

Special Educational Services for Children with Specific Learning Disability (Dyslexia): An Evaluation

This study explores the effectiveness and appropriateness of special educational provision for children with a specific learning disability (dyslexia) in the Irish primary school sector.

MARY NUGENT is a psychologist with the National Educational Psychological Service (NEPS).

INTRODUCTION

There are three different types of special educational provision in Ireland for children with severe dyslexia: resource teaching, reading units (also known as special classes) and special school placement. Each form of provision caters for broadly the same group of students, with the same type and level of need. They are similar in their aims and in their pupil-teacher ratio. However, they differ in how provision is organised.

To date there has been no systematic comparative evaluation of the efficacy of these three forms of special education. The Report of the Task Force on Dyslexia (DES, 2001) recommended that

The Department of Education and Science should commission a study to compare the relative effectiveness and appropriateness to the needs of individual students and their parents of the three models of special educational provision that are in place for primary level students with specific learning difficulties, including those arising from dyslexia – resource teaching support, enrolment in a special class and enrolment in a special school (p. 44).

The contribution of this research is to address these issues. The aim of the study was to evaluate the three forms of provision and compare them. The evaluation included a measure of literacy outcomes as well as information about parent and child perspectives.

METHODOLOGY

The study took place in primary schools in counties Dublin, Wicklow, Tipperary and Wexford. Included in the study were three special schools, five reading units and 16 schools offering resource teaching, encompassing a wide demographic spread. The participants were 100 children, in the age range eight to 13. All participants had a diagnosis of dyslexia and were completing two years of special educational services in the summer of 2003. Thirty-five children were in a special school setting, 34 in a reading unit setting and 31 were receiving resource teaching interventions in mainstream schools. The average full-scale IQ of participants was 97.7, with 79% of participants being of average ability or above. There was a reasonably representative spread of socio-economic groups, with those in the higher socio-economic groups slightly over-represented.

Data on all 100 participants included pre- and post-intervention WORD (Wechsler Objective Reading Dimensions) (The Psychological Corporation, 1993) scores in basic reading, spelling and reading comprehension, as well as composite reading scores. Information on other variables was also recorded, such as age on entry to special education, gender, level of intellectual ability and socio-economic group. Each child participant was interviewed in school by a researcher and all parents were sent a parental questionnaire.

It should be acknowledged here that the identification of dyslexia is an area of considerable debate, as noted in, for example, Reason (1998), the British Psychological Society (BPS) (1999), Vellutino, Fletcher, Snowling and Scanlon (2004). The Department of Education and Science employs a discrepancy model of dyslexia, identifying dyslexia on the basis of a discrepancy between general intellectual ability and reading ability. For the purposes of this research, the fact that all participants were assessed by a psychologist is taken as ‘evidence’ of their dyslexia.

RESULTS

Information about Participants at Pre-intervention

Given that the three types of services for dyslexic children have similar briefs, it would have been expected that those attending each type of service would be broadly similar. However, analysis of pre-intervention data indicated that there were differences between the three groups. The main findings were:

- there was a significant statistical difference between groups in the area of age on entry to special education, with the children in the resource teaching group being significantly younger than the children in the other two groups;
- there were larger numbers of children from semi-skilled and unskilled families in the special schools than in either of the other two groups;
- those in the resource teaching group had better literacy skills at the outset and the difference, in the area of spelling, was statistically significant;

there was a trend for those attending special schools to be more intellectually able than children in other settings, while those in reading units tended to be the least intellectually able.

Linking this with what we know from the literature, we might expect that children in special schools and in resource groups might do better than those in special classes. This is because higher levels of IQ are associated with better gains (Vaughn, Linan-Thompson and Hickman, 2003; Ofsted, 1999; Klassen, 2001; Chapple and Spelman, 2003), while in some studies, younger children have been found to respond better to interventions (Uhry and Shepherd, 1997).

It is interesting to note that only 51% of the participants had ‘severe’ literacy difficulties, as defined by the Department of Education and Science (DES, 1999) in Appendix II of Circular 08/99 (literacy skills at or below the 2nd percentile). At the time the data was collected this circular was in force for those receiving resource

teaching. Special schools and reading units had somewhat more flexibility, yet it was in the resource sector that more flexibility was shown, with 29% of this group performing within the low average range of literacy (that is between the 10th and 25th percentile).

Post-intervention Data

After two years of specialist intervention, the average participant attained a composite reading score of 79.09 (see Table 1). The highest levels of literacy were attained by the resource teaching group, although it should be remembered that this was the most able group in terms of literacy skills at the outset.

Table 1.

It is interesting to note that 25% of the participants still were functioning within the exceptionally low range of ability after two years of intervention. It is also noteworthy that only 17% of all participants attained average levels of literacy, with the majority (14%) of them scoring at the lower end of that range. This is disappointing given that 79% of all participants were of average ability or above.

For further analysis, the difference between pre- and post-intervention scores was explored. This difference is reported as 'gains' across each dimension of literacy. In terms of composite scores, the average participant made gains of 7.80 standard score points. Those receiving resource teaching appear to have made the most progress with composite gains of 9.19, while those in special schools made gains of 8.09 and those in reading units made gains of 6.23. Those in reading units made the least gains across all dimensions, while those in the resource teaching group made most gains in the areas of reading, reading comprehension and composite scores, with those in special schools making the most gains in the area of spelling (see Table 2).

Table 2.

Consistent with the literature (Vaughn, Gerten and Chard 2000; Swanson and Hoskyn, 1998; Snowling, Goulandris and Defty, 1996), participants achieved best in the area of reading comprehension (average post-intervention gains of 10.01) while spelling was the area most resistant to intervention (average post-intervention gains of 3.39).

Gains for those Presenting with the Most Severe Difficulties

Given that specialist services are intended for those with the most severe difficulties, it was decided to analyse the outcomes for this group separately. Table 3 shows the mean difference between pre- and post-intervention standard scores on all measures for those children in each group whose pre-intervention composite score was 70 or below.

Table 3.

What this suggests is that those with exceptionally low levels of literacy at the outset, make gains that are equivalent to other students. Interestingly, whereas Table 2 would suggest that resource teaching yields the highest gains in composite scores, this analysis indicates that, for the weakest students, it is the special

school setting that yields the highest gains on three out of four of the measures. Importantly, the special school delivers more consistent results, as indicated by the relatively small standard deviation scores.

In reviewing the raw data, it became apparent that results for the resource group were rather skewed by one participant, who made exceptional gains, including gains of 48 standard score points in reading comprehension. If this student's results were taken out of the calculations, the mean gains for the remaining 14 participants with severe difficulties receiving resource teaching look far less impressive, with gains in basic reading of .83, in spelling of -3.93, in comprehension of 9.14 and in composite scores of 4.79. This alerts us to the possibility of over-interpreting mean results. The large standard deviations for those in reading units also suggest considerable variability of outcomes between individuals in this form of provision.

Additionally, although reading units appeared to perform less well than other forms of provision, one unit produced results that were exceptional. In this unit the average standard score gains were as follows (average for all participants is shown in brackets for ease of comparison), basic reading 11 (6), spelling 11 (3), comprehension 16 (10) and composite scores 15 (8). These results alert us to the possibility of misunderstanding the trends in the descriptive data. It certainly would not be appropriate to underestimate the potential of reading units to deliver an excellent service.

Statistical Analysis of Literacy Outcomes Between Types of Provision

Given the fact that there were significant differences between the three forms of provision at the outset, it was important to use a statistical test which controlled for the variables that influenced outcomes. A MANCOVA analysis was used, which controlled for pre-intervention scores, age on entry to special education and full scale IQ (which were found in this study to have a statistically significant effect on outcomes). This analysis showed that there were no statistically significant differences between the types of provision on any of the three outcome measures (i.e., gains in basic reading, gains in spelling or gains in reading comprehension).

CHILD AND PARENT PERSPECTIVES

So far, the data presented shows no statistical difference between the three forms of provision, in terms of progress in reading. However, any evaluation of a service needs to take account of the views of the service users, in this case, parents and children. While a separate article would be needed to do justice to all the data collected from parents and children, the main findings are outlined here. This information is based on 100 child interviews and 113 valid returned parental questionnaires (the discrepancy is due to the fact that not all children put forward for the study could be included).

Generally, there emerged differences between those in specialist settings (reading units and special schools) and those in resource settings. While children in all settings were positive about their special educational provision,

reporting improved literacy skills and greater confidence, children in specialist settings were noticeably more positive than those in resource settings. Surprisingly, it was those in the resource setting who were more likely to report feelings of stigma, noting that school work was often 'too hard' and disliking having to leave the classroom to get help. Those in specialist settings felt positive about being with others with the same difficulties.

Parents of children receiving special educational services were overwhelmingly positive about special education and reported positive gains in children's self-esteem, ability to cope with academic work and levels of happiness. Parents reported that their children were more relaxed, felt more normal and got on better with others.

Again, parents tended to be more positive about specialist settings than they were about the resource setting, and in two instances this trend reached statistical significance. For example, parents of those in special schools were significantly more likely to report that their children were happy than parents of children in resource settings. Parents of children in reading units were significantly more satisfied with the special education provision than were parents of children receiving resource teaching.

DISCUSSION

Literacy Progress Compared to International Research

Children in this study made considerably more progress with their reading than did children who accessed the traditional Irish learning support model (normally, daily withdrawal from class for 30-40 minutes, receiving help within a small group). Of course, those who received help from a learning support teacher include children with a range of difficulties, including some with very low ability. However, they also include children with dyslexia and those in learning support would have better pre-intervention literacy scores than those in special educational settings. Shiel, Morgan and Larney (1998) reported gains of just 3 standard score points in reading for such children, while, in this study, children accessing special education made gains of 8 standard points in composite scores.

However, in the context of international research, the gains reported here for children in special educational services are less impressive. Results compare unfavourably with British research, such as that done by Snowling, Goulandris and Defty (1996) which reports effect sizes of .74 in reading and .59 in spelling after two years of intervention, (whereas the effect sizes for participants in this study were as follows: .42 in basic reading, .23 in spelling and .64 in comprehension). However, most important are three studies done with children with severe literacy difficulties, with profiles very similar to the children in this study, indicating far more impressive progress. Torgesen, Alexander, Wagner, Rashotte, Voeller and Conway (2001) reported gains of 11 standard points after a 16-17 week intervention, with follow-up after two years showing that these gains were sustained, while Oakland, Black, Stanford, Nussbaum and Balise (1998) reported gains of 10 standard points in word recognition, with levels in

reading comprehension approaching average levels. The study by Lovett, Borden, DeLuca, Lacerenza, Benson and Brackstone (1994) was even more impressive with effect sizes of between .90 and 1.11 reported on key skill areas. It should be noted that none of these interventions was of either longer duration, or expended greater numbers of teaching hours per pupil, than any of the three forms of special educational provision in Ireland.

Overall, while special educational services in Ireland are delivering gains that compare reasonably well to those identified in international research, there is clear evidence that there are more effective methods and approaches available, delivering better results even for those with the most severe degree of dyslexia.

CONCLUSION

This research has explored three forms of special educational provision in Ireland. Overall, this research had indicated that there is no simplistic answer to the question, 'Which form of special education is 'best' for children with dyslexia?' Certainly, in terms of reading outcomes, differences are not statistically significant. However, children are reported to be happier in specialist settings (reading units and special schools) and parents are more satisfied with these specialist settings. The research does suggest that special educational services for dyslexic children in Ireland could be improved and developed. The reality is that many Irish children continue to suffer the negative consequences of dyslexia and rates of progress are modest.

With sincere thanks so all the children, parents and teachers who gave their time so generously and co-operated with this research.

REFERENCES

British Psychological Society (1999) *Dyslexia, Literacy and Psychological Assessment*, Leicester: British Psychological Society.

Chapple, C. and Spelman, B. (2003) The effectiveness of pupil referral to a special school for children with reading difficulties, *The Irish Journal of Psychology*, Vol. 24 (3-4), pp. 114-128.

Department of Education and Science (DES) (1999) Circular 08/99, Dublin: Author.

Department of Education and Science (DES) (2001) *Report of the Task Force on Dyslexia*, Dublin: The Stationery Office.

Klassen, R. (2001) 'After the Statement' Reading Progress Made by Secondary Students with Specific Literacy Difficulty Provision, *Educational Psychology in Practice*, Vol. 17 (2), pp. 121-133.

Lovett, M., Borden, S., DeLuca, T., Lacerenza, L., Benson, N. and Brackstone, D. (1994) *Treating the Core Deficits of Developmental Dyslexia: Evidence of Transfer of Learning after Phonologically- and Strategy-based Reading Training*

Programmes, *Developmental Psychology*, Vol. 30 (6), pp. 805-822.

Oakland, T., Black, J.L., Stanford, G., Nussbaum, M.L. and Balise, R.R. (1998) An Evaluation of the Dyslexia Training Program: A Multisensory Method for Promoting Reading in Students with Reading Disabilities, *Journal of Learning Disabilities*, Vol. 31 (2), pp. 140-147.

Ofsted (1999) *Pupils with Specific Learning Difficulties in Mainstream Schools*, London: Ofsted Publications.

Reason, R. (1998) Effective Academic Interventions in the United Kingdom: Does the 'Specific' in Specific Learning Difficulties (Disabilities) Now Make a Difference to the Way We Teach? *School Psychology Review*, Vol. 27 (1), pp. 57-65.

Shiel, G., Morgan, M. and Larney, R. (1998) *Study of Remedial Education in Irish Primary Schools*, Summary Report, Dublin: Educational Research Centre, St. Patrick's College.

Snowling, M., Goulandris, N. and Defty, N. (1996) A Longitudinal Study of Reading Development in Dyslexic Children, *Journal of Educational Psychology*, Vol. 88 (4), pp. 653-669.

Swanson, H. and Hoskyn, M. (1998) Experimental Intervention Research on Students with Learning Disabilities: A Meta-analysis of Treatment Outcomes, *Review of Educational Research*, Vol. 68 (3), pp. 277-231.

The Psychological Corporation (1993) *Wechsler Objective Reading Dimensions (WORD)*, London: The Psychological Corporation.

Torgesen, J.K., Alexander, A.W., Wagner, R.K., Rashotte, C.A., Voeller, K.S. and Conway, T. (2001) Intensive Remedial Instruction for Children with Severe Reading Disabilities: Immediate and Long-term Outcomes from Two Instructional Approaches, *Journal of Learning Disabilities*, Vol. 34 (1), pp. 33-58.

Uhry, J. and Shepherd, M. (1997) Teaching Phonological Recoding to Young Children with Phonological Processing Deficits: The Effect on Sight Vocabulary Acquisition, *Learning Disability Quarterly*, Vol. 20 (2), pp. 104-125.

Vaughn, S., Gerten, R. and Chard, D.J. (2000) The Underlying Message in Learning Disabilities Intervention Research: Findings from Research Synthesis, *Exceptional Children*, Vol. 67 (1), pp. 99-114.

Vaughn, S., Linan-Thompson, S. and Hickman, P. (2003) Response to Instruction as a Means of Identifying Students with Reading/Learning Disabilities, *Exceptional Children*, Vol. 69 (4), pp. 391-409.

Vellutino, F.R., Fletcher, J.M., Snowling, M.J. and Scanlon, D.M. (2004)
Specific Reading Disability (Dyslexia): What Have we Learned in the Past Four
Decades? *Journal of Child Psychology and Psychiatry*, Vol. 45 (1), pp. 2-40.