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Author(s): Warwick B. Elley and Francis Mangubhai

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The impact of reading on second language learning

WARWICK B. ELLEY

University of Canterbury, New Zealand

FRANCIS MANGUBHAI

University of the South Pacific

FIVE CRITICAL differences between first and second language learning were identified and discussed. It was hypothesized that the effect of these differences in formal education could be virtually eliminated by means of a reading program based on the use of an abundance of high-interest illustrated story books. A sample of 380 Class 4 and 5 pupils from eight rural Fijian schools with very few books was selected, and each class was provided with 250 high-interest story books in English. The 16 participating teachers were given directions in two different methods of encouraging the pupils to read the books. Pre- and posttests were given to all pupils and to matched control groups of 234 pupils who followed the normal structured English language program, which puts little emphasis on reading. Posttest results after eight months showed that pupils exposed to many stories progressed in reading and listening comprehension at twice the normal rate, and confirmed the hypothesis that high-interest story reading has an important role to play in second language learning. After 20 months, the gains had increased further and spread to related language skills.

L'impact de la lecture sur l'étude d'une deuxième langue

ON A IDENTIFIÉ et discuté cinq différences critiques entre l'étude d'une première et deuxième langue. On a posé comme hypothèse que l'effet de ces différences en éducation formelle pourrait être pratiquement éliminé au moyen d'un programme de lecture basée sur l'usage de nombreux livres d'histoires illustrées à grand intérêt. On a sélectionné un échantillon de 380 élèves de classe de huitième et septième à partir de huit écoles fidjiennes de zone rurale avec très peu de livres, on a donc donné à chaque classe 250 livres d'histoires à grand intérêt en anglais. On a fourni aux seize enseignants participant des directions avec deux méthodes différentes pour encourager les élèves à lire les livres. On a donné des pre- et post-tests à tous les élèves et à des groupes de contrôle de valeur égale comprenant 234 élèves qui ont suivi le programme normal et structuré de langue anglaise lequel accentue peu la lecture. Les résultats des post-tests après huit mois ont montré que les élèves mis en contact avec de nombreuses histoires ont progressé en lecture et en compréhension d'écoute à un taux double du taux normal, et ont confirmé l'hypothèse que la lecture d'histoires à grand intérêt joue un rôle important dans l'étude d'une deuxième langue. Après 20 mois, les bénéfices avaient augmenté davantage et s'étaient étendus à des compétences ayant rapport à la langue.

El impacto de la lectura en el aprendizaje de un segundo lenguaje

SE IDENTIFICARON y se discuten 5 diferencias críticas entre el aprendizaje del primer y segundo lenguaje. Se planteó la hipótesis que el efecto de estas diferencias en el proceso de instrucción formal podía virtualmente ser eliminado por medio de un programa de lectura, basado en el uso de una abundancia de libros de cuentos ilustrados y de gran interés. Se seleccionó una muestra de 380 alumnos de las cuartas y quintas clases de 8 escuelas rurales de las Islas Fiyi que tenían muy poco libros, y se proveyó a cada clase 250 libros de cuentos de gran interés en inglés. Los 16 maestros participantes recibieron instrucción en dos métodos, para estimular a los alumnos a leer los libros. Se dieron tests de comprobación experimental y final a todos los alumnos y a grupos apareados de control, compuestos por 234 alumnos que seguían el curso regular de idioma inglés, que

pone poco énfasis en la lectura. Los resultados de comprobación final después de 8 meses mostraron que los alumnos que fueron expuestos a muchos cuentos progresaron a un nivel doble del normal en lectura y comprensión auditiva, y confirmó la hipótesis de que la lectura de cuentos de mucho interés juega un importante papel en el aprendizaje de un segundo lenguaje. Después de 20 meses, el incremento en el aprendizaje fue todavía mayor y se había extendido a otras destrezas relacionadas con el aprendizaje de un lenguaje.

The main conditions under which children develop competencies in first and second languages are the subject of much research and debate. How do children, given a mass of haphazard linguistic input, master the basic structures and vocabulary of their home language before they go to school? Is exposure sufficient? How important is repetition? Must motivation be intrinsic? Why is the second language learned so laboriously and ineffectually in the classroom, yet so readily when the learner is part of a community that speaks the second language?

Indeed, recent case studies of second language (L2) learners (e.g., Fillmore, 1976; Milon, 1974; Ravem, 1974) suggest that L2 acquisition in naturalistic contexts has much in common with first language (L1) acquisition, thus raising the possibility that carefully structured L2 educational programs of the audio-lingual variety may be misconceived. Dulay and Burt (1974) have supported this view with studies of error behavior in L2 learners, and found similar developmental sequences in L1 and L2 acquisition, regardless of age, learning method, and nature of the first language.

Numerous empirical studies have demonstrated that L2 learning can be very effective using strategies derived from our understanding of L1 learning, such as total immersion in L2 from school entry (Bruck, Lambert, & Tucker, 1974), partial immersion (Barik & Swain, 1975), and prolonged passive exposure before oral expression (Tucker & d'Anglejan, 1973).

With a view to furthering our understanding of how to bring L2 learning more into line with L1 acquisition, the present article enumerates the critical differences between typical L1 and L2 learning and proposes a practical instructional strategy for reducing the effect of these differences. The

central hypothesis arising from this strategy is that repeated exposure to high-interest illustrated story books in the target language will produce rapid L2 learning. To test this hypothesis, an empirical study was conducted in 12 primary schools in the Fiji Islands.

The following factors appear critical in differentiating between L1 and L2 learning in contexts where the language of the school is not the language of the home, as is the case in all South Pacific countries.

Strength of motivation. As a growing organism, a young child has an urgent need to communicate (Halliday, 1973) and to comprehend the communications of others. By contrast, the L2 learner already has a perfectly good language to communicate his or her needs; hence there is a greater dependence on extrinsic (or instrumental) motivation to learn the language—to pass an examination, to please a teacher. Many bilingual scholars (Dodson, 1978; Macnamara, 1973) have deplored the consequences of this difference and spelled out its undesirable effects in L2 classroom practice and child behavior.

Emphasis on meaning vs. form. Young L1 learners make use of their language to convey and receive new meanings. Typical parents are more concerned with the meaning than with the form of their children's language (Brown & Hanlon, 1970). Widdowson (1978) makes a telling point when he claims that "by focusing on usage, the language teacher directs the attention of the learner to those features of performance which normal use of language requires him to ignore" (p. 17). However, in typical L2 classrooms, the focus is clearly on form, practice, and repetition of structure. Rarely is the purpose to convey new meaning.

Amount of exposure to language. L1 learners are continuously surrounded by their

vernacular language. In the typical South Pacific family, children will be exposed to over 40,000 hours of their home language by the end of six years of schooling. By contrast, at most, there will be only 3,000 hours of English instruction. Other things being equal, any strategy which can reduce this gap would also reduce the obvious disparities which exist in competence levels.

Type of exposure to language. Exposure to the second language is normally planned, restricted, gradual, and largely artificial, quite unlike the typical interactions which young children have with their mother tongue. While it may be a common sense strategy to control the L2 learner's exposure to some extent, it may easily become counterproductive. Children learn much from the redundancy in their language environment. Linguists have shown that gestures, facial expressions, intonations, and events of the moment correspond with and support the language children see and hear. As Donaldson (1978) points out, "it is the child's ability to interpret situations which makes it possible for him... to arrive at a knowledge of language" (p. 38). Studies of vocabulary acquisition in L1 learning also indicate that children learn many new words naturally from context, and less effectively from deliberate drilling. Thus, reducing the range of situations, and vocabulary loads, could well be ineffective. Furthermore, experiments aimed at increasing comprehension of prose by deliberately simplifying vocabulary and structural complexity have often proved disappointing (Peltz, 1973).

The quality of models. Practically all L2 instruction in the South Pacific is undertaken by non-native speakers of the language. This frequently means that pupils are exposed to faulty models of language. By contrast, L1 teachers are usually more fluent, can clarify more readily, and can provide greater variety of form and meaning.

The task facing the L2 teacher is to reduce the differences listed above and to increase the efficiency of L2 learning. This task can be attempted profitably through the use of an abundance of high-interest, illustrated story books, printed in the target language. When children read high-interest story books,

they are engaging in an activity which reduces the effect of the five listed differences. It thus makes L2 acquisition considerably more like L1 acquisition, and consequently facilitates the acquisition process.

Such a proposition is alien to conventional L2 teaching methodologies, in all countries of the South Pacific region, and in many education systems where audio-lingual approaches are favored. In all the South Pacific territories, English is taught in schools through an Oral English Syllabus (Tate, 1971), in which selected structures and words are identified, taught orally in a particular sequence, and practiced until mastered. Only then are the children exposed to the same language items in the printed form. Reading follows along behind the oral learning process, as a means of consolidating the pupils' learning, not of providing for the learning of new forms. Thus, all reading material is carefully controlled, and exposure to English is very limited throughout the child's primary school years. As in most structural and audio-lingual programs, errors are kept to an absolute minimum. Children get little practice or encouragement for guessing the meanings of unfamiliar words. In terms of the L1-L2 differences listed earlier, it is perhaps not surprising that this program has not been eminently successful (Elley & Mangubhai, 1979). The oral drills practiced by the pupils have little justification as a form of genuine communication; the repetitions are contrived and often monotonous; the exposure is minimal and carefully controlled; the teachers, as models, are themselves teaching in their second language and are prone to error; and the learners are frequently only half-hearted in their efforts to induce the rules of the language for themselves.

The Oral English Syllabus is not unique. Rivers' (1968) description of typical audio-lingual programs in L2 makes it clear that "the student must never be allowed to read alone a script which he has not learned orally first, or else heard a number of times" (p. 220). Similarly, Ching (1976) maintains that "... before bilingual children can learn to read English, they must be able to understand and speak it effectively" (p. 4). The idea that

children might actually learn new language from contextual cues in print is given no credence in such programs. Nor is there any recognition of the widely demonstrated finding that a multi-sensory approach, in which children see and hear new language items simultaneously, is superior to the single-sensory method followed in audio-lingual programs (see Dodson, 1976; Lado, 1977). Learning language through reading is actively discouraged.

By contrast, the reading of story books could play a dominant role in determining what language children learn, when they learn it, and most important, how they learn it.

High-interest story books provide a basis for language learning which goes a long way to bridge the gap between L1 and L2 learning contexts. Good story books provide strong intrinsic motivation for children and an emphasis on meaning rather than form. When read often, these books increase exposure to the target language. They become the basis for discussion about the pictures and story. Through expressive activities, the stories assist children to learn naturally, from context, and provide excellent models of written English.

There is, of course, empirical data from L1 learning which supports the value of regular reading by children (e.g., Chomsky, 1979; Clark, 1976; Durkin, 1966; Milner, 1951; Ritchie, 1978). However, little empirical work has been done within an L2 context to explore the proposition that L2 learning would be more effective when based on story reading and related activities.

In most of the islands' education systems of the South Pacific, English is learned as a second language, usually after literacy has first been acquired in the vernacular. Thus, after Class 3 (8-year-olds), English is the language of the school, although it is seldom the language of the community. Under these circumstances, there is a golden opportunity to investigate the proposition that increased L2 exposure through extensive reading of story books provides a beneficial approach to language learning. Practically all the child's exposure to English takes place within the school. Whatever English program the teacher follows is therefore critical. It is seldom

affected by such community influences as peer groups, television, church, or even parental example. Thus, any differences in the potential impact of language programs should reveal themselves in bold relief, unlike the situation in most English-speaking countries.

What evidence is available from the South Pacific on the effects of reading on acquisition of English as a second language? Numerous visiting teachers have investigated the issue informally, with promising results. Thus, McKeating (Note 1), a former teacher and English adviser with the Fiji Ministry of Education, used book-based programs in separate experiments in the Solomon Islands and Fiji secondary schools during the 1970's, and reported dramatic improvements in pupils' external examination pass rates. At primary school level, a more carefully controlled evaluation of the effects of a book-based program on the island of Niue also produced marked improvements, particularly in reading comprehension, word recognition, and oral sentence repetition. Class 3 and 4 children (8-10 year olds), whose teachers were trained to teach by the Shared Book Experience method, using a set of locally produced, high-interest readers, made rapid progress when compared with children who used the traditional Tate Syllabus (see De'Ath, 1980; Elley, 1980).

Further indirect support comes from a national survey of reading in Fiji at Class 6 level (12-13 year olds). In this study, there was clear evidence that access to books in school was an important factor in distinguishing between good and poor readers. Even after home background factors were partialled out, schools with large libraries produced good readers; schools without libraries did not (Elley & Mangubhai, 1979). While such a relationship has been found in other developing countries, it is not clearly a causal link. The presence of a large library in a school may merely indicate an enthusiastic staff, who believe in the importance of books. However, it is an important relationship to explore, as a plentiful supply of good books is a factor that can be manipulated, far easier to produce and control than general improvements in the quality of instruction or teacher control over English. Therefore, the present authors re-

solved to conduct a “Book Flood” in a set of rural primary schools, where English language standards were low and resources meagre.

Method

Design

The design involved the random assignment of pupils in Classes 4 and 5 (9-11 year olds) to one of three treatments—the Shared Book Experience, Sustained Silent Reading of books, or the control group, employing the traditional Tate Oral English Syllabus. Using analysis of variance on residual gain scores, pretest reading comprehension scores were used as a covariate, and two a priori contrasts were employed to evaluate treatment effects. Contrast 1 compared the two groups (Shared Book and Sustained Silent Reading) that employed large numbers of books with the control groups. The second contrast compared the Shared Book method with the Sustained Silent Reading method. The hypothesis behind contrast 1 can be called a “Book Flood hypothesis”: exposure to large numbers of story books will have an effect on general language competence. The hypothesis behind the second contrast was that the exposure to new language in the Shared Book method is more persistent and concentrated, and that pupils become more actively involved in the learning experience than in the Silent Reading Method.

Finally, these contrasts were expected to show up more dramatically on measures of

receptive language use (reading and listening comprehension) than on measures of productive language use, since both methods emphasize the former. However, some transfer was expected to these latter measures.

The Shared Book Experience group required some teacher training, as it was a new approach for the eight teachers concerned. A specialist adviser in this method was brought from Auckland, New Zealand, to conduct a three-day workshop early in March 1980, before the first books were placed in schools. He also visited the schools to give a brief demonstration lesson in each one. Teachers in the Silent Reading Group were not given a special course, but a set of notes outlining the method was prepared by the experimenters and discussed with the teachers during an early visit to the schools. The Control Group teachers were given a one-day refresher course by Ministry of Education staff in the principles of the Tate Method, in order to reduce any effect which might be caused by the additional stimulus of the special course provided for the Shared Book teachers.

All teachers were aware of the fact that they were participating in an experiment, but none knew the nature of the tests that their pupils would be exposed to in November. All teachers adhered to the normal timetable, but Book Flood schools replaced 20-30 minutes of Tate Reading activities each day with Shared Book or Silent Reading activities. No extra time was devoted to English in any group. Figure 1 shows the project design for the first year.

Figure 1
Design of Book Flood Project - 1980

	February	March	April-October	November
Shared Book Experience Group	Pretests	3 day Workshop	250 books supplied to Classes 4 & 5	Posttests
Silent Reading Group	Pretests	No Workshop	250 books supplied to Classes 4 & 5	Posttests
Control Group	Pretests	1 day Workshop	Usual program No extra books	Posttests

Sample

Classes 4 and 5 were chosen initially because Class 6 was an examination year for Fijian pupils, and it was felt that school principals would be reluctant to reduce the time of formal English lessons for such an unusual approach to language learning. Class 3 children were considered less suitable because their English was so limited that it would be difficult to identify suitable reading materials. It is again stressed that all pupils in Fiji spend the first three years of schooling acquiring literacy skills in their vernacular language, and switch to English as the medium of instruction during Class 4.

Rural schools were used in this investigation because their pupils are less exposed to the neutralizing effects of English in the community than are city children. The particular schools chosen were typical of many in Fiji, in that they were controlled by a local committee, had between 15 and 40 pupils at each class level, had pupils and teachers of predominantly one ethnic group, and had very few resources—books, audio-visual aids. All schools followed the same timetables, which are standardized throughout Fiji. All teachers had been locally trained in the traditional two-year training college course, and all followed the Tate Oral English Syllabus which is universal in Fiji.

Six Fijian and six Indian schools were chosen at random for possible inclusion in the project. All headmasters who were approached agreed to participate, and pretesting took place in late February 1980. After scoring and analysis, schools within each ethnic group were placed in two achievement levels, as indicated by mean score. Within each level, the schools were assigned randomly to one of three groups: Shared Book, Silent Reading, or Control. One Fijian school had to be transferred from Shared Book to Control Group because the Class 4 teacher was on leave and unable to attend the training session when required. Each of the three groups had two Fijian and two Indian schools, and each had a cross-section of teachers of both sexes with various levels of experience. Matching on pretest scores was very close for Class 5,

but required later adjustment for Class 4 (see Table 1).

Teaching Procedures

The eight "Book Flood" schools received their books in five lots of approximately 50 for each class, at intervals of 4 to 5 weeks. The experimenters visited the schools at that time to check on the procedures being used, to observe lessons, and to inspect materials produced. The main features of the three groups are outlined below.

Shared Book Experience Method. Hold-away (1979) developed this method in New Zealand primary schools where it is now extensively used by European and Polynesian children. The teacher chooses a high-interest story with appropriate language and illustrations and introduces it to the pupils in a "sharing experience," similar to that of a bedtime story. Discussion is encouraged about the pictures, the likely contents, and a few new words. The teacher then reads all, or some of it, to the class. To ensure that all of the group can see the text and illustrations, the book is frequently "blown-up" or rewritten in the form of a giant book, with suitably-sized illustrations.

During the second or third readings, on subsequent days, children are encouraged to join in and read easier sections with the teacher, who continues to encourage discussion about the contents of the book. Emphasis is placed on prediction and confirmation of events in the story, so that children are constantly striving for meaning. If children enjoy the experience, they will want to read it often, in the class group, in small groups, in pairs, or as individuals. The intention is that they master the language of the book, with a minimum of pressure and strain.

Follow-up activities include role playing, word study, art work, writing activities. The origin of these activities is always determined by the story, not by any pre-ordained system of the proper sequence of structures and vocabulary to follow. Theoretically, the essence of the method is that new learning takes place at the point of interest, rather than in accordance with a carefully graded linguistic pattern.

Silent Reading Method. The eight teachers who used the Silent Reading Method were given no special workshop. They were advised by the experiments to display the books attractively, to read them aloud regularly, and to spend 20-30 minutes each day in sustained silent reading, with books of the children's own choice. The principles of this method were developed by McCracken (1971). Briefly, the rationale is that children best learn to read by reading, as often as possible. A definite period is set aside every day for reading during which time the teachers must set a good example by reading also. No book reports are required, and no written exercises performed. The children are reading for enjoyment and practice.

Control Group. The eight teachers in the Control Group were advised to follow their normal curriculum in English, which was the SPC/Tate audio-lingual program referred to above. Children have two 15-minute oral English lessons each day in which new structures are systematically introduced, in appropriate classroom situations, with repeated drills, variations, substitutions tables, etc. Reading is taught through carefully graded SPC readers (in Class 4) or the Fiji Ministry's text "Stories for Us" (in Class 5). Both series of books are graded and activities are intended primarily to provide practice in order to consolidate the structures and vocabulary taught in the oral lessons.

In general, most teachers followed directions. However, one Shared Book teacher used the method rarely as he felt it was unsuitable for him and his pupils; one Control Group teacher was found to read regularly to her class, a practice very rare in Fiji schools. Several teachers were replaced while on leave for maternity or sick leave, for periods up to 10 weeks, but these disturbances, which are common in Fiji primary schools, appeared to be equally distributed across all three groups. Their net effect was probably to make it more difficult to demonstrate real differences between the various approaches. A school-by-school analysis suggests that such disturbances produced measureable effects in their children's progress (see Table 5, p. 64).

Assessment Procedures

In order to assess the impact of the books and to compare the two approaches used by the teachers to introduce pupils to the books, all pupils in Classes 4 and 5 in the twelve schools were tested in reading comprehension under standardized conditions in February. This test served as a matching variable and as a baseline for estimating the growth made by the various groups. Early in November, almost eight and a half months later, the same pupils were given an extensive range of tests of reading and other English language abilities. All tests used in the first year are outlined below. (A twelve month follow-up assessment, using other tests, is described later.)

For Class 5, the pretest for reading comprehension was a sentence-completion test of 35 multiple-choice items, developed by the senior author and used for research purposes in several Pacific Islands. The reliability of the test is high (Split-half $r = 0.90$), and correlations with other reading tests on single grade groups range from 0.78 to 0.83.

The posttests used were as follows: *STAF Reading Comprehension* (Form Y) contained six passages and 32 multiple-choice items developed as a standardized test of achievement for Fiji (STAF) but not available in schools in November 1980. Split-half reliability is reported as 0.92, and correlations with other reading tests and relevant external examinations are consistently high (See Elley & Achal, 1980). The *STAF Listening Comprehension Test* (Form Y) consisted of 36 multiple-choice questions based on seven short passages read aloud by the administrator. Split-half reliability was estimated as 0.88, and correlations with other English tests in the series range from 0.59 to 0.72 (Elley & Achal, 1980). *English Structures Test* had 20 open-ended items. It was specifically designed for the project and trial-tested on comparable pupils. Pupils completed, in writing, short sentences in their own words using structures taught in Class 5 in the SPC/Tate Oral Syllabus. Assessment focused on the appropriateness of the structure used. The papers

were marked by the authors "blindly," without knowledge of which group the pupils belonged to, and checked-marked by an Adviser in English. Correlations between scores of the three markers across three schools were all 0.98 or above. The *English Composition Test* required students to complete a short story about an old lady who lived alone with her cat and her hen. Equal weight in marking was given for content, sentence sense, and mechanics (2 marks each). Marking was done blind and check-marked by an English Adviser. Correlations between markers' assessments were all above 0.90.

The pretest used for Class 4 was the same as for Class 5. The posttests for Class 4 were as follows: *Reading Comprehension Test* was the same as for the pretest. The *English Structures Test* consisted of 35 multiple-choice items assessing pupils' ability to choose the correct structures in a series of sentences. All structures were taken from the Class 4 Tate Syllabus. The test was trial-tested and revised before use. Split-half reliability was 0.83 in three schools, and the correlation with the Reading Comprehension test was 0.73. For the *Word Recognition Test*, each Class 4 pupil was interviewed individually, and every second pupil was given a Word Recognition Test during this interview. Pupils had to recognize and correctly pronounce a series of 50 graded words. They were stopped after missing four consecutive words, the total score being the number of words correctly pronounced up to that point. The test was identical to that used in a previous study (Elley, 1980) in which it proved to be reliable and sensitive to changes in reading levels. The *Oral Sentence Repetition Test* was given to each child who did not take the Word Recognition Test. It is an adaptation of a test used by Clay, Gill, Glynn, McNaughton, and Solomon (1976). Pupils repeat orally, after the tester, a series of 28 English sentences graded for complexity of structure. Children who are unfamiliar with a given structure are presumed to have more difficulty in repeating it correctly. There is evidence that the test is more a matter of language mastery than of memory (see Hanayan, Markman, Pelletier, & Tucker, 1978).

Results

Pretest Scores

The pretest reading comprehension results for each group, along with the percentage of Fijian (as contrasted with Indian) pupils are given in Table 1.

The groups were closely matched except for the Class 4 Control Group. However, it was impracticable to rearrange them without changing the Class 5 pattern, so it was resolved to make adjustments for all pretest differences in the posttest analyses.

As the same pretest was given at both class levels, it was possible to estimate the normal amount of growth in 12 months by comparing the mean score for the total group at each level. The difference between the means was 3.97 points or 11.35%. This figure was used later as a guide to assess the amount of progress made by pupils in the project.

Posttest Results

Although an attempt was made to match the three groups on pretest scores at both class levels, it was found that some discrepancies still existed at Class 4 level. To match precisely, it would have been necessary to drop nearly 40 cases from the Class 4 control

Table 1 Pretest reading comprehension raw scores

Class 4				
Group	N	M	SD	% Fijian
Shared Book	81	15.07	5.72	51%
Silent Reading	98	14.67	4.78	49%
Control	121	12.14	4.12	40%
Totals	300	13.76	5.21	46%
Class 5				
Group	N	M	SD	% Fijian
Shared Group	105	17.99	5.90	47%
Silent Reading	96	17.70	5.59	52%
Control	113	17.50	5.36	43%
Totals	314	17.73	5.88	48%

Table 2 Residual gain scores for Class 4, 1980

	Shared Book			Silent Reading			Control		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Reading Comprehension	75	0.59	4.06	84	1.21	4.78	106	-1.40	4.17
English Structures	71	0.99	4.68	84	0.63	4.71	106	-0.95	3.48
Word Recognition	37	2.08	9.83	43	-0.35	12.73	54	-1.33	11.63
Oral Sentences	34	1.56	5.74	38	-0.68	5.16	49	-0.71	4.36

group. In case this procedure were to distort the findings in any way, the results reported here are based on regression estimates, in which all pupils were retained in all groups. Using the pretest as a predictor, each pupil's score was estimated, and subtracted from the actual score, and analyses of variance were performed on these residual gain (or loss) scores.¹

Class 4 results. Table 2 shows the residual gain score means for Class 4. It should be noted that the correlations between the predictor test and each of the posttests was positive and high, the lowest being 0.48 for Oral Sentences, and 0.69 for Word Recognition.

For Reading Comprehension, an analysis of variance showed that the differences were significant, $F(2, 258) = 9.30, p < .001$. A partitioning of the variance for the treatment effect was undertaken in order to test the two planned a priori contrasts, that the Book Flood groups surpassed the Controls, and that the Shared Book group surpassed the Silent Reading group. On the first contrast, the Book Flood groups were clearly superior, $F(1, 258) = 17.70, p < .001$. The second contrast showed no significant differences between the Shared Book and Silent Reading Groups, $F(1, 258) = 0.81$.

An inspection of the raw scores revealed that, between late February and early November, the two book groups gained by a mean of 4.9 points, compared with an expected 3.97 points over 12 months (estimated from the pretests given to both Classes 4 and 5 in February). In other words, the book groups produced 15 months reading growth (on grade norm scores) in 8 months. By contrast, the Control Group showed 2.1 points growth,

which is equivalent to approximately 6.5 months in grade norm units. The pupils exposed to a rich supply of books were improving their general reading comprehension skill at over twice the normal rate.

A similar pattern was found in the test of English Structures. An analysis of variance to test the hypothesized treatment contrasts showed that the Book Flood groups performed significantly better than the Controls, $F(1, 257) = 10.90, p < .001$, but did not differ between themselves, $F(1, 257) = 0.28$.

On the Word Recognition test, the Book Flood groups again showed higher means, but the difference was not significant, $F(2, 131) = 1.06$, due mainly to the larger standard deviations (ranging from 9.8 to 12.7), as well as the smaller *N*'s, and the drop in precision caused by a lower correlation between predictor and posttest. Although the Shared Book group appeared to have a superior result, the difference between the means of the two Book Flood groups represented only 0.2 of the pooled standard deviation.

On the oral sentences, the differences between groups again favored the Book Flood groups, but the *F* test failed to reach significance for similar reasons to those given above for the Word Recognition Test, $F(2, 118) = 2.60$.

In fact, a post hoc simple effects test showed that the Shared Book group produced a significantly higher mean than the Control group, $t = 2.59, p < .05$, but the Silent Reading Group was not different from either.

Class 5 results. Table 3 shows that at the Class 5 level, all means again favored the two Book Flood groups. In Reading Comprehension

sion, the hypothesized contrasts showed the two Book Flood groups to be significantly better than the Controls, $F(1, 267) = 21.07, p < .001$, and the Shared Book group significantly ahead of the Silent Reading group, $F(1, 267) = 9.87, p < .001$. An examination of the raw score means was made to estimate the approximate size of the progress made. The pretest was given a second time to one-third of the pupils in each group, and, as the correlation between this test and that used as the posttest was high (0.83), it was possible to assess the approximate amount of growth made by the total group by extrapolation, using regression estimates.

The Shared Book group was found to have progressed by 4.86 points, or close to 15 months. The Silent Reading pupils showed lesser gains (9 months), and the Control group only 2.5 months growth in the same period. The effect of the books was to improve the children's reading growth by nearly twice the normal amount in 8 months, in the case of the Shared Book pupils.

A comparison of the Class 5 posttest results in Listening Comprehension showed a very similar pattern, favoring the Book Flood groups again. The orthogonal contrasts showed the experimental groups well ahead of the Controls, $F(1,266) = 35.74, p < .001$, and the Shared Book group surpassed the Silent Reading group, $F(1,266) = 5.19, p < .01$.

The differences on the open-ended test of English Structures were not significant, $F(2,267) = 0.83$, although both experimental groups showed higher means. The fact that

the Class 4 test of structures did show a significant difference may have been due to the use of a longer and more reliable test at that level. The trend on the written composition measure favored the two Book Flood groups, but the differences were slight and not significant.

Summary of Findings: Classes 4 and 5

The general hypothesis investigated was that L2 pupils exposed to a rich variety of high-interest illustrated story books, would show greater than normal gains in English language. Incidental hypotheses were that the Shared Book group would perform better than the Silent Reading group, and that differences would be greater in receptive than expressive skills.

At Class 4 level, the Book Flood groups were significantly ahead on the group tests, and marginally so on the two individual tests. It should be noted that if the control group teacher who regularly read stories to her pupils had been dropped, these differences would all have been greater.

At Class 5 level, the Book Flood groups were again significantly ahead on two tests, both of which assessed comprehension. On the other two, the differences were slight, although in the predicted direction. The comparisons between Shared Book and Silent Reading methods showed significantly greater benefits for the former in Class 5, but not in Class 4, where the measured impact of the two approaches was very similar. As predicted, the observed differences were greater in the case of receptive than of

Table 3 Residual gain scores for Class 5, 1980

	Shared Book			Silent Reading			Control		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
STAF Reading Comprehension	91	2.08	5.23	88	-0.14	4.05	91	-1.82	5.11
STAF Listening Comprehension	91	2.18	4.31	87	0.63	5.30	91	-2.13	4.25
English Structures	91	0.12	3.14	87	0.24	3.11	91	-0.33	3.17
Composition	91	0.05	1.51	87	0.16	1.40	91	-0.07	1.28

expressive skills, although it is possible that the greater reliability of measurement in the comprehension tests provided a greater opportunity for these differences to be detected.

One-Year Follow-Up Study, 1981

In order to examine the permanence of the effects noted above, a 12-month follow-up study was conducted in all 12 schools. The Book Flood groups were given an extra 100 books per classroom, as most of the 1980 supply had been read by many of the pupils. New teachers were briefed on the procedures to be adopted, and all teachers were informed, as before, that their pupils would be assessed with a variety of English tests.

The tests used were similar, in style and skills measured, to those of the 1980 survey, although the individual tests were omitted. The younger pupils (Class 5 level), took group tests of cloze reading comprehension, listening comprehension, and open-ended English structures. The older pupils (Class 6) had multiple-choice tests of reading comprehension and of

vocabulary, an open-ended test of English structures, and a written composition based on a sequence of four pictures depicting a story. Procedures for piloting, administering, and marking were similar to those of 1980.

In addition to these tests, the authors gained access to the results of the Fijian pupils (i.e., those in 6 of the 12 schools) who took the Fiji Intermediate Examination for Class 6 pupils in July 1981. This national examination provided results in English, Mathematics, General Studies, and Fijian language, each based on two hours examining time.

The residual gain scores on all language tests given in November 1981 are presented in Table 5 for Classes 5 and 6 respectively. The pretest used for estimating 1981 scores was the same pretest as was used for the 1980 survey.

As in 1980, the two Book Flood groups demonstrated much greater progress in their English language growth, this time on all tests. The hypothesized contrasts between Book Flood groups and Controls were highly

Table 4 Follow-up residual gain scores for 1981
Class 5

	Shared Book			Silent Reading			Control		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Reading Comprehension	66	2.13	5.83	70	2.67	6.62	91	-3.60	5.09
Listening Comprehension	66	1.10	3.36	70	0.81	3.72	91	-1.45	2.90
English Structures	66	0.81	3.72	70	1.28	3.87	91	-1.55	3.41
Total	66	4.02	11.28	70	4.78	12.41	91	-6.59	9.33

Class 6

	Shared Book			Silent Reading			Control		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Reading Comprehension	81	1.27	5.87	64	1.40	5.20	87	-2.22	4.69
Word Knowledge	81	0.92	4.54	64	1.62	4.42	87	-2.02	4.28
English Structures	81	1.65	6.53	64	1.22	5.84	87	-2.46	4.78
Written Composition	81	0.52	2.74	64	0.66	2.33	87	-0.99	1.89
Total	81	4.35	17.17	64	4.89	14.05	87	-7.64	12.28

significant in all cases, $F(1,225) = 58.14, 28.73, 27.49, \text{ and } 55.21, p < .001$, for Reading, Listening, English Structures, and Total Scores, respectively. In no case, however, did the Shared Book group significantly surpass the Silent Reading group.

In Table 4, the findings for Class 6 once again clearly favor the two book-based programs. The planned contrasts showed highly significant ($p < .001$) F ratios (1,230) of 24.66, 30.17, 24.73, 25.00, and 37.96 for Reading, Word Knowledge, English Structures, Written Composition, and Total Scores respectively, but no differences between Shared Book and Silent Reading groups.

A further analysis was undertaken to estimate progress made, school by school, during 1981 based on 1980 posttest results. Total scores on all 1980 posttests were computed, and predictions made for all pupils' total scores for the 1981 survey. Table 5 reveals that, while all eight Control classes were consistent in showing below average residuals, there was considerable variation in the progress of the experimental groups. Eleven of the 16 Book Flood classes showed positive gains and 5 were negative. The net effect was clearly greater gains for the Book Flood treatment in 1981, as in 1980, but the class-by-class variation is worthy of further

analysis and comment (see Discussion). Similar variations were found in the November 1980 analysis.

The last set of findings reported here is based on the Fijian Intermediate Examination in July 1981. Those Class 6 pupils in the six Fijian schools, for whom the Examination is designed, were included in the results reported in Table 6. The samples are smaller than in the earlier analyses, as the Examination is not taken by pupils in the Fiji-Indian schools. Four more pupils were dropped from the Book Flood groups in order to equate pretest scores before conducting an analysis of variance on the Examination scores.

In all subjects, the Book Flood groups performed well above the typical performance of rural schools (45-50%). The advantages shown by the Book Flood pupils was greatest in the case of English, $F(1,100) = 14.82, p < .001$, and General Studies (Science and Social Studies), $F(1,100) = 17.62, p < .001$, but there was also an unexpected spread-of-effect to Mathematics, $F(1,100) = 13.01, p < .001$, and a similar but less marked tendency in the Fijian Language Examination, $F(1,100) = 2.83, p < .10$. The other contrasts, between Shared Book and Silent Reading groups, proved significant only in the case of English, $F(1,100) = 6.51, p < .05$.

Table 5 Mean residuals for total scores showing progress by schools in 1981
Class 5

School	Shared Book		School	Silent Reading		School	Control	
	<i>N</i>	<i>M</i>		<i>N</i>	<i>M</i>		<i>N</i>	<i>M</i>
V	15	-2.33	S	27	5.93	T	10	-1.70
N	15	7.93	C	14	-0.79	S	25	-5.72
SD	25	2.72	R	14	6.36	S	26	-3.46
K	15	0.47	B	20	-0.55	K	36	-3.11
Totals	70	2.23		75	3.03		85	-3.73

Class 6

School	Shared Book		School	Silent Reading		School	Control	
	<i>N</i>	<i>M</i>		<i>N</i>	<i>M</i>		<i>N</i>	<i>M</i>
V	20	7.25	S	22	-1.95	T	16	-1.19
N	22	6.73	C	12	11.08	N	25	-1.00

Table 6 Mean percentage marks for Fiji intermediate examinations, Class 6, 1981

Subject	Shared Book		Silent Reading		Control	
	N	M	N	M	N	M
English	37	63.99	37	53.74	29	45.55
Maths	37	55.30	37	54.30	29	41.45
General Studies	37	57.51	37	57.97	29	46.03
Fijian	37	58.11	37	58.51	29	53.69

Discussion

The general hypothesis investigated was that L2 pupils exposed to a rich variety of high-interest illustrated story books will show greater gains in English language than is normal for such children. The findings clearly support this hypothesis for the receptive skills during the first year of the project and for all language areas sampled during the second year. The subsidiary hypothesis, that the receptive skills would benefit most, was supported initially, but there was a transfer effect apparent in the second year which encourages the view that marked improvement in one aspect of L2 development has substantial effects on related skills. In fact, the general improvement of the experimental groups in the Mathematics, General Studies, and even Fijian Language Intermediate Examinations seems to imply an incidental and positive change in attitude to school. While the improved General Studies results might be explained in terms of better communication in English between teacher and child, the results for Fijian are harder to explain this way, as English is not used as a medium in this subject.

The other a priori hypothesis, that the Shared Book method would show greater gains than the Silent Reading method, received support only in the first year analysis at Class 5 level, on the two receptive skill tests, and hardly at all in the second year tests. While the Listening Comprehension Test did show greater benefits for the Shared Book group, as one might expect, the difference was only significant in one case.

The question arises as to what really caused the differences between groups. Cynics might point to a Hawthorne Effect, brought on by the novelty of the supply of attractive books. In the authors' experience, the effect of any novel program wears off in a matter of days or weeks, and there was no exception in this case. If there was any greater motivation to read English, it was produced by the appeal of the books themselves. Such an effect can be produced by any teacher who sets out to furnish pupils with a large supply of interesting reading materials. Nor can the stimulus of the initial workshop be credited with the cause of the improvement, as the Silent Reading group had no such advantage in either year of the project.

Clearly the cause of the differences lies in the different classroom activities undertaken by the pupils over the two-year period. While it was impracticable in this project to undertake detailed ethnographic studies of all 24 classes with more than 35 teachers, some helpful inferences can be drawn about the critical change agents. All experimental groups were exposed to more than 300 high-interest illustrated story books, and the control groups were not. Most experimental groups made substantial improvements; those which did not had teachers who restricted the use of books, and did not follow the guidelines provided. Only one control group made better than average progress (in the first year) where the teacher had exposed her pupils to daily story book reading, from her private collection of books. Thus, repeated exposure to print, pictures, and story lines was a clear and consistent differentiating

factor between the treatment and the control groups.

In 1981, the majority of the teachers in the Shared Book groups read aloud regularly to their pupils. Inquiries and observation revealed that four out of eight teachers in the Silent Reading group also did so, but no control group teacher did. These observed differences were followed up with the treatment groups with a posteriori tests, and very impressive differences emerged. Thus, in Class 5 (1981), Schools N, SD, S, and R (see Table 8) with regular reading aloud showed mean residuals of 15.38, compared with 9.22 in the remainder of the Book Flood groups. The corresponding figures for Class 6 (with Schools V, N, K, C, and R against the remaining three schools) were 25.68 and 7.18. Both differences are highly significant, $z(143) = 3.40$ and $z(146) = 7.68$, favoring the regular reading aloud treatment. This particular strategy has confirmation in the literature from Cohen (1968) with L1 children and, more recently, with L2 pupils in a small follow-up study in Fiji primary schools (Ricketts, 1982).

A few teachers in the Shared Book group prepared a number of "giant books" (with the help of their pupils and other teachers), and left them on display for repeated use. The pupils in these classes made sufficiently large gains to support the value of this activity. However, differences noted could also reflect a greater enthusiasm on the part of the teacher for the method as a whole.

Teachers in the Silent Reading method provided no follow-up activities to support the reading done, while those in the Shared Book groups did. The lack of difference between the two methods indicates that these activities are not as important as their advocates claim, or the teachers who used them did so ineffectively. It should be remembered that most primary school teachers in Fiji left high school before their university entrance year, have only limited teacher training, and are teaching in their second language. Furthermore, it was obvious from classroom visits, and confirmed by the results of Table 5, that a few teachers did little to follow the Shared Book methodology. If

teachers V (in Class 5) and SD (in Class 6) had been dropped, the Shared Book approach would have been given greater support. Thus, the Shared Book activities cannot be adequately assessed without tighter controls over teacher behavior.

On the whole, however, it is difficult to escape the conclusion that the critical factors which brought about the substantial improvements were related to greater and repeated exposure to print in high-interest contexts, in conditions where pupils were striving for meaning, and receiving sufficient support to achieve it regularly. These features were common in the experimental groups and absent in the controls. The more specific aspects of methodology in achieving these ends seemed of lesser importance as the differences between the two rather different approaches designed to achieve them were minimal.

The theoretical orientation of this article, regarding the critical differences between L1 and L2 learning in schools, received considerable support from this study. There are also practical implications for teachers and parents of L2 learners. Time spent on reading in school has been regarded largely as entertaining, as relaxing. However, it must also be seen now as educationally beneficial. Furthermore, strict controls over the vocabulary and structures of L2 pupils' reading materials seem to be unnecessary and counterproductive. Children can learn new structures from relatively uncontrolled materials, provided there is the support of cues from pictures, absorbing context, and teacher guidance.

Whether 250 books per classroom are necessary to achieve double the normal rate of reading growth is debatable. Many of the books selected were used rarely, and there is much to be said for repeating certain stories if language acquisition is seen as the primary aim. Where resources are scarce, a smaller number, perhaps 150 well-chosen short story books, capable of being read in one sitting, has much to recommend it. Moreover, the popular stories of the western tradition—The Three Pigs, Cinderella, Red Riding Hood, and others of their kind, as presented in the inexpensive "Ladybird" series—were consist-

ent favorites. While some research in the South Pacific has supported the value of books with local flavor, there is little doubt that imported books are still effective in "hooking children on to the reading habit." These trends were observed in both ethnic groups, and both sexes. Finally, it should be added that the average cost of books purchased for this investigation was less than (US)\$2.00.

Thus, one formula for raising literacy standards in L2 situations such as those prevailing in the South Pacific is to provide students with a range of suitable, well-illustrated, high-interest story books, and to set aside time in the school program to ensure that they are widely read.

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Reference Note

1. McKeating, D.F., personal communication, May 1980.

Footnote

- ¹An additional analysis based on raw scores, matched precisely by omitting 40 cases from the Class 4 control group, produced almost identical findings to those reported above.