Early Reading for Low-SES Minority Language Children: An Attempt to 'Catch Them before They Fall'

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Key Words

Minority language children · Low SES · Dyslexia prevention

Abstract

Minority language and low socioeconomic status (SES) students are at high risk for language and learning disabilities. In an attempt to 'catch them before they fall', an early reading project was initiated in four kindergarten classes, in a low-SES bilingual school (English/French as a second language), where minority language children form a majority. The project included: (1) teaching reading and writing to kindergarten students, and outcome research: individual pre- and post-treatment assessment using a computer software to measure phonological processing and decoding skills; (2) reading testing of grade 1 students, graduates of traditional kindergartens with no explicit reading instruction programs. Statistical analyses of the pre- and post-tests showed that in only 9 weeks the kindergarten students were able to learn phonological skills critical to the reading process. By contrast, a significant number of the grade 1 students, all graduates of a traditional kindergarten, showed serious reading lags on a group reading test, indicating that early reading instruction is justifiable for this high-risk student population.

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An early reading project was initiated in a low-socioeconomic status (SES) school with mainly minority language students. Minority language status, in this study, refers to a situation where English is not a mother tongue for parents from birth, and it is not the only language from birth for the child. These children, in fact, constitute largely a bilingual or multilingual population. Although these children

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form a large majority in many schools, educators perceive them, inappropriately, as no different from English first-language peers, and consequently, make no accommodations for them in the curriculum or in educational assessments [2, 3]. This perception, in effect, may underlie minority language status children's all-too-frequent academic distress.

Minority group and minority language students are at high risk for language-learning/reading disabilities. They may take 7–9 years to learn academic language to the same degree as their non-minority peers, and they are frequently overrepresented in special education classes in the United States and Canada [4–11]. Recently, a vast number of research findings confirmed that in the population of children with significant reading disabilities, there is a disproportionate representation of children who are poor, racial minorities, and non-native speakers of English [12]. A Canadian government survey of children and youth conducted in 1996–1997, e.g., corroborated that children in lower income families suffer from higher frequencies of academic failure and grade retention [13]. Given these facts, it is eminently clear that the students in this study, from families in the low end of the socioeconomic spectrum and minority language status, are particularly vulnerable to reading disabilities and educational failure.

Reading research in the past 30 years not only confirms the intricate symbiotic relationship that exists between reading and writing and oral language [14], but recognizes developmental dyslexia, a failure to learn to read that is not due to brain injury, as a problem in psycholinguistic processing. In this disorder, a deficit in phonological processing contributes to deficits in reading decoding, while deficits in syntax, semantics, vocabulary, and reading decoding largely account for failure in reading comprehension [1, 15–17]. Reading deficits, in turn, profoundly negatively impact vocabulary, verbal fluency, spelling, and general knowledge development [18]. Reading disabilities do not represent a developmental lag, but rather a persistent deficit that begins in kindergarten and continues to adulthood, with lifelong serious emotional, psychological, and economic consequences [12, 19]. Researchers now emphasize that in high-risk populations, early teaching of accurate and fluent reading is absolutely imperative in preventing this serious disability, and in fact, children as young as 4 or 5 are able to learn to read when given instruction in phonemic awareness and alphabetic coding [20–23].

Many of the bilingual and multilingual children in this school do not acquire language and reading proficiency to a degree that can support an academic programme. This early reading project was motivated by this fact, and by the belief that these high-risk students require interventions to facilitate their educational process. The underlying rationale for teaching reading in kindergarten was the prevention of reading-learning disabilities in these children, i.e., an attempt to catch them before they develop reading lags that cause academic distress.

Research Questions

This project asked two central questions: (1) Is explicit instruction in the 'alphabetic principle' or 'phonics' effective in the development of phonemic decoding in these bilingual and multilingual kindergarten students? Does this explicit instruction affect phonological processing and phonological awareness skills? (2) What are the reading levels of bilingual and multilingual students with no early explicit reading instruction? The project activities designed to answer the first question included daily lessons in four kindergarten classes using a teacher-designed early reading
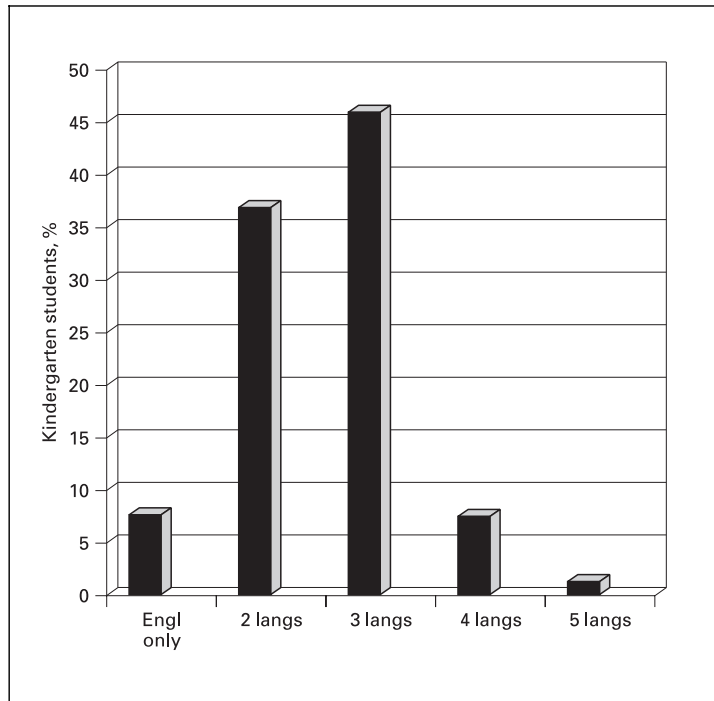
Fig. 1. Percent of kindergarten students from English-only, bilingual, and multilingual homes.

program, and their pre- and post testing in phonemic decoding, phonological processing, and phonological awareness. To answer the second question, the grade 1 students in the same school, with no explicit early reading experience while in kindergarten, were given an end-of-year reading test. The grade 1 reading test result was meant to answer the conceptual question: Is early reading instruction justified in this high-risk bilingual and multilingual population? Here, the discovery of a reading lag would point to the need for early explicit reading instruction.

Method

Participants
Four kindergarten classes were included: 68 boys and girls aged 5:8–6:10 years, and two grade 1 classes from the same school: 50 students aged 6:8–8:2 years.

Many of the kindergarten students attended typical pre-kindergarten classes with no structured reading instruction. The kindergarten sample included two special-needs students: one with multiple handicaps including hearing impairment, and the other, hearing impairment only. The grade 1 students graduated from traditional kindergartens where the main focus is on socialization skills and personal development, with no special accommodations for their minority language status, and no explicit early reading instruction (reading instruction commences officially only in grade 1 in this school). The sample included a mildly cognitively impaired student who was repeating grade 1.

Languages. Information on the language status of the kindergarten students, shown in figure 1, was obtained via questionnaires completed by parents. 92% reported two or more languages used at home, while 56% of these reported three or more languages. 68% of the entire kindergarten sample reported Italian as a mother tongue. Only one family reported English as a mother tongue and the only language used at home. While English was reported as the first and only language for the two special-needs students and 2 children in foster care, their parents/guardians reported lan-

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guages other than English as their own first language(s).

Tests and Materials

Kindergarten Testing. This was accomplished with Reading Edge [24], an individually administered assessment software that uses game formats to measure phonological processing, phonological awareness, and phonemic decoding. Phonological skills were used as a measure because they are known to be powerful predictors of future reading success. The assessment included: (1) initial-sound identification, (2) final-sound identification, (3) non-word decoding, (4) phonological memory, (5) letter/sound correspondence, and (6) letter/name correspondence.

Grade 1 Testing. The Group Reading Test [25] was used. It measures early and intermediate skills in children aged 6:4–8:11. Children are asked to read words and sentences with increasingly difficult vocabulary. The sentences task is based on a 'cloze' strategy where the student is asked to choose a correct word presented along with five foils to complete the sentence. All items require both decoding and comprehension skills. The test yields quotients and percentiles, and reading ages that can be compared to the readers' chronological ages to determine a lag.

Structured Reading. The Jolly Phonics Program [26] was used here. This is a teacher-designed early systematic phonics program. Children are taught the main 42 speech sounds of English and their corresponding letters, using a multisensory approach, including a hand action for each sound. The program focuses on letter/sound and name recognition, letter formation, sound blending, and irregular words. The sounds are practiced using classroom activities, activity sheets, and daily home review.

Procedure

The program was introduced to parents in an evening meeting. The main objective was to delineate their role as partners in this project, and in their children's educational process in general [27]. Teacher training was accomplished in 1 day, prior to the program start. Program review and support meetings were held in the middle and at the end of the program, and assistance was available as needed. The kindergarten children were individually pre-tested with Reading Edge [24] via digital-use headphones (Sennheiser HD 330).

Project. The project began in the latter part of the school year, and lasted 9 weeks, the minimum time recommended for teaching the 42 sounds/letters. Each week was devoted to a specific set of sounds, and the students were encouraged to practice each sound at home on a daily basis. Children whose parents were unable to practice with them and those who showed difficulties remembering the sounds were given daily practice by grade 6 volunteers. Children were post-tested [24] directly following the completion of the program. The grade 1 classes were tested next, in a group format.

Results

Kindergarten

Pre- and Post-Tests. The percent correct responses for each subtest and a total test score, a composite, were calculated for each kindergarten class (the SPSS data analysis program [28] was used here for all statistical analyses). The Phonological Memory and Letter/Name correspondence subtests showed the best performance in every class. The large performance variation between students, a signature for minority language students, was evident from the rather large standard deviations, shown in table 1.

The pre-test results were similar in all the classes as depicted in figure 2, however, some differences were evident. A one-way analysis of variance (ANOVA) was performed to determine the significance of the performance differences. The Bonferroni procedure [29, 30] was applied to avoid capitalizing on chance differences between groups when a number of variables are compared experiment-wise. Accordingly, a probability of 0.01 was adopted to achieve an alpha level of 0.05. Significant differences ($p < 0.008$) occurred on the letter/sound identification subtest, and a Tukey-HSD post-hoc test revealed that class C was significantly different from class A (mean J–mean I >15.93). The pre-test composite scores, however, failed to reach significance when the Bonferroni was applied ($p < 0.02$), i.e. pre-test class performance differences were not statistically significant when
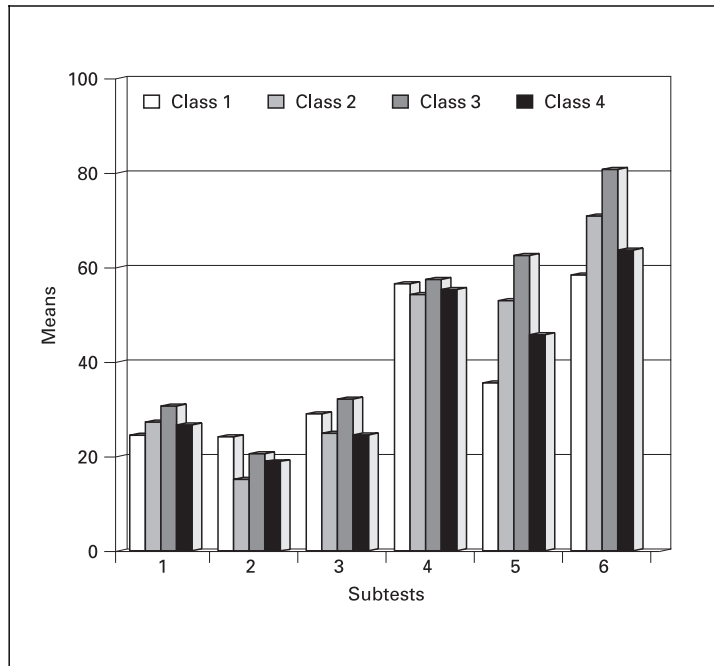
Fig. 2. Phonological skills pre-test results for four kindergarten classes.

Table 1. Kindergarten classes' pre- and post-test percent correct means and standard deviations (SD) for each sub-test and the test composite

Subtests	Class 1 (n = 17)		Class 2 (n = 17)		Class 3 (n = 17)		Class 4 (n = 17)	
	mean	SD	mean	SD	mean	SD	mean	SD
Pre-test								
Initial sound	24.5	10.9	27.5	14.4	31.0	16.7	27.9	8.0
Final Sound	24.5	12.7	15.7	9.8	21.1	14.1	19.2	9.3
Non-word decode	29.4	12.5	25.6	11.2	32.5	16.1	24.8	7.6
Phonological memory	57.4	18.6	55.1	12.0	58.2	15.4	55.7	19.4
Letter/sound	35.9	9.1	53.7	27.2	62.9	24.4	46.5	24.7
Letter/name	59.1	23.5	71.5	26.9	81.2	12.6	64.3	30.7
Composite	38.5	7.7	41.5	10.4	47.8	9.3	39.6	9.5
Post-Test								
Initial Sound	30.0	13.6	32.9	21.5	40.7	22.8	30.0	19.1
Final Sound	25.4	13.3	27.4	13.5	32.4	19.4	26.0	17.6
Non-word decode	41.4	9.8	37.1	18.1	47.2	17.1	44.1	20.5
Phonological memory	61.8	20.0	66.8	14.0	70.5	15.5	70.9	22.14
Letter/sound	74.7	22.0	82.0	17.2	85.7	18.4	66.4	27.0
Letter/name	85.0	13.8	88.8	10.7	86.7	15.1	89.6	13.5
Composite	53.0	10.1	55.8	10.5	60.5	12.0	54.5	13.1

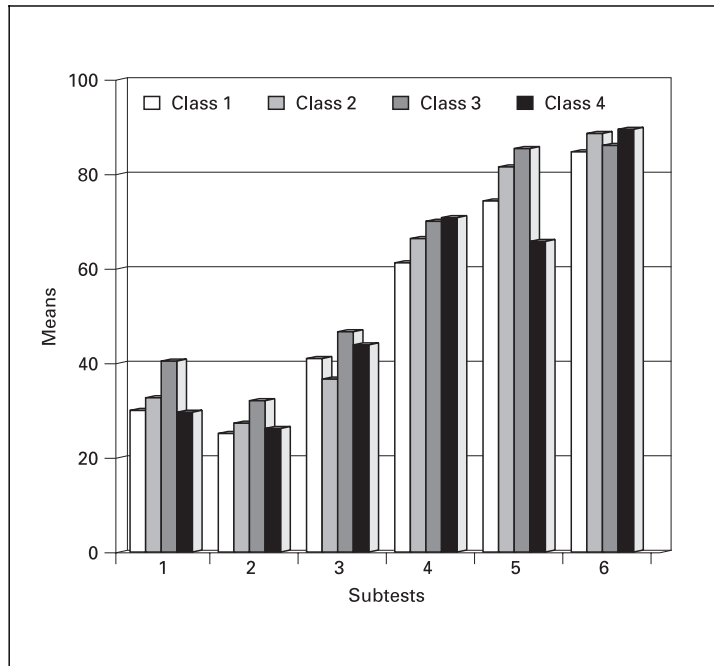Early Reading for Low-SES Minority Children

Fig. 3. Phonological skills post-subtest means for the four kindergarten classes.

the grand mean was used. The post-test results are depicted in figure 3. A univariate repeated measures analysis of the test results confirmed time as a significant ($p < 0.001$) factor in all except the Initial Sound subtest ($p < 0.02$).

Grade 1 Classes

The Group Reading Test yielded reading quotients, percentile ranks, and reading ages. The test frequency distribution of percentile ranks, the ranges, and means are depicted in figure 4. Clearly, class A's (n = 24) distribution, concentrated at the low end of the percentile range (0–35th), is rather narrow and leptokurtic, and while most of the scores congregated at the 20th percentile, one score, an outlier, occurred at the 80th percentile. In class B (n = 26), on the other hand, the percentile distribution shape is mesokurtic and the range considerably wider (10th–70th percentile), but here too the majority of the scores

fall in the low end of the distribution, between the 20th and 30th percentile. Both classes, therefore, show a considerable lag when compared to the peer norming sample.

A one-way ANOVA of the Reading Quotients (the Bonferroni was not applied since only one variable was compared) resulted in a significant between-class difference ($p < 0.06$: a failure to remove the outliers from the analyses resulted in this p value; without these, a smaller p value is certain). The Reading Age ANOVA was significant as well ($p < 0.05$). Figure 5 shows class 1A students' Reading Age compared to their chronological age and figure 6 depicts class 1B students' Reading Age compared to their chronological age. A reading lag in both classes is shown clearly, however, in class 1A, the lag is considerably more obvious.
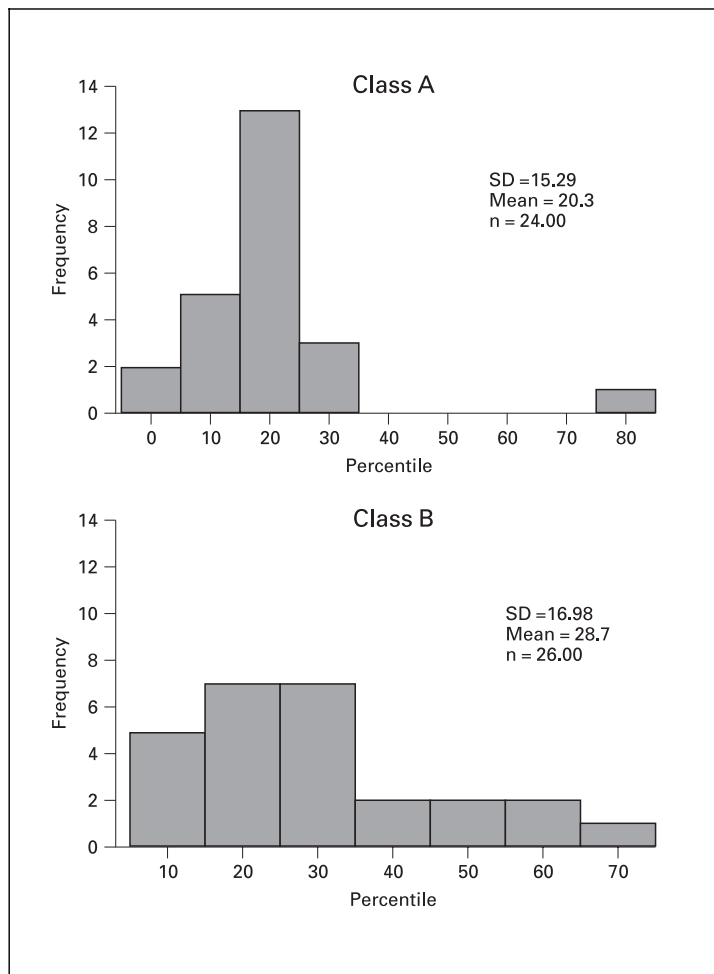
Fig. 4. Frequency distribution of correct responses on the Group Reading test in class A and class B.

Discussion

The kindergarten classes showed significant gains in phonological processing, including phonological memory, and reading decoding skills, in only 9 weeks. The grade 1 students, on the other hand, after an entire academic year, clearly demonstrated a serious reading lag, with one class significantly more affected than the other one. These students, graduates of traditional kindergartens and traditional approaches to minority language students, are in a serious lag mode at the start of their academic lives.

Research and experience tell us that not only does the lag exist, but that it may last for years, and that it will surely compromise the students' academic success. This calls into question the perception of non-difference between minority and non-minority language students, and the traditional 'no-special-treatment-required' approach toward this high-risk population. The findings here lend support to the view that minority language stu-
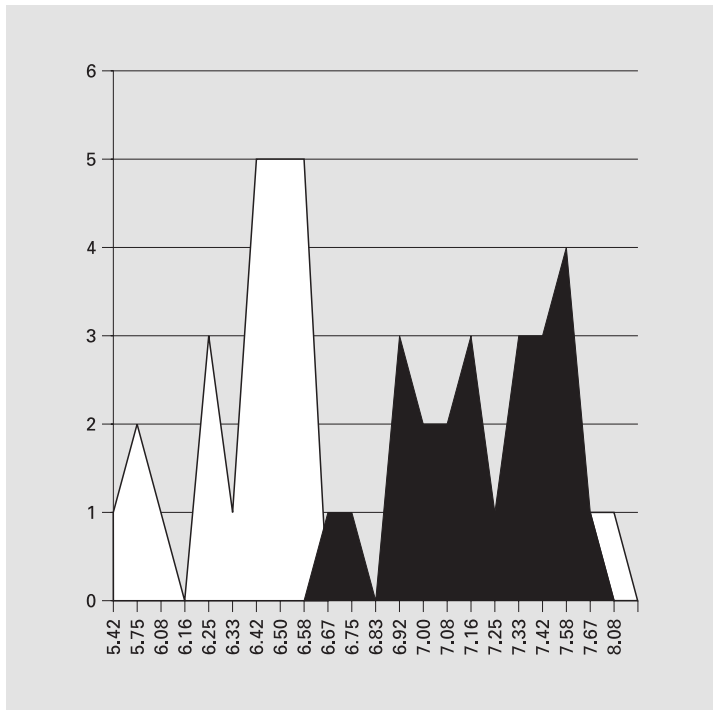
Fig. 5. Class A: chronological age (■) compared to reading age (□) demonstrating the reading lag.
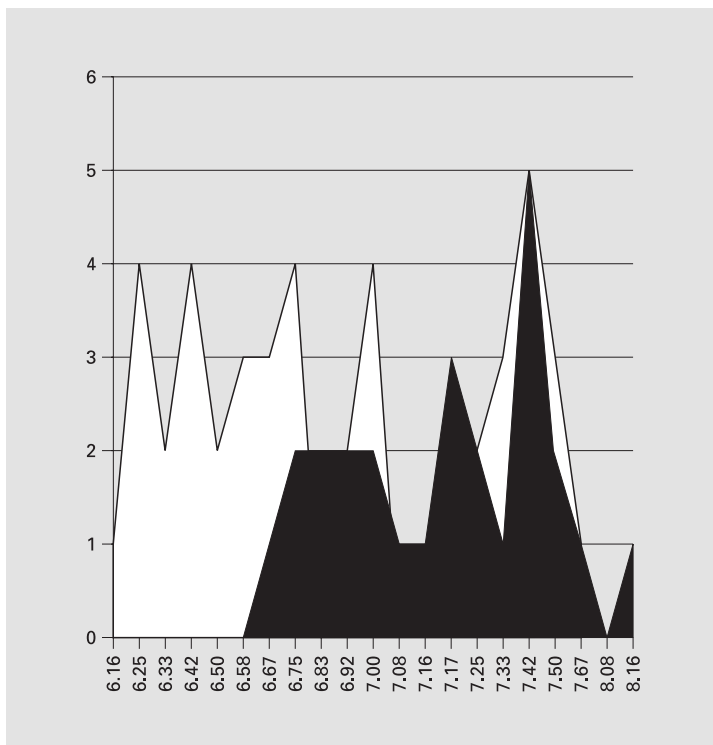

Fig. 6. Class B: chronological age (■) compared to reading age (□) demonstrating an overlap.

dents are indeed at risk for reading disabilities, and require interventions to facilitate their academic process.

There is a great difference in language experiences of young children from diverse socioeconomic and ethnic backgrounds [31, 32]. Since oral language exposure is responsible for the major portion of language and vocabulary growth in young children, many minority language children arrive to school with a notable lag in the school language(s) and its vocabulary. Cunningham and Stanovich [18] note that in school age children, reading volume rather than oral language is responsible for differences in vocabulary development and general language skills. In a reciprocal causation manner, an early lag in the development of automaticity and speed at the word recognition level causes frustration and a consequent avoidance of reading activities. This negatively impacts vocabulary development, general knowledge, language development, and familiarity with complex syntactic structures. These researchers believe that the speed of initial reading acquisition, i.e., that reading decoding, word recognition, and cognitive abilities acquired via reading in grade 1 can predict grade 11 reading outcomes. They emphasize that early success at reading is the key to a lifetime habit that shapes verbal intelligence. Torgesen [1] too notes that children who get off to a poor start in reading rarely catch up. He emphasizes that the prevention of reading disabilities requires early structured, systematic, and explicit instruction, at the beginning of kindergarten.

Early reading, therefore, gives children an enormous advantage in school. Children who learn how to read enjoy the advantages of whole language programs more than those who are struggling to sound out words can. Good reading skills facilitate verbal intelligence. They open the door to language and knowledge acquisition, to academic success, to high self-esteem, and in turn, to economic opportunity. This study clearly showed that many of the children have not mastered basic reading skills by the end of grade 1, only 2 months away from grade 2. This certainly demonstrates that, teaching the phonological code explicitly to high-risk kindergarten students, an attempt to 'catch them before they fall', is both justifiable and desirable, and hopefully instrumental in preventing reading disabilities in bilingual and multilingual children.

The question of whether this early reading experience will be a noted advantage in later grades remains to be answered. A follow-up study to determine the reading levels of these kindergarten students at the end of their grade 1 is planned. This will allow a comparison of these students, with an early reading experience, with that of the present cohort of grade 1 students who are without this experience, to determine the effectiveness and advantages of early reading instruction for this high-risk population.

References

1 Torgesen JK: Catch them before they fall: Identification and assessment to prevent reading failure in young children (on-line). National Institute of Child Health and Human Development. Available: ldonline.org.ld_indepth/reading/torgesen_catchthem.html. 1998;1–15.

2 Cummins J: Knowledge, power, and identity in teaching English as a second language; in Genesee F (ed): Educating Second Language Children. New York, Cambridge University Press, 1994, pp 33–58.

3 Cline T, Fredrickson N (eds): Curriculum Related Assessment, Cummins, and Bilingual Children. Clevedon, Multilingual Matters, 1996.

4 Cummins J: Bilingualism and special education: Issues in assessment and pedagogy. Clevedon, Multilingual Matters, 1984.

5 Collier VP: How long? A synthesis of research on academic achievement in a second language. TESOL Q 1989;23:509–531.

6 Hawkins E: Foreign language study and language awareness. 4th Int Conf Assoc Lang Awareness, Quebec City, 1998.

7 Hus Y: Central Auditory Processing Disorders in Minority Children; unpublished doct diss Concordia University, Montreal, 1997.

8 Gamlin PJ: Issues in dynamic assessment/instruction. Int J Dyn Assess Instruction 1989;1:13–25.

9 Good-Erickson J: How many languages do you speak? An overview of bilingual education. Top Lang Disord 1985;5:1–14.

10 Genesee F (ed): Educating Second Language Children. New York, Cambridge University Press, 1994, pp 1–10.

11 Cloud N: Special education needs of second language students; in Genesee F (ed): Educating Second Language Children. New York, Cambridge University Press, 1994, pp 243–277.

12 Alexander DF: Key to successful learning: A national summit on research and learning disabilities. NICHD Research Program in Reading Development, Reading Disorders, and Reading Instruction (online). Available: ldonline.org.ld_indepth/reading/ncld_summit99.html. 1999, 1–10.

13 Statistics Canada: National Longitudinal Survey of Children and Youth: A project of Human Resources Development and Statistics Canada. The Daily: Statistics Canada Cat No 11–001E, 1998.

14 Butler KG, Cheng LL: Emerging issues in child language. Folia Phoniatr Logop 1998;50:239–242.

15 Kamhi AG, Catts HW: Reading Disabilities: A Developmental Language Perspective. Boston, College-Hill Press, Little, Brown, 1989.

16 deMontfort Supple M: The relationship between oral and written language. Folia Phoniatr Logop 1998;50:243–255.

17 deMontfort Supple M: Dyslexia: Oral and written language disorder. Folia Phoniatr Logop 2000;52:7–13.

18 Cunningham AE, Stanovich KE: What reading does for the mind. Am Educator 1998;8–15.

19 Grossen B: 30 years of research: What we now know about how children learn to read. NICHD document commissioned by The Centre for the Future of Teaching and Learning: A Pacific Bell Foundation (on-line). Available: cftl.org/30years/30years.html?id=3D3656092. 1998; 1–20.

20 Lloyd S: The Phonics Handbook. Chigwell, Jolly Learning, 1998.

21 Willows D, Morgan J, Sumbler K: Systematic phonics within a balanced literacy program. Nat Read Conf Symp, Charleston, 1996.

22 Willows D, Morgan J: Early phonological awareness training for at-risk children in junior kindergarten. Nat Read Conf Symp. Charleston, 1996.

23 Stornelli D, Willows D: Effect of more and earlier phonics instruction on kindergarten literacy outcomes. Nat Read Conf Symp, Austin, 1998.

24 Scientific Learning: Reading Edge: Measuring Early Reading Skills. Document No 1078/1.0. Berkeley, Scientific Learning Corp, 1999.

25 Young D: Group Reading Test, ed 4. London, Hodder & Stoughton Educational, 1999.

26 Lloyd S, Wernham S: Jolly Phonics: A program for teaching reading, writing and spelling. US and Canada edition. Chigwell, Jolly Learning, 1998.

27 Creative Street: The Little Things Make a Big Difference: A Videotext of How to Help Children Succeed in School. Elk Grove Village, World Book Educational Products, 1991.

28 Norušis MJ: SPSS Statistical Data Analysis. Chicago, SPSS, 1990.

29 Netter J, Wasserman W, Kutner MN: Applied linear statistical models, ed 3. Homewood, Irwin, 1990, pp 159–165.

30 Stevens J: Applied Multivariate Statistics for Social Sciences. Hillsdale, Erlbaum, 1986.

31 Hart B, Risely TR: Meaningful Differences in the Everyday Experiences of Young American Children. Baltimore, Brooks, 1995.

32 Campbell T, Dollaghan C, Needleman H, Janosky J: Reducing bias in language assessments: Processing dependent measures. J Speech Lang Hear Res 1997;40:519–525.