Tatari, Tautoko, Tauawhi - Hei awhina tamariki ki te panui pukapuka: some preliminary findings

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The Tatari, Tautoko, Tauawhi reading tutoring procedures have been adapted from the procedures known as Pause, Prompt, Praise, first developed in Mangere in 1977. The first author offered the procedures as a koha at a Special Education Service hui at Poho o Rawiri in 1991. The second author took up the koha and obtained the support of kaumatua and kuia at Hairini marae Tauranga Moana, and the support of senior Maori staff of the Special Education Service National Office to produce a Maori language video and training booklet. This began an important bicultural journey through the processes of producing instructional materials and trailing and evaluating them in ways that are biculturally appropriate. This paper reports on that journey and presents some preliminary data on the implementation of Tatari, Tautoko, Tauawhi by seven tuakana - teina pairs in a bi-lingual classroom.

Coming from a background of research within an applied behaviour analysis paradigm, I have been concerned at the slowness of this paradigm to engage the interest of Maori educators, and to contribute to the learning of Maori children. I do not believe the problem is necessarily inherent within the paradigm. Rather, I believe it stems from the ignorance of many non-Maori researchers of the language, cultural values and practices, and educational aspirations of contemporary Maori. Non-Maori researchers need to address this ignorance so that they are better able to understand Maori perspective's on learning, to listen to the educational questions being asked by Maori, and to contribute research skills and research technologies in culturally appropriate ways.

Over the past two years, I have been invited to attend national hui for Maori staff of the New Zealand Special Education Service (S.E.S.). One important kaupapa raised at these hui was the need to develop focused training programmes in Maori language and reading skills for delivery to Maori parents and whanau by S.E.S. Maori staff. My response to this kaupapa was to consider adapting, for use in Maori educational contexts, the reading tutoring procedures known as Pause Prompt Praise, developed by myself and former colleagues at the University of Auckland, (Glynn, McNaughton, Robinson & Quinn, 1979).

Research and development of the Pause Prompt Praise procedures began in Mangere in 1977-1978, with Maori and non-Maori families. A booklet and video were developed to introduce a set of tutoring strategies to be used at home by parents of 10 to 12 year old children who were experiencing reading difficulties. An evaluation of the procedures was reported in a research monograph (McNaughton, Glynn Robinson and Quinn, 1981; McNaughton, Glynn & Robinson, 1987). The Mangere study was replicated in the U.K. (Glynn, 1980) and was reviewed in detail along with ten further studies of the procedures, (Glynn & McNaughton, 1985). Continuing research with these procedures, for example, Wheldall & Mettem (1985);

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Wheldall & Glynn (1989); Wheldall, Colmar, Wenban-Smith, Morgan & Quance (1992), has resulted in the production of an updated version of the Pause Prompt Praise tutoring booklet (Glynn, Dick and Flower, 1992) and training video (Dick, Glynn & Flower, 1992).

It seemed that Pause Prompt Praise may have something to offer in the context of children's learning to read in Maori, particularly through suggesting specific strategies for parents and whanau to use, within the supportive context of oral reading on a one-to-one basis. However, working on this task depended first on whether Maori educators recognised it as worthwhile educationally, and second, on any trial and evaluation being carried out in Maori-controlled educational settings by an appropriate research whanau, or "whanau of interest" (Bishop & Glynn, 1992a). I shared these concerns with Maori colleagues in senior positions within the S.E.S. and was invited to present my take at a subsequent S.E.S. hui at Poho o Rawiri.

Figure 1: Tatari, tautoko, tauawhi
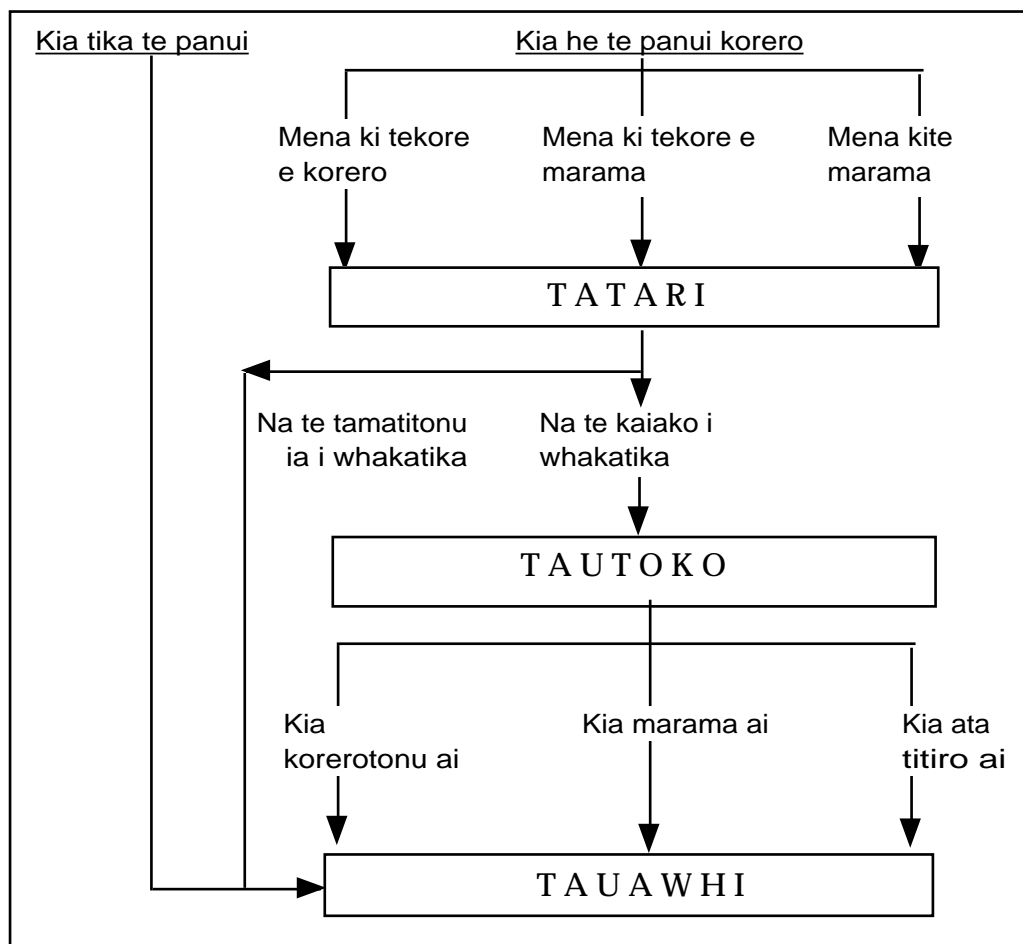
Preparing for this hui was a major challenge. Both the procedures themselves as well as my case for trialing them in a Maori context needed to be presented in te reo. I prepared a brief explanation of the kaupapa of Tatari, Tautoko, Tauawhi, and how I thought it might help children learning to read in Maori, and their parents. The essential features of this kaupapa are shown in Figure 1.

I acknowledged that a trial and evaluation should be carried out in a Maori controlled context under the direction of Maori staff, and that the training video and booklet would need to be reconstructed from within a Maori framework, and not simply translated from English. This kaupapa was put down as a koha. There was an immediate response from S.E.S. Maori staff from Tauranga Moana, who undertook

to discuss this kaupapa with their own iwi, and sought a commitment from me to work with them if iwi approval were given.

Within a few weeks, I was invited to join with S.E.S. staff and iwi from Tauranga Moana (Ngai Te Rangi, Ngati Ranginui, Ngati Pukenga) at Hairini marae. Jointly we submitted plans and requests for funding to the S.E.S. national office and the Ministry of Education. On receipt of funding, the University of Otago A-V team visited Tauranga to record the on-site material for the video. We were welcomed formally onto Hairini marae. We acknowledged the mana whenua of Tauranga Moana, and stated our commitment to the kaupapa of helping children learn to read in Maori. I cannot overstate the importance of supporting the kaupapa through the medium of te reo in receiving the blessings and guidance of the kaumatua and kuia at Hairini.

Several weeks later, these kaumatua and kuia, together with Maori staff from S.E.S. Tauranga came to Dunedin to edit the material we had recorded and to offer comments. They worked with Huata Holmes, the Pou Here Tangata of the Education Department at the University of Otago, and with Russell Bishop and Colin Durning who have a strong commitment to bicultural education initiatives. They assisted in preparing the video script and draft material for the accompanying booklet. Together, this whanau of interest saw that the mana whenua of Tauranga Moana and Otepoti and the mana of the two Kairarunga of the S.E.S. national office was respected throughout the process and in the final product. One of these Kairaranga, Waiarani Harawira, who was the presenter of the video and the first author of the booklet, made additional visits to Dunedin to work on transforming Pause Prompt Praise into Tatari Tautoko Tauawhi. Her expertise in te reo was absolutely vital to this process.

The completed video (Atvars and Glynn, 1992) was taken by the Otago team, under the support of our Pou Here Tangata for presentation back to the people at Hairini. This was a very special educational and bicultural event. Kaumatua, kuia, children, teachers and whanau from Maungatapu school were invited to view and comment on the video. It was most important for us to listen carefully to this comment, and to respond to any concerns which arose, before going on to develop the printed booklet (Harawira, Glynn and Durning, 1993).

When the video was accepted, the research process continued with the handing over of Tatari Tautoko Tauawhi to the teachers at Maungatapu school for them and their students to try out in a tuakana-teina (peer-tutoring) context. The fourth author was then appointed to collect and collate the audio taped data on children's tutoring presented in this study, which is a preliminary investigation of the implementation of Tatari Tautoko Tauawhi by seven tuakana-teina pairs working in a Maori immersion context.

METHOD

Participants:

Twenty two children from the Maori language immersion classes at Maungatapu primary school took part. All children had previously attended kohanga reo. Seven were tuakana (tutors) aged between 10 and 12 years, who had been in the immersion classes for six years, and whom their kaiako regarded as competent readers of Maori. Seven were teina (tutees) aged between 6 and 8 years and were selected by their kaiako being most likely to benefit from additional tutoring assistance. A further eight 6 to 8 year old children, whom the kaiako considered were making good progress in reading formed a comparison group of non tutored readers.

Setting:

All children participated in their regular classroom Maori language reading programme incorporating a wide range of individual, small-group and whole-class reading activities. These included shared book reading, word study activities, cloze activities, reading aloud of poems and stories, and writing and illustrating stories related to topics covered in reading texts. The classroom environment was stimulating and challenging with displays of charts, pictures, books and other materials, all in te reo.

Design:

This was a preliminary trial of the procedures during a five week period at the end of term 3, 1993. Measures of tuakana tutoring behaviour from three sessions before and from six sessions following tutor training, were obtained from tape-recordings. Teina children (tutees) and non tutored children were not randomly assigned to tutored or non-tutored groups, but were selected by kaiako such that readers judged in most need of assistance became teina while those judged as more competent remained in the non tutored group. Pre- and post- intervention measures of reading from current classroom texts were obtained from children in all three groups.

Tutor Training:

Tuakana were given three 20-minute training sessions by the trainers. These sessions involved carefully viewing the video demonstrating Tatari Tautoko Tauawhi, with frequent stops to discuss the examples of tutoring provided. Trainers also role played readers making different types of errors so that tuakana could practise using the procedures. Trainers provided tuakana with feedback on their choice and implementation of each procedure, according to the diagram.

Tutoring Procedure:

Tuakana-teina pairs spent approximately three 10-15 minute sessions per week working in a separate room. Reading texts were provided by kaiako from among books currently being read in class. Prior to training, tuakana were asked to try to help their teina to read as best they could. Following training, tuakana were asked to try to implement Tatari Tautoko Tauawhi, using the diagram supplied, and with regular feedback from the trainers (kaiako and the second author) between sessions. The tuakana-teina reading interactions were tape recorded for later analysis by the researcher.

Measures:

Tuakana implementation of tutoring: Pre-training and post-training measures were taken of tuakana tutoring behaviour. These measures comprised:

1.   **total error attention** - this is the percentage of all reader errors to which tuakana gave any form of attention.

2.   **tatari** (pause) - this is the percentage of those errors attended to for which the first tuakana response was tatari (pause).

3.   **tautoko** (prompts) - this measure records the percentage of errors to which tuakana responded with each type of prompt, namely:

   a)   tautoko kia panui tonu /haere tonu /whakahokia (prompts to read-on or to go back and read again)

   b)   tautoko kia marama ai (prompts about the meaning of the word)

   c)   tautoko ahua (prompts about letters or sounds in the word).

4.   **tauawhi** (praise) - there are four praise measures. The first three involve the percentage of errors where the tuakana gave praise specifically contingent on:

   a)   kupu orite (close attempt)

   b)   whakatika na te tamaiti ano (self correction)

   c)   whakatika na te kaiako me te tamaiti (prompted correction)

   The fourth praise measure is general, supportive praise which aims to reinforce readers for their efforts.

   d)   whakanui i te mana o te tamaiti

5.   **whakatika na te kaiako ano** (the tutor supplies the correct word) - This measure records the percentage of errors where tuakana supplied the correct word. It does not differentiate whether this was done before of after attempts to provide the reader with prompts.

Pre- and post-measures of reading: There are as yet no standardised reading assessment tools available in te reo. This may well be quite appropriate from the perspective of past history of mainstream school assessment practices which have not led to the betterment of teaching programmes for Maori students. From this perspective it is more important to show that individual readers have made measurable progress over time than to relate their performance to that of some normative group.

The number and range of Maori language reading texts currently available for Maori students is limited because of costs of production and distribution, and by the availability of resourcing within schools. Consequently, it was not possible to measure progress in terms of the number of successive book levels read to a criterion accuracy level.

For these reasons, and because the study spanned only three weeks of tutoring, the reading measures adopted in this study were **reading accuracy,** measured in terms of the percentage of words read correctly, **correct rate and incorrect rate,** measured in terms of the number of words read correctly and the number read incorrectly per minute. These measures were taken from current classroom texts. Both measures were adopted since it was important to show that the tutoring programme did not result in increasing the overall rate of reading at the cost of increasing the number of errors. The percentage of reader errors that were **substitutions,** rather than non-attempts, was also recorded.

RESULTS

Tuakana Implementation of Tatari, Tautoko, Tauawhi.

Table 1 summarises the pre and post training data from the seven tuakana. These data suggest that within three weeks of tutoring tuakana were learning to implement Tatari, Tautoko, Tauawhi with considerable skill.

Table 1: Summary of tuakana use of Tatari, Tautoko, Tauawhi procedures during untrained and trained tutoring.

		Untrained tutoring 3 sessions %	Trained tutoring 6 sessions %
1.	Errors attended per session	8.6	31.8
2.	Tatari (pause)	25.3	54.4
3.	Tautoko/Haere Tonu (Read on)	27.9	73.0
4.	Tautoko/Marama (Meaning prompts)	7.9	13.7
5.	Tautoko/Ahua (Letter/Sound Prompts)	9.3	21.3
6.	Tauawhi/Mana Tamaiti (General praise)	67.3	58.9
7.	Tauawhi/Whakatika kaiako (Praise/prompted correction)	10.9	28.0
8.	Tauawhi/Whakatika tamaiti (Praise/self correction)	19.0	10.4
9.	Tauawhi/Kupu orite (Praise/close attempt)	0.0	0.0
10.	Prompted Correction	12.3	32.9
11.	Supplying the word	16.4	31.3

Both the quantity and quality of tuakana response to teina reading errors changed considerably. First, the mean number of teina errors attended to per session increased from 8.6% to 31.8%. Despite this marked increase in the number of errors attended to, the tuakana-teina interactions remained consistently positive. The very positive pre-training rate of general praise comments (67.1%), remained high (56.4%) following training in Tatari, Tautoko, Tauawhi. However, following training, tuakana increased in addition their use of targeted, specific praise for prompted corrections. This type of praise increased from 12.3% to 32.9%. Praise specifically targeted at teina self corrections showed a small decrease from 19% to 10.4%, but these percentage data should be regarded with caution, as they are based on very low incidences of errors, and hence few opportunities for teina to self correct. This point will be addressed later.

Table 1 shows also that tuakana doubled their rate of pausing (tatari) from 25.3% to 54.4% of errors attended. Tuakana use of different types of prompt shows important pre-training to post training changes. The least intrusive form of prompt, aimed at keeping teina in touch with meaning embedded in sentence and story

context, tautoko kia haere tonu/whakahokia (read-on or re-read) increased from 27.9% to 73.0%. Prompts which specifically drew teina attention to the meaning of words in terms of story context or previous experience (tautoko kia marama ai), increased from 7.9% to 13.7%. This type of prompt is particularly challenging because of the demands it makes on Maori language skills. Prompts which drew teina attention to letter or sound information within errors, (tautoko ahua), increased from 9.3% to 21.3%.

The percent of teina errors that were successfully corrected following tuakana tautoko increased from 12.3% to 32.9%. There was also an increase in the percentage of errors following which tuakana supplied the correct word, from 16.4% to 31.3%. However, due to the way the analysis was carried out, these data include all instances of tuakana supplying the word <u>after</u> first trying to tautoko.

Reading Outcomes.

First, it is important to note that all children were reading their classroom text material at a very high level of accuracy, both at pre and post testing. The mean pre and post test reading accuracy levels for tuakana were 98.4% and 99.1%. The corresponding figures for teina were 89.4% and 92.3%, and for non-tutored children, 91.6% and 91.7%. This high level of reading accuracy would have imposed a "ceiling" by limiting the number and range of errors available for tuakana to practice on, and in particular would have limited their opportunities to detect and praise teina self corrections. However, Table 2 provides some suggestive information in terms of changes in correct rates, incorrect rates and substitutions.

Table 2 establishes, as expected, that tuakana displayed a far higher correct rate at pre-test and post-test than both teina and non-tutored children. Similarly, the pre-test correct rate for teina (38.4 words per minute) was lower than that for non-tutored children (54.3). However, teina showed a small increase in correct rate from 38.4 to 43.4 while non-tutored children did not. Table 2 also establishes that the Pre-test incorrect rate was lowest for tuakana (1.6 words per minute), and was lower for non-tutored children (2.1) than for teina (2.4). This was expected since teina were selected by kaiako as those most likely to benefit from additional support. However, at post-test, teina incorrect rate had dropped to 1.8, whereas the incorrect rate for non-tutored children increased to 3.2. Interestingly, the incorrect rate for tuakana as well as that for teina decreased from pre-test to post-test, from 1.6 to 0.6 incorrect words per minute. This suggests there is some benefit to be had from acting in the tuakana role. The data on the percentages of errors which were substitutions rather than non-attempts, are also suggestive of benefits for teina. Both tuakana and non-tutored children displayed higher rates

Table 2: Summary of data on correct rate, incorrect rate and percent of substitution errors at pre and post test for non tutored, teina and tuakana groups.

		Pre-test	Post-test
Correct Rate	*(words per minute)*		
Non-tutored		54.3	54.5
Teina		38.4	43.4
Tuakana		92.1	92.7
Incorrect Rate	*(words per minute)*		
Non-tutored		2.1	3.2
Teina		2.4	1.8
Tuakana		1.6	0.6
Substitution Errors	*(%)*		
Non-tutored		73.7	68.8
Teina		43.1	55.6
Tuakana		69.2	64.4

of substitution than teina. The pre-test figures were 69.2, 73.7 and 43.1 respectively. Teina pre-test substitution percentage (43.1), increased to 55.6 at post test, while the corresponding figures for non-tutored children showed a slight decrease from 73.7 to 68.8. This is further evidence suggestive of benefits for teina from the Tatari, Tautoko, Tauawhi tutoring interactions.

DISCUSSION

In this preliminary study, there is evidence to suggest that tuakana were quite successful in implementing Tatari, Tautoko, Tauawhi, after a limited trial over three weeks of tutoring. Tuakana attended to four times more teina errors, and doubled their rate of pausing. They more than doubled their use of read-on or read again prompts, and they increased their use of specific prompts about word meanings. They maintained a high rate of general supportive praise, and they more than doubled their praise for prompted corrections.

All these tutoring procedures were implemented i roto i te reo rangatira. Although the tutoring gains were not quite as marked as those reported in studies of Pause, Prompt, Praise implemented by tutors and tutees whose first language is English, (Glynn & McNaughton, (1985) they are however consistent with the trends and directions reported in those studies. Given that these tuakana were learning Maori as a second language, this is a considerable achievement. Delivering tautoko kia marama ai prompts, for example, requires a high level of Maori language competency. That tuakana were beginning to implement this type of prompt within approximately six sessions of training speaks well of the Maori language learning context provided in these immersion classes.

The scope for assessing reading progress was limited in this study because of the high level of accuracy of all students on classroom reading texts and because of the brief trial period. Nevertheless, data do suggest a lower incorrect rate, together with a slightly higher correct rate for teina children, in contrast with non-tutored children. These data are consistent with the type of gains reported in other studies of peer tutoring with Pause, Prompt, Praise, (Wheldall & Mettem, 1985, Houghton & Glynn, 1993). The suggestion of benefits to tuakana, in terms of reduced incorrect rates following tutoring with Tatari, Tautoko, Tauawhi is also consistent with reading gains reported for peer tutors using Pause, Prompt and Praise (Medcalf, 1989, Medcalf & Glynn, 1987), and with tutors using a technique known as paired reading (Limbrick, McNaughton & Glynn, 1985). Experience in the present study suggests that Maori preferred pedagogical practices, such as tuakana teina learning

contexts, may also yield support for claims of mutual leaning gains for tutor and tutee in an interactive peer tutoring context.

These preliminary data are quite encouraging, and confirm the need for further trials with Tatari, Tautoko, Tauawhi. These trials should address the need to promote teina to even more challenging text material once they attain criterion accuracy levels. Reading measures will need to be expanded to include measures of progress across books of increasing difficulty and measures of comprehension, possibly through the use of cloze techniques administered in oral or written form, and based on both seen and unseen text materials.

The tuakana in this preliminary study were all very competent readers. It may be worthwhile also to trial Tatari, Tautoko, Tauawhi with tuakana who themselves may be experiencing difficulty in reading books appropriate to their age level. This would enable a more powerful demonstration effects for the tuakana as well as the teina.

The project has been very much a bicultural journey, leading to sharing of information and skills between Maori and non-Maori. It has been characterised by a near-total removal of the distinction between 'researchers' and 'researched'. The reduction of the distance between 'researcher' and 'researched' us a major requirement for the conduct of successful cross cultural research (Bishop, 1992a; Bishop & Glynn, 1992b). Achievements thus far reflect, I believe, the strength of commitment of both parties in this research to the kaupapa of improving the reading skills of Maori children i roto i te reo rangatira.

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