their work, we know that students will benefit. In recent research, we have observed schools that are responsive to their particular community and have developed strategic partnerships. These partnerships may be with Aboriginal groups or with the mining company that is the main employer in the locality. Schools have arranged their professional development activities to unify the vision of staff. They set their own standards and targets for improvement and consider how best to arrange literacy and numeracy teaching across the curriculum. They determine what assessment should be implemented and how student progress should be reported in ways that are sometimes at variance with mandated practices.

Although it is possible to measure changes in school scores on statewide tests, this can only be part of the information used to judge the success of schools. One reason is the narrow scope of such tests. Another is that many students change schools, and the comparison of schools across time may be meaningless if the students are not

the same each year. Analysis of longitudinal school achievement data requires sophisticated multilevel models (Goldstein, 2003) that can track students who change schools and examine separately the learning trajectories of various groups of students, including those given labels like LD, and those who received certain interventions such as *Reading Recovery*. Only in this way can we establish the effectiveness of our efforts to assist students whose literacy and numeracy are of concern and provide a basis for determining cost effectiveness.

Among other features of schools that have seemed to be effective, sometimes in only a few cases, sometimes in most, when researchers carried out case studies are

- Flexible grouping, including multi-age classes
- Support staff and teacher aides working collaboratively in classrooms supporting students as they engage with the class program
- Inclusiveness of student diversity (gender, ethnicity, language background, etc.)
- Using computer software and the Internet for building reading fluency and high-level writing skills (e.g., Inspiration, e-mail, blogs)
- Co-opting school librarians into the literacy focus, so that students can practice reading through recreational reading
- Avoiding narrowing the curriculum and increasing time for literacy, often by emphasizing reading and writing in content areas
- Reviving the "language and literacy across the curriculum" approach that prospered during the years when metacognition was novel
- Helping middle and high school teachers become aware of how they can build literacy and numeracy in content areas.

Other approaches that have been successful include increasing the effective time for learning. For example, few schools seem to appreciate that many adolescents have Internet access, which teachers can harness to increase learning time. Support staff could do some of their work—both teaching and assessing literacy—before or after school or during recess. One school had arranged vacation activities that were highly motivational and boosted literacy. Other schools arranged swaps between elementary and high school teachers to mutual benefit.

In summary, there is much that can be tried by schools that see teaching as supporting learning and that are energized to improve outcomes for students. Reading the case studies of schools can be helpful to staff seeking ideas that work. However, there is no need for a "magic bullet" method to serve students well.

Emerging Issues

Although research evidence is not available, frequent contact with schools suggests that schools are identifying substantially more students as experiencing learning difficulties than was true 25 years ago (Andrews, Elkins, Berry, & Burge, 1979). My hypothesis is that the current Australian emphasis on minimizing the number of students who fall below agreed benchmarks has caused schools to identify a higher proportion of "at-risk" students and initiate support for them. The imperative to improve statewide test performance for all students has caused schools to develop integrated support systems, combining resources for different target groups: students experiencing learning difficulties, students with disabilities, English language learners, and students from impoverished homes and communities. Also, there are signs that schools are becoming interested in cost effectiveness, although they are finding it difficult to disentangle data on costs and effectiveness of interventions from general education programs, especially in the longer term.

Having been involved in the field (then called "remedial education") since 1964, when I first taught high school classes in which students struggled with literacy and numeracy, and when I took my first graduate course from John McLeod (Emeritus of the University of Saskatchewan), I have observed the distinctive nature of the Australian approach, which is now closer to the North American approach than at any previous time. Both have changed as research evidence has challenged the structures imposed by legislators, bureaucrats, and advocates. The U.S. No Child Left Behind Act (NCLB; 2001) and the Australian emphasis on meeting benchmarks are both attempts to lift standards. How realistic they are will be known only in time. My wager is on success being dependent on school-level determination to support all students, for there is little to suggest that the spread of achievement within classes can be greatly modified by any silver bullet, despite current enthusiasm for evidence-based practice. Rather, we can hope that the rate of learning will be optimized for all students, and that schools will overcome the tyranny of grade-level expectations as criteria by which to judge the educational enterprise.

Research is needed to identify the balance among first, second, and third waves in schools that serve different communities. We also need to study how teachers can best meet the needs of all students without stigma and labels. The techniques developed in self-contained LD classrooms need to be validated in heterogeneous classrooms. Also, we need to use advanced research methods that can tease apart the contributions of the many influences on achievement, along with sophisticated studies of costs and benefits.

Is it too much to expect that the divisions of the past—learning disabilities versus difficulties, Chapter 1, disadvantaged urban versus rural schools, cultural minorities, limited English proficiency—can be dissolved as schools truly match learning opportunities to student characteristics? I believe that schools can be trusted, instead of being constrained by mandates devised by

people who forget the individuality of students and, instead, try to coerce schools into adopting a manufacturing stance, with threats to close unproductive enterprises. In time, we will understand NCLB to be an incomplete vision—one that overlooks the possibilities for successful lives that can be attained by individuals who fail achievement tests, but who, like W. Somerset Maugham's (1951) illiterate tobacconist so insightfully portrayed in *The Verger*, find ways in which to meet their challenges in literacy:

"I suppose you can read," said the manager a trifle sharply.

Mr. Foreman gave him a disarming smile.

"Well, sir, that's just it. I can't. I know it sounds funny-like but there it is, I can't read or write, only me name, an' I only learnt to do that when I went into business."

The manager was so surprised that he jumped up from his chair.

"That's the most extraordinary thing I ever heard."

"You see it's like this, sir, I never 'ad the opportunity until it was too late and then some'ow I wouldn't. I got obstinate-like."

The manager stared at him as though he were a prehistoric monster.

"And do you mean to say that you've built up this important business and amassed a fortune of thirty thousand pounds without being able to read or write? Good God, man, what would you be now if you had been able to?"

"I can tell you that sir," said Mr. Foreman, a little smile on his still aristocratic features. "I'd be verger of St. Peter's, Neville Square." (p. 944)

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