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ABSTRACT

This research review examined the use of a whole class early literacy program in classes which included disadvantaged and at-risk children in Australia. The program, Schoolwide Early Language and Literacy (SWELL), is based on an interactive compensatory theory of literacy acquisition adapted from Success for All, a U.S. early literacy program. The review found that by the end of kindergarten, children in SWELL schools outperformed counterparts in control schools on tests measuring the reading of connected text but not on other early literacy measures. At-risk students, including those with mild intellectual disability, were able to master partial phonetic cue reading in the SWELL program. Follow-up studies indicated that by the end of Year 1 (Grade 1), all children in SWELL schools outperformed their counterparts in control schools on four of five early literacy tests. However, at-risk students who had received the individualized Reading Recovery program outperformed similar students in SWELL schools and control schools on two of five literacy tests. Further follow-up midway through Year 2 (Grade 2) no longer indicated any differences among the individualized Reading Recovery program students, the SWELL whole class students, or the small groups in control schools. The review addresses the implications of the use of a structured program such as SWELL as a whole class program and as the most effective individualized program for inclusion of at-risk students. (Contains 58 references.) (Author/DB)

THE USE OF A STRUCTURED LITERACY PROGRAM TO FACILITATE THE INCLUSION OF MARGINAL AND SPECIAL EDUCATION STUDENTS INTO REGULAR CLASSES.

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ABSTRACT

A preliminary study was carried out to evaluate the use of a whole class early literacy program with disadvantaged and at risk children. This program, Schoolwide Early Language and Literacy (SWELL) is based on an interactive-compensatory theory of literacy acquisition. Results indicated that by the end of kindergarten, children in SWELL schools outperformed their counterparts in control schools on tests measuring reading connected text but not on other early literacy measures. In addition, marginal children in the mainstream, including those targeted as having mild intellectual disability, were able to master partial phonetic cue reading, in contrast to marginal students in control schools who did not attain this skill. Follow-up studies indicated that by the end of Year 1, all children in SWELL schools outperformed their counterparts in control schools on four early literacy tests, but the effect of the fifth, reading connected text, was only evident in large disadvantaged schools. Marginal students who had received individualised Reading Recovery outperformed marginal students in SWELL schools and control schools who had received small group intervention on reading connected text and on reading pseudowords, but not on tests of segmentation, spelling and writing. No children classified as developmentally delayed received individualised Reading Recovery, but were included in both SWELL small class and control schools small group intervention. Further follow-up mid-way through Year 2, on marginal children only, no longer indicated any differences among the individualised Reading Recovery, SWELL small class or control schools small group. The implications of the use of a structured program such as SWELL, as a whole-class program and the most effective individualised program for inclusion of at risk students were then discussed.

THE USE OF A STRUCTURED LITERACY PROGRAM TO FACILITATE THE INCLUSION OF MARGINAL AND SPECIAL EDUCATION STUDENTS INTO REGULAR CLASSES.

At the international level in general, and at the United Nations in particular, there is now a greater commitment than ever before to the inclusion of at risk children and children with intellectual disabilities into the regular school classroom (Mittler, 1995). This suggests that, in most developed countries, at least in the early years of schooling, a significant number of children with identified disabilities will attend regular schools alongside their non-disabled peers. Since it has been found that early classroom experiences are much more critical in shaping the potential for success for these children than for their more socially or cognitively advantaged counterparts (Belsky and Mackinnon, 1994), it is essential that the individual curriculum needs of both developmentally delayed and other at risk children are satisfactorily met from the point of school entry.

In the early years of schooling, the curriculum area of greatest importance and the one to which most class time is devoted is that of literacy. Moreover, it is particularly in the area of literacy that early instructional variables appear to be most intimately associated with the ultimate success of children at risk. If the whole class literacy curriculum is not specifically geared to include such hard to teach children, we may be condemning a significant minority of our youngsters, from the beginning of their school career, to a negative spiral of cumulative educational disadvantage. It is thus essential that we provide all children, as soon as they start school, with the semantic, syntactic, phonological and orthographic structures which research data has indicated are critical to literary success.

Both internationally and in Australia, over the past 20 years, two competing theories of reading acquisition have been struggling for acceptance by the reading community. Currently, in NSW, Australia, the view of 'top-down' or 'whole-language' theorists such as Goodman (1976) and Smith (1971) appears to have prevailed. These reading theorists proceed from the premise that learning to speak and learning to read are entirely comparable instances of language development (Liberman & Liberman, 1992). Consequently, a fundamental principle of this theoretical orientation is that reading instruction should emulate children's acquisition of speech, which involves no direct instruction in phonological processing.

The alternative 'interactive' reading theory that has been proposed (Rumelhart, 1977) subsumes elements from both 'top-down' and 'bottom-up' reading theories of reading. 'Bottom-up' theorists, such as Gough (1976), who stress the need for processing every word, letter by letter are now rarely translated into an instructional program, since the teaching of a strict hierarchy of phonic skills

before accessing connected text is not a feature of many early reading classrooms. However the 'bottom-up' emphasis on explicit instruction in decoding, particularly for at risk or intellectually disabled students, in the initial stages of reading acquisition, has been shown to be essential in avoiding literacy failure for this group of students. (Adams, 1990; Stanovich, 1994.) The 'inter-active compensatory' theory of reading acquisition, derived from a combination of a 'top-down' and a 'bottom-up' view of reading (Stanovich, 1980; 1984) assumes that both psycholinguistic ('top-down') and phonological processes ('bottom-up') are carried out simultaneously and complement each other (Andrews, 1989). It negates the simple equivalence of learning to read with learning to speak, and insists that the phonemic structure of words, which is not apparent in speech, should be made explicit in script by teaching children the alphabetic principle. The 'inter-active compensatory' theory acknowledges the importance of semantic and syntactic processes in skilled readers ('top-down') but recognises the primacy of phonological and orthographic processors ('bottom-up') in early reading acquisition. Indeed, it is the very reliance on semantic and syntactic processes when phonological processes are inadequate that distinguishes poor from fluent readers, (Stanovich, 1984).

The research data relevant to skilled reading acquisition appears to strongly support the 'interactive-compensatory' reading model (Nicholson, 1992). In the first place, 'whole-language' theorists have not overly concerned themselves with research on reading acquisition, nor indeed, with developing a systematic instructional program based upon their premises. In fact, it has been suggested that whole-language advocates see whole-language not as a reading method, but as an approach to school change (McKenna, Stahl and Reinking, 1994.) Second, the research evidence which emanates from both correlational and intervention studies suggests that 'the discovery of a strong relationship between children's phonological awareness and their progress in learning to read is one of the great successes of modern psychology' (Bryant & Goswami, 1987, p.439). This statement is based on an impressive list of studies on the correlates of reading acquisition undertaken by Blachman, 1984; Bradley & Bryant, 1983; Fox & Routh, 1980; Lundberg, 1989; Mann & I.Y. Liberman 1984; Olson, Wise, Connors & Rack, 1989, and Treiman & Baron, 1981. Furthermore, there is a growing corpus of research evidence indicating that children at risk of literacy failure do not discover the alphabetic principle on their own and need systematic direct instruction in phonological analysis and alphabetic coding (Stanovich, 1993/1994.) Indeed, the knowledge that direct instruction in alphabetic coding facilitates early reading acquisition is one of the best established conclusions in all behavioural sciences, (Adams, 1990; Anderson, Hiebert, Scott , & Wilkinson, 1985; Chall, 1983, 1989; Perfetti, 1985; Stanovich, 1986). It appears that only efficient knowledge of grapheme to phoneme mappings will enable children to gain the reading independence that eventually leads to the levels of practice that are a prerequisite to fluent reading.

The dissensions in early reading acquisition theory are also echoed, to some extent, in the provision of remedial services to students who have failed to acquire literacy. Currently, in NSW, Australia, as in many other countries, the well-regarded New Zealand program, Reading Recovery (Clay, 1979; 1985), has been adopted as the main intervention program for children in Year 1 who have

failed to profit from 12 months of literacy instruction in the kindergarten year. However, early schooling in NSW differs considerably from that in New Zealand, so that the efficacy of Reading Recovery in New Zealand cannot be automatically generalised to Australian conditions (Center, Wheldall, Freeman, Outhred & McNaught, 1995). The NSW system of education, while also centralised like that of New Zealand, is also the largest in the Southern Hemisphere and has, as its constituency, an extremely socially, ethnically and cognitively diverse group of children, differing dramatically in its exposure to early literacy concepts. Furthermore, unlike New Zealand, there is no uniformity of early literacy instructional practices in the kindergarten year in NSW. More recently trained teachers tend to use a whole language approach to curriculum objectives, while more experienced teachers seem to be using a more phonically based approach, with a significant number of early educators adopting an integrated position. In addition, teacher training in early literacy does not occupy a large part of many preservice programs, with the result that many newly graduated teachers must learn on the 'job', adopting the methods that are characteristic of the specific school to which they have been appointed. Consequently, many children who are either intellectually or socially disadvantaged do not receive uniformly systematic instruction in their kindergarten year, making their selection for Reading Recovery intervention more problematic than it appears to be for their New Zealand counterparts. Furthermore, the usual practice of Reading Recovery tutors is to refer students, classified as having mild intellectual difficulties, out of Reading Recovery intervention into special education services. These services, however, tend to be extremely restricted in schools which have opted to introduce Reading Recovery. In addition, neither Reading Recovery in Australia, nor withdrawal special education services in general, are necessarily congruent with the classroom program operating in the regular Year 1 classroom, restricting generalisation opportunities for at risk learners. If we are to achieve the most effective early literacy instruction for intellectually and socially disadvantaged students, it may well be that we should be looking more closely at the quality of instruction in the kindergarten year, the specific intervention procedures that follow in Year 1 and the children that they target, regardless of their classification, as well as the classroom program in Year 1 that supports that intervention.

At the present time, in a large number of disadvantaged schools in NSW, an early literacy program, based on a highly effective U.S. early literacy program, Success for All (Slavin, Madden, Karweit Dolan & Wasik 1992), but significantly altered and modified for Australian conditions is being evaluated. This program has been adapted and extended for use with Australian school children (Center & Freeman, 1994; 1995; 1996a; 1996b), in collaboration with researchers at Johns Hopkins University, Baltimore. The Program, known as Schoolwide Early Language and Literacy (SWELL), in its adapted and extended form, is also based upon an 'interactive-compensatory model' of reading acquisition (Stanovich, 1980; 1984). It assumes that essential prerequisites to reading develop during the pre-school years as children interact with a literary environment. However, it also acknowledges that some children from disadvantaged circumstances have not been exposed to story telling, to concepts about print and to lively verbal exchanges with their parents and peers. Furthermore, it also recognises that for

children with intellectual difficulties, incidental exposure to emergent literacy concepts in the home may not be sufficient for their acquisition. Such children, upon arrival at school, may not understand the nature of text nor that letters and words represent speech, that they are meant to communicate a meaning, and that spoken and written words are made up of individual sounds, all necessary prerequisites to literacy acquisition.

SWELL attempts to develop these critical prerequisite literacy concepts as a whole class program, in the first three-six months of kindergarten, through the Emergent Literacy Program. In the remaining months of kindergarten and in most of Year 1, the Becoming Literate Program, which is the formal literacy instruction program, is introduced. However, several components of the Emergent Literacy Program, which are co-requisites of literacy acquisition continue to be developed and extended. In this way, SWELL attempts to build in the prerequisites to reading that may not have developed in all children before they arrive at school. It then teaches them, systematically, to crack the alphabetic code in the context of connected prose, since we know that not all children, particularly those with identifiable intellectual difficulties, will manage this critical element on their own. Once secure phonological recoding skills have been established, children will have the ability to translate from print to speech independently. Furthermore, through many successful encounters with previously unfamiliar words, they will be able to acquire both the general and word-specific knowledge needed for efficient word recognition (Byrne & Fielding-Barnsley, 1995, p.489). These are the curricular objectives of Becoming Literate, aimed at providing inclusive education for all at risk students integrated into mainstream classes. In addition, in contrast with the Reading Recovery Program, the individualised and small group intervention which is extended to all students who need it, parallels the classroom program. When Becoming Literate ends towards the end of Year 1, and the 'Learning to Read' (Chall, 1983) stage has been completed, the third component of SWELL, Towards Literacy Competence, is introduced. This component focuses on listening and reading comprehension strategies as children reach the stage of 'Reading to Learn' (Chall, 1983). As the evaluation studies that form the focus of this paper have looked only at Stage 1 and Stage 2 of the SWELL Program, a brief description of the first two stages only is included.

The components of the SWELL program

Stage 1 - Emergent Literacy

(a) Story-telling and Retelling (STaR)

In the first 3 months of the regular kindergarten year a structured program of 20 minutes duration, (Story-telling and Retelling - STaR) is added to the typical kindergarten class curriculum. Research on story-telling indicates that children's oral language, comprehension skills and emergent writing are increased when they are actively involved in the reconstruction of stories by such techniques as structured retelling, dramatisation and role playing, particularly at the emergent literacy level.

Typically, a story takes two days to be read interactively. On day 1, the story is introduced through the activation of background knowledge, the discussion of critical vocabulary, the detailing of the purpose for listening to the story and the prediction by students of upcoming events in the story. The story is then read to

the students, interspersed with literal, inferential and predictive questions by the teacher who thus models comprehension strategies for the students. Finally, there is a brief review of the story. On day 2, there is a class retell of the story, either through sequence cards, dramatisation or a combination of both activities, during which time a number of children individually retell the story to a volunteer so that their understanding can be continuously monitored.

(b) Learning about Print.

Connections between Speech and Print and Concepts about Print (Clay, 1979; 1985) are taught systematically through Big Book activities and generalised in the story retelling STaR component.

In the Connections about Print section, the concept of lexical awareness is introduced as children are taught to link the sight and sound of whole words and word parts through using words encountered in both Big Book and STaR activities.

In the Concepts about Print section, book format, the use of capital letters and some basic punctuation conventions are demonstrated in Big Book activities and generalised, where possible, in STaR lessons.

(c) Early (shallow) phonological awareness

Concepts such as recognition and production of rhyme and alliteration, are systematically introduced in context through BIG BOOK activities and generalised in the story retelling STaR component.

(d) Syntactic awareness

Syntactic awareness is developed through the use of oral cloze and jumbled sentence procedures using familiar words and sentences from Big Book and STaR stories.

(e) Expressive and Receptive Language Development

The Peabody Language Development Program (Dunn, Smith & Dunn, 1981) or CLAS Program (Plourde, 1995), is also added to the regular classroom program for 20 minutes daily to provide additional models for language use and expression as well as for development of specific vocabulary skills.

(f)) Emergent writing

Emergent Writing is a regularly programmed activity accepting drawings, scribble, non-phonetic letter strips, invented and conventional spelling as valid communication.

(g) Intervention

All activities are systematically monitored and assessed during the individual retell sessions. Small group remediation in listening comprehension is delivered twice weekly by a volunteer and in early phonological awareness also twice weekly by a trained teacher to all those children who need additional assistance.

Thus all students who start Stage 2, Becoming Literate, will have had every chance to master the emergent literacy prerequisites prior to the systematic introduction of deeper level phonological awareness skills and phonological recoding within an interactive -compensatory model of early reading instruction. Furthermore, receptive/expressive language activities will be continued, an extended version of STaR with emphasis on higher order comprehension skills

and a Becoming Writers program will be added in Stage 2 to maintain students' listening comprehension, emergent writing and vocabulary skills.

Stage 2 - Becoming Literate

Becoming Literate is generally introduced in Term 2 of the kindergarten year and continues until almost the end of Year 1. It is suggested that for this stage of the program, the kindergarten and Year 1 classes are organised into homogeneous groups for the 50 minute Becoming Literate lesson, with an extra small class being created for the lowest progress students.

A brief description of the components of Becoming Literate appear below.

(a) Sound/symbol correspondence (phonological recoding)

Sound/symbol correspondence is introduced systematically to help students crack the alphabetic code, and is practised in specially written shared stories. The sounds are introduced in a logical order from easy to hard, with the early presentation of those sounds which generate the most vocabulary and the separation of confusing sounds.

(b) Phonological/Phonemic Awareness

Later (deeper) phonological awareness concepts of blending, segmenting and phoneme manipulation are systematically developed and practised through the use of known sounds. These concepts are introduced first through the use of syllables, compound words and onset and rime.

(c) Exception or Sight Words

Exception or Sight words are taught systematically to promote reading fluency and to enlarge reading vocabulary.

(d) Shared Stories

These are specially written stories to accommodate research indicating that students learn to read in meaningful contexts while systematically acquiring metalinguistic (lexical, phonological, syntactic and pragmatic awareness) skills and phonological recoding skills (Adams, 1990). For this purpose, students read an entire book from the time they have mastered only three letter sounds. This book is part of a series of 'shared stories' which contain some material in small type to be read by the teacher and other material in large type to be read by the student. The students' text is about 60% phonically regular, (Beck, 1981) so that students will practise their word attack skills in context. The adult text adds background and richness to the story that would not be possible with the limited vocabulary of an early reader. In addition, pictures are used to represent certain words so that students can read interesting stories long before they even know the entire alphabet. Graded early story books with students matched to text should also be provided in the class library so that students may also experience 'real' books, at their independent or instructional level.

(e) Writing

Writing as a communicative skill is included in the program, since reading and writing, being mutually supportive, are connected at each step to the learner's knowledge of the system of written language . While writing, after exposure to reading, facilitates the reading process, writing activities also draw learners' attention to sounds in words and to letters that might symbolise these sounds (Ehri, 1989).

(f) Spelling

Spelling is taught concurrently with reading since both develop in parallel when the two are intertwined in a literacy curriculum. To enhance children's knowledge about the orthographic structure of English, students are systematically introduced to orthographic constraints using pseudowords (Treiman, 1993).

(g) Comprehension

Comprehension strategies are developed through listening comprehension activities based on stories, (at higher textual levels and through reading comprehension activities based on Shared Stories (at lower textual levels).

(h) Intervention

Assessments are carried out at the end of every 10 lessons to check on students' accuracy and fluency in reading connected and on their spelling. This allows for a rearrangement of classes for students in the homogeneous groups. The small groups established during Emergent Literacy to provide additional Listening Comprehension support for students with difficulties should continue during Becoming Literate. In this way, at risk students are receiving support both with decoding and with Listening Comprehension.

Becoming Literate normally ends towards the end of Year 1 when most necessary grapheme-phoneme correspondences have been mastered. However, even when most Year 1 and Year 2 students have started Stage 3 of SWELL, Towards Literacy Competence, any at risk students or students with intellectual disabilities in the early grades can avail themselves of Becoming Literate, either in class groups or in individual tutoring, if they have not yet become 'unglued from print' (Chall, 1983).

The aim of this paper is to overview a number of investigations carried out in order to:

1) assess the efficacy of the SWELL Program in kindergarten
2) assess the effectiveness and cost-effectiveness of SWELL and Reading Recovery in Year 1.
3) assess the short-term maintenance effects of SWELL and Reading Recovery in Year 2.

Our focus has been on both whole class results and on results of children most at risk of literacy failure. The results of our investigations and their implications for early literacy instruction are discussed in the following section.

1) In order to assess the efficacy of the SWELL Program in kindergarten, four primary schools, in two different regions of the Department of School Education, who were receiving Disadvantaged Schools Funding, were chosen to take part in a pilot evaluation study in 1994. One school in each region was selected as an experimental school, and adopted SWELL as its early literacy program, while the other school in the region was designated as the control school and did not change its kindergarten literacy program. The experimental and control schools in each region were similar with respect to size, socio-economic level and ethnicity. The test used in all four schools in the pre-testing of the kindergarten sample was a Phonemic Awareness Test to establish equivalence of subjects prior to the implementation of the SWELL Program. The four post-tests for the

kindergarten children were the ***Passage Reading Test*** (Deno, Mirkin & Chiang, 1982), ***the Burt Word Test - New Zealand Revision*** (Gilmore, Croft & Reid, 1981), ***the Word Attack Skills test*** and ***a test of Invented Spelling*** (Mann, Tobin & Wilson, 1987). (For full details of sample, methodolgy and description of test materials, see Center & Freeman, 1996).

Table 1 shows the means, adjusted means and standard deviations for kindergarten classes in control and experimental schools on the four early literacy measures used at the end of the kindergarten year.

(Table 1 about here)

A MANCOVA, using the pretest scores on the phonemic awareness test as the covariate, revealed an overall significant effect ($F[4,154] = 9.55$, $p = 000$). Inspection of the univariate results indicated that only the Passage Reading Test, (reading connected text accurately and fluently), was significant, ($F[1,157] = 12.91$, $p = .000$). The test of Invented Spelling just failed to reach significance ($F[1,157] = 3.06$, $p = .082$). There was no significant difference between the two groups on the other two tests of early literacy, the BURT and the Word Attack Skills Test.

While the results pertaining to reading connected text discriminated significantly between experimental and control students, only trends in favour of the experimental group were observed on tests measuring the reading of pseudowords, real words in isolation and developmental spelling. No doubt constant exposure to connected text, sequenced at the correct instructional level, was directly responsible for the greater success of the experimental students on the passage reading measure. However, it must also be stressed that, at the time of testing, towards the end of the kindergarten year, not all phoneme-grapheme correspondences had been covered in the Becoming Literate Program, which typically continues forr another 6 months, until the middle of Year 1. The experimental children, therefore, had not yet developed a full repertoire of word attack skills, which would militate against great success in reading words in isolation and in developmental spelling. In connected text, on the other hand, context cues could have assisted word recognition for students with developing analytic skills, in the experimental group. For many of the control students, however, who had experienced less systematic instruction in phoneme-grapheme correspondences, context cues, in the absence of pictorial cues, would have been less effective. The fact that the lowest progress students in the experimental group were benefitting from explicit instruction in decoding, unlike their counterparts in the control group, was clearly demonstrated when an error analysis of the pseudoword test was undertaken for the lowest quartile in each group. Twenty-eight to forty-eight percent of low progress students, after 6 months of SWELL, were able to read pseudowords in isolation, provided that they contained taught sounds. None of these students could read pseudowords containing sounds which had not yet been taught. In contrast, none of the low progress students from the control group, could read any pseudowords at all. This suggests that mere exposure to sound/symbol correspondences, which is the

hallmark of most early literacy programs in kindergarten, had not been effective for this group of students.

For children at risk or those who are developmentally delayed, this could well be an important result. The acquisition of automaticity in word recognition is a necessary, but not sufficient, prerequisite to reading for meaning. This is because automatic word recognition enables more cognitive resources to be allocated to higher level processes of text integration and comprehension (Stanovich, 1993; 1994). Early success with decoding is more likely to lead to greater involvement with reading related activities which will further increase proficiency at the word level (Stanovich, 1993;1994). These positive early literacy encounters provide a natural progression to reading for text meaning, which, in turn, may facilitate general cognitive development. Such successful experiences, early in a child's school's career, may prevent the academic and concomitant social marginalisation which at risk and developmentally delayed children all too frequently encounter.

In conclusion, it can be seen that this preliminary evaluation of the SWELL Program in two experimental and two control NSW schools has indicated significantly higher scores for the whole kindergarten cohort in SWELL schools on tests of reading connected text. In addition, while almost half of the lowest quartile of experimental students had achieved partial phonetic cue reading (Vandervelden & Siegel, 1995), none of the students in the lowest quartile of the control schools could read any pseudowords at all at the end of the kindergarten year. As this result indicates that low progress children in the SWELL schools had acquired some knowledge of both letter-sound knowledge and phonological sensitivity, critical co-requisites of reading acquisition (Share & Stanovich, 1995), it may be tentatively assumed that such an early kindergarten program may provide a sound basis for further quality individualised intervention in Year 1 for socially or cognitively disadvantaged students.

2) A second evaluation investigated the effects of two early literacy programs, (SWELL and Reading Recovery) in Year 1 on the whole grade cohort and on the most at risk students. In 1995, four primary schools, in two different regions of the NSW Department of School Education, were selected to take part in the study. Two of the schools were large, containing three to four kindergarten and three to four Year 1 classes and were receiving Disadvantaged Schools funding. The other two schools were smaller, with fewer than two full classes per grade. One of the small schools was judged to be borderline 'disadvantaged', but received no funding, while the other was considered totally ineligible for Disadvantaged School funding. In one of the large schools, SWELL had been operating for 2 years, in kindergarten and Year 1, while the school selected by the Department of School Education as its control, in terms of size and socioeconomic status, had used Reading Recovery as an intervention in Year 1. The same situation applied in the smaller schools, with SWELL operating in the school designated as borderline/disadvantaged, and Reading Recovery being implemented in the other less disadvantaged school that had been selected as a control by the Department of School Education. (For full details of methodology, see Center & Freeman; under review).

The test used in the pretesting of students in the four schools in order to establish equivalence was the ***Burt Word Test - New Zealand Revision*** (Gilmore, Croft & Reid, 1981). The five post-tests of early literacy used were ***the Passage Reading Test*** (Deno, Mirkin & Chiang, 1982)_ ***the Word-Attack Skills Test , The Yopp-Singer Phoneme Segmentation Test*** (Yopp, 1988), ***The Developmental Spelling Test*** (Tangel & Blachman, 1995), and a ***Writing Test*** (Juel, 1988).

Table 2 shows the means, adjusted means and standard deviations for Year 1 classes in control and experimental schools on the five early literacy measures.

(Table 2 about here)

ANCOVAS computed for all five early literacy measures indicated significant effects in favour of the experimental group on four tests, the Word Attack Skills (pseudoword reading), ($F[1,124] = 4.41$, $p = 0.038$), the Yopp-Singer test of Segmentation, ($F[1,124] = 8.97$, $p = 0.003$), the Developmental Spelling Test, ($F[1,125] = 10.79$, $p = 0.001$), and the Writing Test, ($F[1,83] = 6.72$, $p = 0.011$). An interaction effect was evident only for the Passage Reading Test (reading connected text), ($F[1,124] = 4.92$, $p = .028$).

Multiple comparisons performed on adjusted means for the PRT indicated that significant differences favouring the experimental condition applied only to the large schools, ($F[1,84] = 8.61$, $p = 0.004$) while there were no significant differences between the small experimental or small control school on reading connected text ($F[1,39] = .54$, $p = 0.466$). Furthermore, while there were no differences between the experimental schools using SWELL on the basis of size, ($F[1,67] = 1.05$, $p = .309$), the small control school performed significantly better than the large control school on the Passage Reading Test ($F[1,56] = 18.60$, $p = 0.000$).

Further analyses were computed in order to compare the literacy achievement of those low progress students who had received individualised Reading Recovery intervention in control schools, those who had received small group intervention in control schools and those taught in a smaller class group in SWELL schools.

Table 3 shows the means and standard deviations for these three conditions.

(Table 3 about here)

One-way ANOVAS computed for the five literacy measures indicated an overall significant effect for the Passage Reading test (reading connected text), ($F[2,39] = 10.32$, $p = 0.000$) and the Word Attack Skills Test (reading pseudowords), ($F[2,39] =$

6.97, p = 0.003), but not for the other three literacy measures, the Yopp-Singer Test of Segmentation (F[2,39] = 1.15, p =.326), the Developmental Spelling Test, (F[2,39] = 2.50, p = .095) and the Writing Test (F[2,39] = 2.41, p = .119).

Orthogonal contrasts indicated that children who received individual Reading Recovery intervention outperformed the at risk students in SWELL small class groups on the Passage Reading Test (reading connected text), (t = .2.578, p = .014), but there was no significant difference between SWELL small class students and a combination of Reading Recovery and small groups in control schools, (t = 229, p = .82). A similar result was observed for the Word Attack Skills Test measuring pseudoword reading. For this measure, there was a significant difference between SWELL small class students and Reading Recovery students, favouring Reading Recovery students, (t = .2.75, p = .009) but no significant differences existed on pseudoword reading between SWELL students and a combination of Reading Recovery and small group students in control schools (t = -1.01, p = .316) .

The results for the whole cohort in Year 1 appear to suggest that a structured whole class program, based on an interactive compensatory theory of literacy acquisition, implemented in kindergarten and continued through Year 1 will raise the literacy levels of more students in disadvantaged schools than a traditional classroom program supplemented by an individualised intervention such as Reading Recovery. While this effect was observed in all disadvantaged schools, regardless of size, on most early literacy tests. it was evident only in the large disadvantaged school on a test of reading connected text. While this finding may be somewhat axiomatic, it supports the concerns of both Hiebert (1994) and Shanahan & Barr (1995), in their evaluations of the efficacy of Reading Recovery for schools with high proportions of low income and at risk students with poor literacy skills at school entry.

The second analysis specifically examined the progress of the most at risk children in both experimental schools and control schools. Qualitative analysis of the resource deployment in the two control schools is necessary prior to a discussion of the results. Because of the large number of students who needed additional literacy assistance, the Reading Recovery teacher in the large control school decided to work with fewer students individually and to include additional low progress students in small group intervention. This departure from traditional Reading Recovery practice ensured that almost twice the number of students that would typically be accommodated in Reading Recovery received some form of intervention from the Reading Recovery teacher. In the small control school, the Reading Recovery teacher did not depart from traditional practice, but small group intervention was also extended to the most at risk students by the resource teacher. Furthermore, children who had not been successfully discontinued from Reading Recovery, or who were still awaiting individualised assistance were not excluded from this small group. Thus, both large and small control schools recognised the need for additional intervention apart from Reading Recovery and established small groups in order to supplement it. In SWELL schools, the lowest progress children were placed in a smaller class group and progressed more slowly through the Becoming Literate Program. Individualised assistance was not able to be provided to these students because of financial constraints.

The results of the analysis indicate that the individualised Reading Recovery intervention for low progress students in control schools was significantly better than placement in the SWELL small class on tests measuring reading words in connected text and the decoding of pseudowords. It is obvious that a larger number of Reading Recovery students left the program with well developed reading strategies, knowledge of phonological awareness and phonological recoding than the low progress students from the small class intervention. However, there was no difference between these two intervention strategies on tests measuring segmentation, spelling and writing. Furthermore, when individualised intervention and small group intervention in control schools were added together and compared with small class intervention in experimental schools, this difference disappeared on all measures, as SWELL small class students tended to outperform their counterparts in the control schools on all early literacy measures. Thus when all at risk students in control schools are considered, it appears Reading Recovery, while highly effective as an individualised procedure, still targets too few at risk students in disadvantaged schools to make a significant impact on the large number of low achieving children needing assistance. Furthermore, in neither of our control schools did Reading Recovery provide individualised assistance to children classified as having an intellectually disability, a group probably most in need of such assistance.

An important result of this fine-grained analysis of at risk readers has been the confirmation of the effectiveness of individualised intervention given daily and systematically to low progress students by trained Reading Recovery teachers (Pinnell et al, 1994). In addition, within our control schools, it is also clear that at risk and developmentally delayed students not receiving individualised Reading Recovery instruction make very little progress in literacy acquisition. However, the results that emanate from the experimental schools suggest that a schoolwide early language and literacy program can result in substantial benefits to a large cohort of both at risk and regular students in disadvantaged schools. Within such a program, it is also obvious that a small class intervention group is not as effective as an individualised program, but does show to advantage when compared with a small intervention taught by a Reading Recovery teacher. It is therefore imperative that individualised intervention also be factored in as an essential part of the SWELL program. While this has been mandated in Success for All schools in the US, financial constraints in our experimental schools inhibited its regular and systematic application. Whether this individualised intervention be Reading Recovery or one based on the classroom program still remains to be investigated and a study examining this issue is currently in progress. Certainly, if Reading Recovery were the selected option, a program like SWELL, operating in kindergarten, would make student selection for individualised intervention a more accurate procedure than is currently the case and obviate the need for providing Reading Recovery to children who do not need such an expensive intervention. A structured program such as SWELL in Year 1 would also be more supportive for students not fully 'recovered' from the Reading Recovery Program.

3) A further investigation was carried out in all four schools halfway through 1996, to monitor the performance only of those at risk and developmentally delayed students who had taken part in the previous study. By the middle of Year 2, only one experimental school was continuing with all the components of the SWELL Program, while the other had instituted some adaptations with the arrival of a new principal at the beginning of the year. Three tests of early literacy that had been used in the previous investigation, the Passage Reading Test, the Word Attack Skills test and the Developmental Spelling Test were administered to all students who had received individualised Reading Recovery or small group intervention in the control schools or who were placed in the small at risk class in the SWELL schools. The test of segmentation was not administered because of its unsuitablity in Year 2 and the Writing Test was omitted because of time constraints.

Table 4 shows the means and standard deviations for the three groups.

Table 4 about here

A doubly multivariate repeated measures analysis of variance performed on the data for the three groups for those children present on both occasions (N=37) at the end of Year 1 and midway through Year 2 indicated no group effect, ($F [6,62] = 1.77$, $p = .119$), no group by time interaction effect ($F [6,62] = .56$, $p = .75$), but revealed a significant time effect ($F [3,32] = .15.96$, $p = .000$) which univariate analysis confirmed was significant for each group. These results thus indicate that by the middle of Year 2, while all groups have shown some improvement over time, there is no longer any significant difference among the three treatments accorded to the lowest achieving students in control and experimental schools.

These results are interesting both quantitatively and qualitatively. In quantitative terms, the relative diminution of progress observed for Reading Recovery students, once intervention has ceased, has been noted by many researchers in the field, (Center et al, 1995; Glynn, Crooks, Bethune, Ballard & Smith, 1989; Hanrahan & Barr, 1995; Hiebert, 1994; Wasik & Slavin, 1993). It appears that some students who are discontinued from the Program need ongoing support which is not routinely provided in the regular classroom. Thus for the most marginal students who are selected for Reading Recovery intervention, (about 30%), success in the mainstream without systematic assistance is problematic.

The results for the marginal children in the SWELL group are more encouraging. While there were no significant differences revealed between the small at risk group, and the small group in control classes, the SWELL children appeared to have maintained their original advantage. Furthermore, while there were no children with intellectual disabilities in the Reading Recovery group, there were three children classified as intellectually disabled in both

SWELL small class, and in the control small group. When the results of these children are examined individually, ithe figures reveal that in the area of phonological recoding, from a list of 17 pseudowords, the three children in the SWELL small class each correctly read 5, and had partial phonetic cue reading of all but two of the most difficult pseudowords. In the control small group. one child could read 4 words, and also had partial phonetic cue reading of all but two words, while the other two children could read no words and had no partial phonetic cue reading at all. When looking at the reading of connected text, the developmentally delayed children in the SWELL group had a mean score of 20 words read accurately in one minute, while their counterparts in the control school small group had a mean of only 1.6 words. Finally, the results of the developmental spelling test show that the children classified as IM in the SWELL class scored a mean result of 33.3 compared with IM children in the small group who recorded 23.6.

These results indicate that low progress children in the SWELL schools had acquired more knowledge of both letter-sound knowledge and phonological sensitivity, critical co-requisites of literacy acquisition (Share & Stanovich, 1995), than their counterparts in traditional classroom programs. It may thus be that an early whole class kindergarten program like Swell, instituted from the point of school entry and followed by a structured literacy program in Year 1 and 2, specifically paced for low progress learners in a small group, may provide a sound basis for literacy acquisition in the mainstream for developmentally delayed learners.

In conclusion, we must stress the tentative nature of the results and the need for replication with a larger group of students for a longer period of time. Nevertheless, the results of these investigations underscore the fact that a systematic whole class early literacy program, based on the latest research in early literacy acquisition and supplemented by an individualised program for all needy students, for as long as is necessary, appears be a better solution to the problem of literacy failure for low socioeconomic and at risk students than either alternative on its own. In view of the fact that the SWELL Program in our experimental schools was at an early stage of implementation, with a number of teachers not fully inserviced in its aims and objectives and with no individualised assistance provided to at risk students, the results are encouraging. This is perhaps not surprising since SWELL has been modelled on Success for All, a whole class program for disadvantaged students, which has been systematically monitored for at least 7 years (Slavin, Madden, Dolan, Wasik, Ross & Smith, 1994). The data presented by these authors demonstrates graphically that substantially greater literary success for disadvantaged or delayed students can be routinely ensured in schools through teacher commitment, parent involvement and the best available classroom programs. Of particular interest is the fact that the highest effect sizes are typically found for those students who are in the bottom 25% of their classes. Furthermore, the longer a school is in the program, the better the effects on reading performance seem to be for the whole grade. While we acknowledge cross cultural difficulties when transposing a program from one country to another and specific weaknesses in this study such as small sample size and lack of random allocation to treatment conditions, we nevertheless believe that an investigation such as this is a

tentative first step in establishing the optimal mix of early intervention programs that will best serve those children in at risk of literacy failure.

REFERENCES

Adams, M. J. (1990). *Beginning to read.* Cambridge, Massachusetts: The MIT Press.

Anderson, R.C., Hieber, E. H., Scott, J., & Wilkinson, I. (1985). *Becoming a nation of readers.* Washington, D.C: National Institute of Education.

Andrews, S. (1989). Psycholinguistics and reading acquisition the argument for decoding. *The NSW Journal of Special Education,* 10, 15-20.

Beck, I.L. (1981). Reading problems and instructional practices. In G.E. MacKinnon and T.G. Waller (Eds)., *Reading research: Advances in theory and practice,* vol. 2 (pp 53-94). New York: Academic Press.

Belsky, J. & McKinnon, C. (1994). Transition to school: Developmental trajectories and school experiences. *Early Education and Development,* Vol 5, No 2. 106-119.

Blachman, B. (1984). Relationship of rapid naming ability and language analysis skills to kindergarten and first grade reading achievement. *Journal of Educational Psychology, 76,* 610-622.

Bradley, L. & Bryant, P.E. (1983). Categorizing sounds and learning to read: A causal connection. *Nature, 30,* 419-421.

Bryant, P.E. & Goswami, U. (1987). Beyond grapheme-phoneme correspondence. *Cahiers de Psychologie Cognitive, 7,* 439-443.

Bryne, B., & Fielding-Barnsley, R. (1995). Evaluation of a program to teach phonemic awareness to young children: A 2- and 3-year follow-up. *Journal of Educational Psychology, 87,* 1 No.3 488-503.04-111.

Center, Y. & Freeman, L. (in press).A trial evaluation of SWELL (Schoolwide Early Language and Literacy Program for at risk and disadvantaged children. *International Journal of Disability, Development and Education.*

Center, Y. & Freeman, L. *(under review).* Examining the effects of two early literacy programs.

Center, Y. & Freeman, L. B. (1996a) *Towards Literacy Competence Manual.* North Ryde, NSW. Macquarie University.

Center, Y. & Freeman, L.B. (1994). *Emergent Literacy Manual.* North Ryde, NSW. Macquarie University.

Center, Y. & Freeman, L.B. (1995). *Becoming Literate Manual.* North Ryde, NSW. Macquarie University

Center, Y., & Freemen, L.B. (1996b). *The SWELL Tutor Manual.* North Ryde, NSW. Macquarie University.

Center, Y., Wheldall, K. & Freeman, L. (1992). Evaluating the effectiveness of Reading Recovery: A critique. *Educational Psychology,* 12 (3 & 4)., 263-274.

Center, Y., Wheldall, K., Freeman, L. B., Outhred, L. & McNaught, M. (1995). An evaluation of Reading Recovery. *Reading Research Quarterly,* 30, 240-263.

Chall, J. S. (1989). Learning to read. The great debate twenty years later. Phi Delta *Kappan,* 70, 521-538.

Chall, J.S. (1983). *Stages of Reading Development.* New York: McGraw Hill.

Clay, M.M. (1979; 1985). *The Early Detection of Reading Difficulties* (third edition). Auckland: Heineman.

Deno, S.L., Mirkin, P.K. & Chiang, B. (1982). Identifying valid measures of reading. *Exceptional Children*, 49, 36-45.

Dunn, L.M., Smith, J.O. & Dunn, L.M. (1981). *Peabody Language Development Kits - Revised.* Circle Pines, MN, U.S.A.: American Guidance Service.

Ehri, L. C. (1989). The development of spelling knowledge and its role in reading acquisition and reading disabilities. Journal of Learning Disabilities, 22, 356-365.

Fox, B. & Routh, D.K. (1980). Phonetic analysis and severe reading disability in children. *Journal of Psycholinguistic Research, 9,* 115-119.

Gilmore, A., Croft. C. & Reid, N. (1981). Burt Word Reading Test - New Zealand Revision. Wellington, New Zealand. New Zealand Council for Educational Research.

Glynn,T., Crooks, T., Bethune, N. , Ballard, K. & Smitg. J. (1989). *Reading Recovery in context.* Wellington: New Zealand Department of Education.

Goodman, K. (1976). Reading: A psycholinguistic guessing game. In H. Singer & R.B. Ruddell (Eds)., *Theoretical Models and Processes of Reading* (Second Edition).. Newark, Delaware: International Reading Association.

Gough, P. (1976). One second of reading. In H. Singer & R.B. Ruddell (Eds.), *Theoretical Models and Processes of Reading* (Second Edition).. Newark, Delaware: International Reading Association.

Hiebert, E. (1994). Reading Recovery in the United States: What difference does it make to an age cohort? *Educational Researcher, 23,* No. 9, 15-25.

Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology, 80,* 437-447.

Liberman, I.Y. & Liberman, A.M. (1992). Whole language versus code emphasis: Underlying assumptions and their implications for reading instruction. In P.B. Gough, L.C. Ehri & R. Treiman (Eds.), *Reading Acquisition.* Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Lundberg, I. (1989). Lack of phonological awareness - a critical factor in developmental dyslexia. In C. von Euler, I. Lundberg, & G. Lennerstrand (Eds)., Wenner-Gren Symposium Series 54, *Brain and Reading.* New York: Macmillan.

Mann, V. A. Tobin, P., & Wilson, R. (1987). Measuring phonological awareness through the invented spellings of kindergartenchildren. *Merrill-Palmer Quarterly, 33, 365-391.*

Mann, V. A., & Liberman, I.Y. (1984). Phonological awareness and verbal short-term memory. *Journal of Learning Disabilities, 17,* 592-598.

McKenna, M.C., Stahl, S.A. & Reinking, D. (1994). A critical commentary on research, politics, and whole language. *Journal of Reading Behavior,* Vol. 26, No. 2, . 211-233.

Nicholson, T. (1992). Reading wars: A brief history and an update. *International Journal of Disabilities, Development and Education,* 39(3)., 173-184.

Olson, R., Wise, B., Conners, F. & Rack, J. (1989). Deficits in disabled readers' phonological and orthographic coding: Etiology and remediation. In C. von Euler, I. Lundberg & G. Lennerstrand (Eds.), *Wenner-Gren Symposium Series 54, Brain and Reading* (pp.233-242). New York: Macmillan.

Perfetti, C. A. (1985). *Reading ability.* New York: Oxford University Press.

Pinnell, G.S., Lyons, C.A., Deford, E.E., Bryk, A.S. & Seltzer, M. (1994). Comparing instructional models for the literacy education of high-risk first graders. *Reading Research Quarterly, 29, 8-39.*

Plourde, L. (1995). *Classroom Listening and Speaking* (CLAS). Arizona: Psychological Co-operation.

Rumelhart, D.E. (1977). Toward an interactive model of reading. In S. Dornic (Ed). *International Symposium on Attention Performance,* Stockholm, New Jersey: Halsted Press.

Shanahan, M., & Barr, R. (1995). Reading Recovery: An independent evaluation of the effects of an early instructional intervention for at-risk learners. *Reading Research Quarterly,* 30. No. 4, 958-996.

Share, D. L., & Stanovich, K. E. (1995). Cognitive processes in early reading development: a model of acquisition and individual differences. *Issues in education: contributions from Educational Psychology, 1, 1-57.*

Slavin, R. E., Madden, N. A., Dolan, L. J., Wasik, B. A., Ross, S.M., & Smith, J. S. (1994). 'Whenever and wherever we choose.' The replication of Successfor All. *Phi Delta Kappan,* April, 639-647.

Slavin, R.E., Madden, N.A., Karweit, N.L., Dolan, L. & Wasik, B. (1992). Success for All: *A relentless approach to prevention and early intervention in elementary schools.* Arlington, V.A.: Educational Research Service.

Smith, F. (1971). *Understanding reading: A psycholinguistic analysis of reading and learning to read.* New York, Holt, Rinehart & Winston.

Stanovich, K E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly,* 21, 360-407.

Stanovich, K.E. (1980). Toward an interactive-compensatory model of individual differences in the development of reading fluency. *Reading Research Quarterly,* 16, 32-71.

Stanovich, K.E. (1984). The interactive-compensatory model of reading: A confluence of developmental, experimental and educational psychology. Remedial and Special Education, 5, 11-19.

Stanovich, K.E. (1993). Romance and reality. *The Reading Teacher.* Vol. 47, No. 4, 280-290.

Stanovich, K.E. (1994). Constructivism in Reading Education. *The Journal of Special Education,* Vol. 28, No. 3, 259-274.

Tangel, D. M. & Blachman, B. A. (1995). Effect of phoneme awareness instruction on the invented spelling of first-grade children: A one-year follow-up. *Journal of Reading Behaviour,* 27. No.2 153-185.

Treiman, R. & Baron, J. (1981). Segmental analysis ability: Development and relation to reading ability. In G.E. MacKinnon & T. G. Waller (Eds). *Reading Research: Advances in theory and practice, Vol 3.* New York. Academic Press.

Treiman, R. (1993). *Beginning to Spell.* New York: Oxford University Press.

Vandervelden, M. C., & Siegel, L. S. (1995). Phonological recoding and phoneme awareness in early literacy: A developmental approach. *Reading Research Quarterly,* 30, No. 4 854-875

Waddington, N. J. (1988) *Diagnostic Reading and Spelling Tests.* Australia: Waddington Educational Resources

Wasik, B.A., & Slavin, R.E. (1993). Preventing early reading failure with one-to-one tutoring. A review of five programs. *Reading Research Quarterly, 28.* 179-200.

Yopp, H. K. (1988). The validity and reliability of phonemic awareness tests. *Reading Research Quarterly,* 23(2)., 159-177.

Table 1 **Means, adjusted means and standard deviations for kindergarten classes in control and experimental schools on 4 early literacy measures**

Measure	Control schools (n=69)	Experimental schools (n=87)
Reading connected text		
M	16.32	23.49
(M)-adjusted	15.72	24.09
SD	19.12	17.39
Invented Spelling		
M	42.44	44.53
(M)-adjusted	41.08	44.89
SD	17.02	13.43
Reading pseudowords		
M	5.77	6.60
(M)-adjusted	5.55	6.85
SD	7.15	6.30
BURT word test		
M	11.14	11.60
(M)-adjusted	10.79	11.98
SD	10.18	10.60

Table 2 **Means, adjusted means and standard deviations for Year 1 classes in control and experimental schools on 5 early literacy measures.**

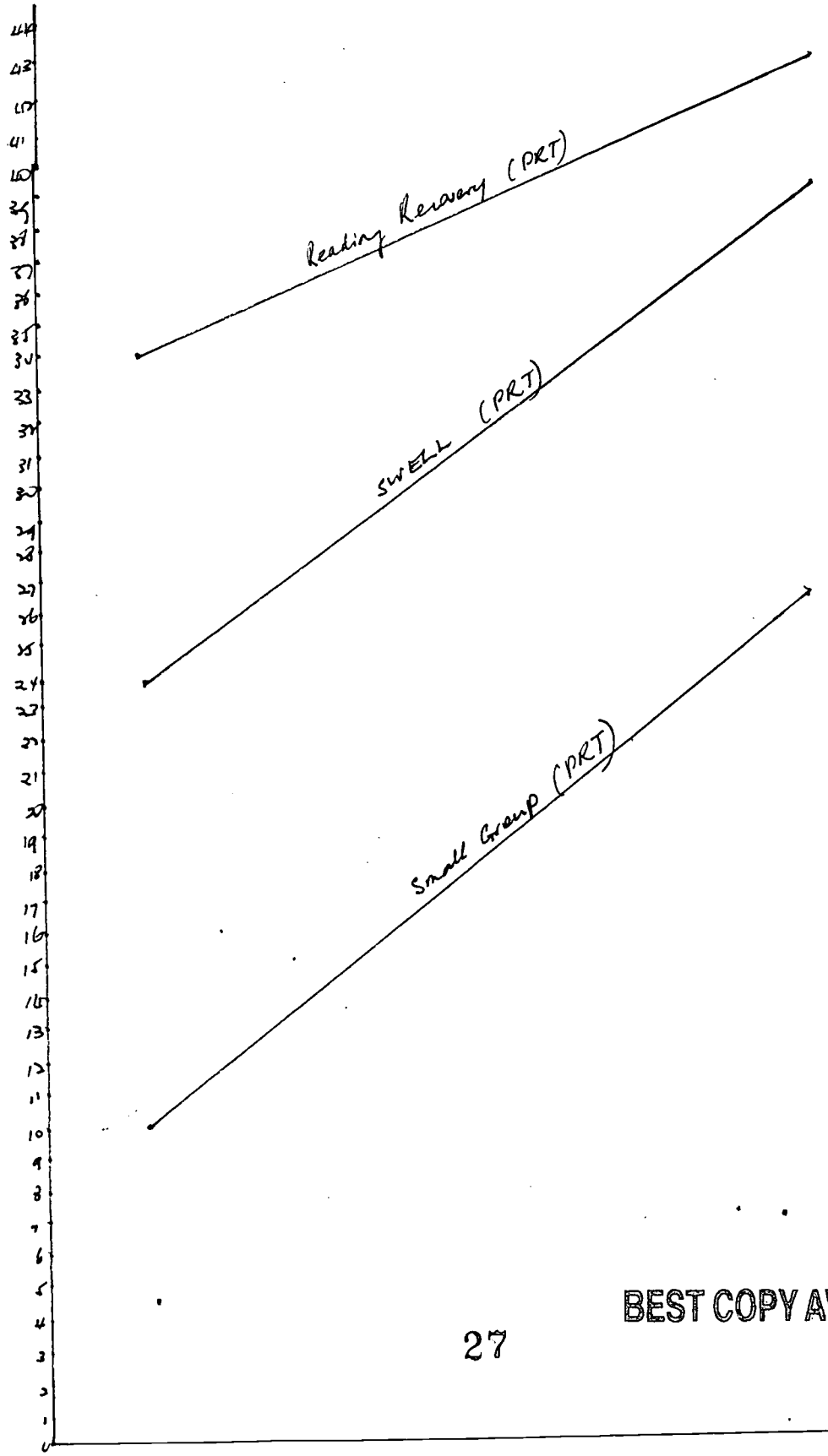
Measure	Control schools (N = 59)	Experimental schools (N = 70)
Passage Reading Test		
M	44.16	54.00
(M) - adjusted	47.68	50.49
SD	28.44	35.04
Word Attack Skills Test		
M	6.96	9.07
(M) - adjusted	7.30	8.72
SD	4.57	4.29
Yopp-Singer Test of Segmentation		
M	7.48	8.76
(M) - adjusted	7.51	8.73
SD	2.52	1.93
Developmental Spelling Test		
M	40.30	45.97
(M) - adjusted	40.94	45.33
SD	10.08	7.63
Writing Test		
M	5.88	6.97
(M) - adjusted	5.94	6.91
SD	1.87	1.79

Table 3: 1995 Means and Standard Deviations for SWELL small class students, Reading Recovery students and small group students in control schools.

Measure	SWELL Small class (N=16)	Reading Recovery (N=13)	Small Group (N=13)
Passage Reading test			
M	22.06	35.46	10.69
SD	15.8	16.69	6.2
Word Attack Skills Test			
M	4.19	7.38	3.00
SD	1.83	4.05	3.29
Yopp-Singer Test of Segmentation			
M	7.94	8.07	6.77
SD	2.3	1.8	3.09
Developmental Spelling Test			
M	37.06	40.62	33.61
SD	3.89	7.81	11.27
Writing Test			
M	4.71	5.8	3.3
SD	2.06	1.48	2.08

Table 4: 1996 Means and Standard Deviations for SWELL small class students, Reading Recovery students and small group students in control schools.

Measure	SWELL Small class (N=17)	Reading Recovery (N=14)	Small Group (N=15)
Passage Reading test			
M	37.18	45.29	21.93
SD	27.14	22.32	17.30
Word Attack Skills Test			
M	6.82	8.07	4.93
SD	2.92	3.65	3.90
Developmental Spelling Test			
M	39.35	42.69	32.47
SD	6.47	7.24	15.37



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