DOCUMENT RESUME

ED 197 318 CS 005 853

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TITLE Reading Research in New Zealand.
PUB DATE Dec 79
NOTE 20p.: Paper presented at the National Conference of the New Zealand Association for Research in Education (1st, Wellington, New Zealand, December 7-10, 1979).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Achievement Tests: Classroom Environment: Cultural Influences: Educational Assessment: Elementary Secondary Education: Foreign Countries: *Reading Achievement: *Reading Difficulties: Reading Instruction: Reading Materials: *Reading Research: Reading Skills: Reading Teachers: *Research Methodology: *Research Needs: Teacher Influence
IDENTIFIERS *New Zealand

ABSTRACT

The nearly 40 research studies carried out in New Zealand during the last decade have resulted in some very important ideas. In the area of children and texts, research focused on how children learn from texts, and the resulting data suggest that children can and do teach themselves to read, learning from their mistakes. The complexity of the classroom environment and the effects of stressful situations were factors in research on teacher involvement in learning to read. The high proportion of non-European students with reading difficulties in New Zealand was the subject of research on language and cultural influences on learning to read. Research in the area of reading programs designed to intervene in the learning process varied from the effects of progress rewards in reading to massive book experiences to parent training. Field research on approaches to teaching reading has been very limited in New Zealand, but there has been considerable effort in survey testing. These data indicate that the reading achievement of New Zealand students ranks highly in comparison with that of other developed nations. There is a need, however, for a radical reassessment of evaluation procedures and objectives. Although some very good reading research has been done in New Zealand, there are gaps at the secondary and preschool levels and in the area of adult reading. (HTH)

Reading Research in New Zealand

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There were only about 40 research studies in reading carried out in New Zealand during the last decade. Many of them were limited in scope, either because they were constrained by dissertation requirements, had limiting funding, or because too much was required in too little time.

Some of the research, however, has gained international recognition. Marie Clay, for example, at the University of Auckland, has received two major international awards for her work on early reading.

Yet although New Zealand reading research is somewhat uneven, there are some important ideas represented within it which should be reviewed. I propose to do this by dividing the various research efforts into six categories: Children and Texts; Teachers, Children and Texts; Language, Culture and Reading; Intervention; Field Research and Evaluation; and Survey Testing/Test Development. (I will not discuss all the research studies carried out during the 1970s but they are all listed in Table 1 and included in the references). Having covered the research in this way, I would then like to discuss what seem to me to be the gaps in our research knowledge, and the questions that still need to be answered.

Children and Texts

A lot of reading research in the 1970's was focussed on the issue of how children learn from texts. The impetus for much of the activity came from the research of Marie Clay. In terms of research and theory, her results suggested that children can and do teach themselves to read - that they actually learn from their mistakes:

> If we could train children to learn from their difficulties, then they would improve in skill every time that reading took place. (Williams and Clay, 1973).

A paper presented at *Research in Education in New Zealand : A Balance Sheet*, First National Conference of the New Zealand Association for Research in Education (NZARE), Victoria University of Wellington, 7-10 December, 1979.

Table 1: A Profile of Reading Research in the 1970's in New Zealand

Fields of Research	Age range: 4 years (preschool)	5-6 years (junior)	7-8 years (middle)	9-10 years (upper)	11-12 years (intermediate)	13 + years (secondary)	(adult)
1. Children and Texts	Barney 1976	Clay 1972a, 1979a Ng 1979	Robinson 1973 Pine 1977 Williams and Clay 1973 Clay and Imlach 1971 Nicholson 1977 Elley 1976 Carter 1976	Hill 1979 Hoare 1980	Murphy 1975	Boyd 1970 Watson 1973 Hoare 1980	
2. Teachers, Children and Texts		Kitchen 1976 Ng 1979	Beardsley and Nuttall (in progress) Harper & Graham 1974 →		→		
3. Language, Culture and Reading		Clay 1970		Hill 1979			
4. Intervention	Ritchie 1978	Hughes 1972 Clay 1972b, 1979b		Fry 1973 MacKay 1976 Wheeler 1979	McNaughton 1978 Robinson et al. 1979	Harrison 1979	
5. Field research and Evaluation		Slane 1976 Ward 1976 Nicholson 1979 → Fortune et al. 1979 →	→	→			
6. Survey Testing/Test Development			NZCER, 1971 Reid & Hughes 1974 Hughes and Reid 1979 Hattie 1979 Renwick 1978		Walsh (in progress)	Reid, Croft and Jackson 1979	

In her earlier research, she had found that children often corrected their errors while reading, and that their corrections made sense - that is, the children were trying to learn to read by using their own background knowledge, as well as the predictability of the sentence patterns in the stories, to make informed guesses about words. Once children knew the likely meaning of a word, they often only needed to process the first one or two letters of the print in order to identify it. What this meant for teaching was that children could be given texts right from the beginning of their school experience, as long as they were reading text material which was familiar to them (Clay 1972a, revised 1979a).

Clay was also interested in the early detection of reading difficulties. As part of her research, she developed a number of diagnostic checkpoints, and corresponding normative data, so that teachers could monitor children's progress. In this way, if it was found that some children were not teaching themselves to read, then the teacher could intervene to help.

In 1976, Clay began a study called *Reading Recovery Project* which was designed to give this help. It was aimed at assisting children who had not made adequate progress in reading after having had one year at school. I will discuss this project in more detail later in the paper.

There were a number of studies, mainly by Clay's students, which continued and extended the research she had begun (Robinson, 1973; Williams, 1973; Watson, 1973; Imlach, 1976; Pine, 1977; Ng, 1979). In general, these studies tended to support the notion that reading was a matter of making sense of texts - that children anticipated words while reading and sampled letters in words in order to confirm their predictions.

Phonics was dealt quite a blow by this research, especially the notion of teaching phonics in isolation from the text itself. Unfortunately, no researcher took up the challenge on behalf of phonics and other word attack techniques. No one even followed up on Simpson's 1962 suggestion, in the Departmental handbook on reading for infant classes, that phonics could be taught incidentally, so that children would have a back-up word attack technique.

Another of Clay's students, Ng (1979) found that proficient readers, in their second year of school, did indeed have some kind of back-up strategy for working out words, which they used when story context was

insufficiently helpful. Ng found that the best of the six year old readers were flexible in their approach - that they could switch from 'reading for sense' to 'reading the words', depending on the difficulty of the text.

Hill (1979), in a different kind of study, with older children (8 year olds), tried to find out what the limits were in terms of word recognition when children had just the overall story context or else just the initial letters of words to help them. He found that content words (such as nouns) were easier for children to determine when all the letter cues were available to them. He found that this was especially the case when texts were difficult. He argued that children do not need to use all the letters in words all the time, but that they do need to use all the letters some of the time.

Hill also found that oral reading ability was not a very useful indicator of reading comprehension for older children. He found that these children were often able to answer questions about stories which were difficult to read orally.

Text difficulty is clearly an important factor in learning to read. What is it, then that makes texts difficult for children to understand?

Elley (1969, 1976) argued that vocabulary knowledge was a key factor in determining text difficulty. His own research had shown that a readability formula based on 'noun frequency' (that is, the frequency of occurrence of nouns in texts), was a powerful predictor of text difficulty. He used this formula to grade the passages used in the *Progressive Achievement Tests*, (New Zealand Council for Educational Research, 1971).

What Elley did not explain, however, was the fact that children often find texts difficult, even when the vocabulary is well known to them. Rob Imlach and I (Nicholson, 1977, Nicholson and Imlach, 1979) studied the difficulties that 8 year old children had in answering questions about narrative stories. We found that some stories were more difficult than others, even though the vocabulary used was well known to the children.

What we found interesting in our study was that children often paid more attention to text information when the stories were difficult. When the stories were familiar to them, they paid less attention to text details and relied on their prior knowledge instead.

We argued that text difficulty depends partly on what children are asked to do. Sometimes children can get the 'gist' of a story, but are unable to recall, or do not understand, the text details. Text difficulty also seems to depend on the structure of the text, especially the way in which complex ideas and concepts are explicated within the text itself.

Hoare (1980) took a close look at this issue of text structure. She found that, when she made texts more explicit, they were rated as more difficult according to readability formulas. They were more difficult partly because she linked up ideas in the text with a logical connective ('because') and partly because she included difficult concepts rather than replacing them with easier synonyms. The difference was that she explained the concepts in the text. The addition of the explanation made the readability estimates jump even higher. What she found, though, was that children found the supposedly more difficult text in fact easier to understand. The more unfamiliar the topic, the more they relied on and benefited from the explication within the text.

These results fit in with the research we did on question-answering. The point is that children can only answer their own questions or the teacher's questions by using the following strategies: either they use their own background knowledge or they use text information, or they use both. It seems to us that they get the best answers when they use both strategies, using the rule that the text information usually gets priority over our own assumptions about why things happen or what concepts really mean.

Overall, the research on reading comprehension fit rather nicely into the knowledge base that we have established on early reading development. It seems that children also can teach themselves how to comprehend, but that this involves having sufficient information in texts for them to be able to make sense of the material they are given.

When put in perspective, the New Zealand research on children and texts suggests strongly that children can and do teach themselves to read -

but their ability to help themselves will depend on the reading materials we design for them. The *Ready to Read*[1] series was originally designed by the Department of Education to make this kind of learning happen. Now that the series is under revision, it might be wise to check to see if this objective can still be achieved. Perhaps a similar exercise is necessary for expository texts, particularly in the intermediate and secondary schools. I doubt whether we will help older children if we write texts for them in simple language. What they really want are texts which will help them to confront complexity - not avoid it.

The research on children and texts also warns us that we need to be able to monitor and analyse children's progress in self-teaching. Global scores such as provided by Progressive Achievement Tests and teacher rating scales are totally inappropriate for such a purpose. I would argue that we need to make much more systematic use of such techniques as 'running records' (Clay, 1979a) and question-answer analysis (Nicholson, 1979).

Teacher, Children and Texts

This category needs some explanation. It seemed to me that it would be useful to distinguish between what happens between a child and a text, and what happens when the teacher is involved. From the teacher's point of view, the problem is not simply a child and a text - it is more likely to be 35 children and many more texts. Teaching involves planning for

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The *Ready to Read* series was first issued by the Department of Education in the early 1960's. It was a series of beginning reading texts, consisting of 12 'little' books, and 6 'big' books. The series was graded in difficulty and included both 'basic' (very frequently occurring) vocabulary, such as *the*, *and*, *was*, as well as 'interest' vocabulary, such as *Viscount*, *airport*, etc. There was no emphasis on phonically regular words of the 'fat cat sat on the mat' type - instead, the emphasis was on 'natural' sentence patterns, which would enable children to 'predict' the words in the text. As a result, children would make errors of the kind 'Peter said' when the text read 'said Peter' - such errors were the result not of crossed-wires behind the eyeballs, but of trying to take advantage of these predictable sentence patterns.

large numbers of children so that they can all learn effectively. From the child's point of view, learning is partly determined by the teacher and partly self-determined. In other words, this category encompasses the classroom learning environment, and it can be summed up in a single word - complexity.

There have been some attempts to analyse this complexity in New Zealand. Kitchen (1976) observed one teacher's reading programme for a number of weeks in a junior classroom. He found that the teacher and the children acted differently, depending on whether there was a group situation or one-to-one teaching. He argued that the group situations were more stressful and less helpful from the child's point of view. Children rarely asked questions or requested help. They also feared ridicule from other children. The teacher also tended to be more directive in the group situation. The teacher tended to interrupt more and to ask fewer questions of the children.

Ng (1979) observed a lot more junior classrooms than Kitchen (she visited 38 in all) but could only make one visit to each. She found that 25 per cent of the reading instructional time was spent on non-reading activities, such as keeping discipline and organising group activities. She also found, as did Kitchen, that there was very little one-to-one teaching of reading. Nor did children spend much time reading on their own. In many of the classrooms, the best readers got to do most of the silent reading because they usually finished their other reading tasks first. She also noted that teachers were very directive in group situations - they did not allow much time for children to work out words for themselves; nor did they ask many questions about context clues which could help the children to work out words for themselves.

Harper and Graham (1974) focussed in on just one aspect of the classroom learning environment - children's on-task behaviour. They found that the less skilled readers also spent less time on task than the more skilled readers.

What conclusions can we draw from these studies? Probably very little at this stage. The data are still too thin. Some teaching and learning behaviours may appear inappropriate to the researcher, yet still be effective. Stress, in a learning situation may be a good thing. Immediate feedback, rather than asking questions about text clues, may be very helpful in some learning situations. The research dealing with on-task behaviour is difficult to interpret - is it more important that children be on the right task

or just on-task? At the moment, the research data raise more questions than answers. Yet the research is interesting. The potential is there for considerable insight into classroom processes.

Language, Culture and Learning to Read

About 13 per cent of our students are either Maori or Pacific Islanders - in some schools, the figure is over 90 per cent. Many of these children have difficulty in learning to read according to a recent report prepared by the Department of Education:

> A high proportion of the students in standard 4 and form 2 who were reading at or below the 8 year level were non-Europeans, almost half of whom were having difficulties with the English language generally.
>
> (Renwick, 1978, p.26)

The report did not, unfortunately, present any data to clarify what was meant by the term 'language difficulties'. The research that we do have suggests that the problem is complex. This was one of the conclusions reached by Clay (1970) when she compared the reading progress of Maori, Pakeha and Samoan children in the 5 to 7 year age range. She found that the Maori children scored lower on reading tests than the Samoan children in her sample, even though the Maori children had a higher level of language competence. Clay argued that these results showed the considerable influence of home background on early reading achievement. She felt that the superiority of the Samoan children in reading may have been due to the high status given to reading and to literacy by their parents.

Clay did suggest, however, that language and reading were more closely related in later years of schooling, when the language used in texts was more complex. This argument was supported by Hill (1979), who found that Pacific Island children in his study, who were about 8 years of age, had more difficulty with story comprehension than did Maori and Pakeha children. He argued that the comprehension difficulties may have been due to differences in concept understanding.

It may be that the problems faced by Maori and Pacific Island children are related to language and culture, but in different ways - many Maori children may lack sufficient experience with texts; many Pacific Island children may, because they come from bilingual (or non English speaking) homes, lack cross-cultural understanding of concepts

well known to Maori and Pakeha children. But these suggestions are speculative. The seminal study of the reading problems faced by Maori and Pacific Island children in schools has yet to be undertaken.

Reading Intervention Research

Some reading programmes are deliberately designed to intervene in the learning process of some children in order to 'make learning happen'. To be successful, however, an intervention programme not only must make learning happen, but must make it continue to happen after the intervention has been completed - otherwise, the children concerned will drop behind as their classmates continue to make progress.

Fry (1973) found that, by using tokens as rewards for progress, children with reading difficulties were able to make considerable progress on a word recognition task. She also found that these children had maintained their gains 3 months after the experiment had ended. The problem was, though, that they had not improved on their gains.

A number of other intervention studies (Mackay, 1976; Harrison, 1979; Wheeler, 1979) had similar problems. These programmes produced important short term progress, but their long term effects were not clearly established.

An intervention study, of the *Head Start* type, was conducted by Ritchie (1978) at the preschool level for Maori children from low income backgrounds. In the third year of the study, the teaching programme focussed primarily on providing massive book experience for the children. This involved reading lots of books to the children and asking them questions about basic print concepts. The programme also incorporated language experience activities. Follow up testing of the children showed that the children had made considerable progress in understanding of book concepts. Again, however, the long term effects are not yet clear.

A different problem occurred in a study by Robinson, Glynn, McNaughton and Quinn (1979). They trained parents to help their children, whose ages ranged from 8 to 12 years, in reading. The main focus of training was on what to do if the child made an error. The parents were also taught to use praise for correct reading and for

self correction of errors. The tutoring programme was done at home, for 15 minutes at a time, 3 times a week. The programme continued for about 4 months. The children made considerable gains in oral reading accuracy and self-correction. The problem was that they did not make similar progress in the school setting.

The researchers found that it was only when training was provided at school as well as at home that comparable progress was made. These results suggest that intervention training, to be most effective, needs to be strongly tied to the reading instruction given in the classroom. The long term effectiveness of the programme has also still to be established.

Clay (1979, 1979b) has completed a study known as the *Reading Recovery Project*. It seems to be our most promising intervention programme to date. The aim of the project was to accelerate the reading progress of children who were in their second year of school and still not benefitting from their classroom reading programme. The children received tutoring for 45 minutes daily by a trained teacher-tutor. The training lasted 3 months. Follow up testing showed that the children had made dramatic progress - and that, in some aspects of reading, these gains were continuing to increase some 2 months after the tutoring had been stopped. The gradient of improvement had dropped considerably, however, and it may be that the rate of improvement tailed off altogether at a later period. Clay is continuing to monitor the progress of these children in order to gather data on the long term effects of the intervention.

Field Research and Evaluation

It seems to me that field research and evaluation is an important research category. Schools need information on the effectiveness of specialist help (such as inservice courses) and innovative ideas about the teaching of reading. Much useful information can be gained through field research and evaluation. Yet very little of this type of research has been done.

Slane (1976) reported the results of a field trial of a locally developed approach known as 'book experience'. The basic idea of the approach was for teachers to read and re-read interesting books by enlarging the print so that all children could read along with the teacher. The teacher encouraged the children to attend to the print by using a pointer, by pausing, and by incorporating reading instruction as part of the book reading process. Details of the approach were incorporated in an inservice course for teachers known as ERIC (Department of Education, 1976). This approach was compared with two other programmes for junior school children but it was found that no one programme was clearly superior to any of the others.

Another reading idea, known as 'Book Flood' (Staiger, 1979) was also field tested in schools. The 'flood' involved over 100,000 books - about 500 for each classroom studied. Again, however, the results did not show clear gains in reading progress, even though the children and teachers enjoyed the experience.

Looking back, I think that our field research on reading approaches has been of the 'shotgun' type. The focus of the research efforts has been too imprecise. It may have been more profitable to focus on specific design features in these programmes (such as the emphasis on attention to print in the book experience approach) rather than the programme itself, which is a composite of many different teaching ideas and processes.

I prefer the kind of approach used by McNaughton (1979). He focused on one specific strategy which teachers could use in one-to-one reading situations. The strategy was 'wait time' - that is, allowing sufficient time for children to work out words for themselves. I think that we will make more progress by carrying out this kind of precise research-analysing important features of teaching situations, one by one, to find out what pay-off we can expect from them.

My experience in evaluating the impact of an educational programme for parents suggest that we should also evaluate inservice courses in a similar way. My study (Nicholson, 1979) looked at the impact of a radio series and booklet called *On the Way to Reading*, which was designed to help parents learn more about the ways children learn to read. Indirectly, the

radio series was aimed at helping teachers by enabling parents to provide appropriate help at home. In general, the evaluation data showed that parents got the 'message' of the radio series and booklet, but did not remember specific details. In other words, parents seemed to pick up the general principles which the series tried to get across - to enjoy the process, to praise for effort, to read *with* the children rather then *at* them, and to avoid 'growling' at them for making errors. Yet the long term pay-off of such an educational effort still needs to be established. It may be that the initial enthusiasm and basic principles will not be maintained without follow-up programmes on specific aspects of the radio series.

Survey Testing

There has been considerable effort in this area, but there have also been a lot of problems. In 1970, New Zealand participated in an international reading survey which involved fifteen different countries (Thorndike, 1973). The reading comprehension results for New Zealand were slightly higher than all other countries at the 14 year old level, and considerably higher for the sample group of children in the final year of school. The results for the 17 year old children were not really comparable because only 13 per cent of children reach the final year of school in New Zealand, compared with, say, 20 per cent in Scotland and 75 per cent in the United States.

The data for the 14 year olds were more comparable. The New Zealand results for this group were highest, followed by Italy, Scotland and the United States. Yet, as Thorndike, the project director, pointed out, the differences among these countries were small.

Perhaps the fairest conclusion that can be drawn from these data is that New Zealand reading achievement ranks highly among developed countries. Whether this is cause for complacency or concern depends on how we view the reading levels of the comparison countries. It is interesting to note, for instance, that community groups such as the Concerned Parents' Association are not convinced by these data. As Viney (1980) put it:

> There is little comfort in being told that New Zealand children rank, say, third in the world in reading skills, if the rest of the world is semi-literate.

A second survey, known as *Project CHILD* (Walsh, 1979), was conducted by the Department of Education and the New Zealand Council for Educational Research to find out what proportion of students, at the 11 year old age level, were having difficulty in learning to read, even though they were not handicapped by problems of general ability, sensory impairment or poor school attendance. The results of the survey indicated that about 5 to 10 per cent of students could be classified in this way.

Yet these data do not give us a clear idea of whether reading levels are as they should be for the other 90 to 95 per cent of children. A further study was conducted in 1978, called *Educational Standards in State Schools* (Renwick, 1978). It was based on data collected from 77 primary and 12 secondary schools throughout New Zealand. In regard to general reading progress, the report concluded that 'standards in reading are at least as good as they ever were' (p.25). In regard to children who were having difficulties with reading, however, the report stated that 'too many students are still not making satisfactory progress' (p.27).

The 'standards' report could be easily criticised as a political document, produced in an election year. Certainly the report lacked the usual criteria characteristic of survey research - stratified random sampling was not carried out; only a few of the secondary schools were sampled; different teams of inspectors with different views were used; observations were informal rather than systematic. Indeed, the report has had its fair share of criticism (St. George, 1978).

Looking back over all this survey testing, can we say that these data have clarified the state of reading for us? My feeling is that much of the research effort was addressed to the wrong question. Pressure groups such as the Employers Association and the Concerned Parents Association do not seem to want a 'return to the basics' in the sense of going back. What they seem to want is enough 'basics' so that their children can go forward. At least, this is how I read remarks such as those by Viney (1980, p.304).

> I believe that teaching children to read, write and calculate well must become the over-riding concern of primary schools. Once the realm of literature is open to children, they will be much more able to tackle the problems of life and society than they will be if they have to rely on the simple handouts and comic strips given to them in social studies to enable them to "solve" society's problems.

I suspect that the kinds of survey testing we have done in the past will never adequately answer this kind of concern. It may be more useful if we place a moratorium on the kind of psychometric analysis (Reid and Hughes, 1974; Hughes and Reid, 1979; Hattie, 1979) and criterion-based, normative testing (Reid, Croft and Jackson, 1979) that we have been doing, and take a close look at alternative approaches. To be frank, I think it is time for a radical reassessment of assessment.

Conclusion

In this paper I have argued that some very good research has been done in New Zealand. Yet there are huge gaps, particularly at secondary and preschool levels - and virtually nothing has been done in the field of adult reading.

Overall, the 'state of the art' in reading research in New Zealand can best be described as patchy. There is a clear need for a comprehensive plan of development. To my mind, the need is urgent, because the state of reading depends on the state of reading research.

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