Peer Tutored Instruction in Reading

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Abstract

This paper describes Hong Kong research into peer tutored instruction in reading. Tutors were trained to use Paired Reading, a technique appropriate for use across a range of ability levels, and adaptable for reading instruction in languages and orthographies other than English.

The Hong Kong research confirms that peer tutors can successfully deliver reading instruction, with both tutors and tutees benefiting in terms of enhanced reading proficiency, intrinsic motivation to learn, and self-concept. It also suggests some factors which may enhance the effects of peer tutoring upon achievement. For tutees these are content coverage, peer self-concept and intrinsic motivation to study. For tutors the predominant factor is locus-of-control.

Interestingly, tutors' instructional behaviours during tutoring sessions appear not to have any effect on tutoring outcomes, except in so far as they might slow down coverage of the material being read.

Peer Tutoring

Research on peer tutoring (PT) consistently reveals achievement gains for both tutors and tutees across a large number of knowledge and skill areas. Somewhat less consistently, and often anecdotally, the research suggests gains for both parties in non-achievement areas such as self-concept, attitudes to learning, interpersonal relationships etc. One is drawn to the conclusion that students are an important instructional resource. This is an extremely significant finding. Psychologists and teachers working in developing countries will be aware that schools are almost always rich in students, no matter how poorly resourced they may be otherwise.

The literature suggests various explanations for PT gains. The more common explanations are displayed in Figure 1. They tend to fall into two categories, according to whether they attempt to explain tutor or tutee gains. Within each category, they may also be subdivided according to whether they focus on instructional or social psychological features of the PT experience. This is particularly clear in the case of explanations for tutee outcomes. Research is inconclusive on which of these accounts, if any, is correct.

FIGURE 1: THEORETICAL PERSPECTIVES ON GAINS IN PEER-TUTORING

A. Theoretical Perspectives on Tutee Gains

1. Perspectives emphasising individualised learning

  (i) Reduced Class size

  (ii) Increased opportunities to learn and to respond

    — 'exposure time' / 'time allocated to instruction'

    — 'academic-engaged time' (= on-task behaviour)

    — 'academic responding time'

  (iii) Increased academic productivity

  (iv) Increased feedback (for correct and incorrect responses)

  (v) Self-pacing

2. Perspectives focusing on social psychological aspects of PT

  (i) Shared tutor-tutee experience (age, culture, background)

    — leading to freer communication than would be the case with a teacher

  (ii) Modelling of studying behaviour and attitudes

    — leading to the tutee adopting desirable attitudes and behaviour.

B. Theoretical Perspectives on Tutor Gains

  (i) Opportunities to organise and reflect upon the material

    — leading to better mastery of the material.

  (ii) Realisation that there is a use for what he has learned

    — leading to increased motivation, interest in the material

  (iii) Experiencing the role of teacher

    — leading to increased empathy, and respect for learning

  (iv) Experiencing success

    — leading to enhanced self-esteem, attitudes to subject and school.

  (v) Enhanced active participation in subject matter

    — leading to enhanced learning

  (vi) Novelty

    — leading to increased interest in the material.

For reviews of PT research see recent texts by Topping (1988) and Goodlad and Hirst (1989), as well as the still useful Cohen et al. (1982) review.

PT is an instructional vehicle; a means by which instruction can be delivered to the student, rather than a form of instruction in itself. In the research described in this paper, PT was used to deliver an instructional technique called Paired Reading (PR). PR is described in a later section of this paper.

Peer tutoring in the Asian Context.

PT is a cooperative learning approach, encouraging students to care not only about how well they do in school, but also about how well others do. It provides an alternative (or adjunct) to the more orthodox teacher-directed instructional methods commonly found in classrooms in the region; methods that reflect cultural stereotypes of the teacher's role, in turn reflected in the very architecture and furnishings of the typical classroom, and in the extremely high stress and burn-out figures in places such as Hong Kong (Chan and Hui, 1995).

From the student's perspective, cooperative learning methods such as PT may provide a means of utilising traditional Asian cultural values. In this regard the present writer is best acquainted with Chinese culture. Others will be better able to comment on the relevance of cooperative learning methods in, for example, Taoist, Buddhist, Hindu, Islamic and Catholic cultures.

Chinese culture traditionally places a high value on collectivism (a concern for the good of the group rather than for the individual at all costs), and human-heartedness (a concern for the welfare of others). For a more detailed discussion of these values see Yang (1986), and the Chinese Culture Connection (1987).

Reports of PT in Asian educational contexts are relatively few (Sheridan, 1990, and Potts, 1994, both of whom report PT in PRC schools, and Pang, 1993, and Winter, 1989, 1995, all of which describe PT in schools).

FIGURE 2: PAIRED READING: INSTRUCTIONS FOR TUTORS

1. Read aloud with your tutee.

2. Read at your tutee's pace.

3. When your tutee knocks then let your tutee read alone.
   Follow the words with your eyes.

4. If your tutee pauses then wait 4 seconds before giving help.

5. If your tutee makes a mistake then —
   point to the word
   and give your tutee 4 seconds to read it correctly.

6. If your tutee still can't read the word correctly then -
   read it out aloud for your tutee,
   let your tutee repeat the word,
   and continue reading together aloud.

7. Praise your tutee when he or she —
   reads a difficult word,
   corrects a mistake,
   or knocks.

FIGURE 3: THEORETICAL PERSPECTIVES ON GAINS IN PAIRED-READING

1. **Modelling Effects**
   (i) Simultaneous reading
   — a means of introducing new reading responses (participant modelling, scaffolding)

   (ii) Error-correction-by-modelling (and simultaneous reading)
   — a means of encouraging reading strategies based on meaning

   (iii) Prompt error-correction
   — removes a sense of (and anxiety about) failure, low self-esteem,
   — maintains reading flow, enhances opportunities to use syntactic and semantic cues

   (iv) Tutors' reading-related behaviours.
   — model appropriate attitudes during reading

2. **Effect Arising From Repetition of Modelled Words**
   — provides opportunities for positive practice (overcorrection)

3. **Reinforcement Effect**
   — a means by which new reading responses are strengthened

4. **Free Choice of Reading Material**
   — avoids aversive experiences during reading
   — increases motivation to read

5. **Extra Reading Practice and Content Coverage**
   — through extra time allocated to reading
   — through increased academic engagement

6. **Other Perspectives**
   (i) extra individual attention
   (ii) gives the tutee control over the tutoring process
   — what to read, how fast to read, and when to read alone

Paired Reading: The Instructional Method Used in this Research

'Paired Reading' (PR), developed by Morgan (1976), focuses on the development of oral reading skills. The method is summarised in Figure 2. The reader will note that it emphasises *reinforcement* for correct reading, *delayed modelling* as a form of error correction, and repeated shifts between *independent reading* (whenever the tutee feels confident enough to read alone) and *simultaneous reading* (immediately after any error has been corrected). For fuller details regarding the nature of PR see, for example, papers by Topping and Lindsay (1992a, 1992b).

Psychologists working in non-English speaking countries should note that PR can be used to teach reading in languages and orthographies other than English (for example, Cupolillo, 1995; Winter, 1989), can benefit tutees aged from six years into adulthood, and can be delivered by teachers, parents, adult volunteers, and (increasingly in the last decade) peer-tutors. For an early example of peer-tutored Paired Reading (PT/PR) see Winter and Low (1984). A

FIGURE 4: SUMMARY OF RESEARCH DESIGN

PRETEST DATA

PT/PR GROUP		CONTROL GROUP	
STUDENTS	TEACHERS	STUDENTS	TEACHERS
SDQ	TRAQ	SDQ	TRAQ
LPQ		LPQ	
WRAI		WRAI	
CLOZE		CLOZE	
WISESPAN		WIDESPAN	

Division pf PT/PR group into tutors and tutees according to reading ability
Cascade matching of tutors with tutees
Formation of supervision subgroups:
'PF', 'A' and 'NS'
Training of tutors and tutees

ADDITIONAL PRETEST DATA

STUDENTS	TEACHERS
PEQ1	TEQ1

TUTORING
Ten weeks, 15 minutes daily
Tape recorded tutoring sessions
Collection of Tutoring Data

INDIVIDUALISED READING

POSTTEST DATA

PT/GROUP		CONTROL GROUP	
STUDENTS	TEACHERS	STUDENTS	TEACHERS
SDQ	TRAQ	SDQ	TRAQ
LPQ	TEQ2	LPQ	
WRAI		WRAI	
CLOZE		CLOZE	
WIDESPAN		WIDESPAN	
PEQ2		PCQ	

review of PT/PR research can be found in Topping and Lindsay (1992b).

The PR research echoes that in PT. It consistently demonstrates achievement gains, specifically in the area of reading accuracy, comprehension, and style. There is also some evidence (albeit somewhat inconsistent and often anecdotal) that PR can yield non-achievement outcomes in areas such as self-concept, attitudes to reading, and approaches to learning. The research on PT/PR indicates that benefits tend to be shared by both tutors and tutees.

As is the case for PT, the gains made in PR have been explained in many ways. The more common are summarised in Figure 3. There has been relatively little research into which, if any, of these suggested factors are relevant. In any case they focus on explaining tutee outcomes; suggested explanations for tutor gains in PT/PR are scarce.

Recent Hong Kong Research into PT/PR

The research described here was aimed, among other things, at examining PT/PR outcomes (learning, motivational and affective; for tutors and tutees), and the factors that predicted outcomes. The design is summarised in the paragraphs below, and in Figure 4.

A PT/PR project was conducted in three English-medium primary schools in Hong Kong, each catering to a range of national and ethnic groups. Within each school one class engaged in PT/PR, while another acted as control group and engaged in private reading.

At pretest all students sat a number of instruments assessing reading ability, attitudes to reading, approaches to learning, self-concept, and locus of control. The instruments used were the Cloze and Widespan reading tests (Young, 1982; Brimer, 1972), a reading attitude inventory composed of the Estes and Dulin- Chester scales (Estes, 1971; Dulin and Chester, 1980), the Learning Process Questionnaire (LPQ: Biggs, 1987), incorporating a locus-of-control scale, and an abbreviated version of the Self- Description Questionnaire (SDQ: Marsh, 1988).

Taken together, they allowed us to study not only how well students could read, but also how they felt about reading and more generally about learning, as well as how they felt about themselves as people and about the degree to which they felt able to influence their own lives. All these were important, not only as potential factors influencing the effectiveness of PR, but also as areas in which PR is often reported to have an effect. For that reason the same instruments would be used at post-test.

The next steps in the project involved the eighty six PT/PR students only. First, PT/PR students were allocated roles of tutor and tutee based on their scores on the two reading tests. The more able half of the class acted as tutors to the less able. Tutors were matched with tutees according to a 'cascade' method, in which the most able tutor worked with the most able tutee, the next most able tutor worked with the next most able tutee, and so on until the least able tutor was allocated to the least able tutee. This was an attempt to ensure that ability differentials were kept relatively uniform.

FIGURE 5: VARIABLES EMPLOYED IN THE RESEARCH

A. STUDENT VARIADLES

Sex (M: male, F:female)
Tutoring Role (TE:tutee, TR:tutor)
Supervision (PF: Performance Feedback, A: Attention, NS: No Supervision)

Self-Description Questionnaire (SDQ)
READING-SELF: Reading Self-Concept
SCHOOL-SELF: School Self-Concept
ACADEMIC-SELF: Academic Self-Concept
PHYSICAL-SELF: Physical Self-Concept
PEER-SELF: Peer Self-Concept
NONACADEMIC-SELF: Non-Academic Self-Concept
GENERAL-SELF: General Self-Concept
OVERALL-SELF: Overall Self-Concept

Learning Process Questionnaire (LPQ)
SURFACE-MOTIVE: Surface motive
SURFACE-STRATEGY: Surface strategy
SURFACE-APPROACH: Surface approach
DEEP-MOTIVE: Deep motive
DEEP-STRATEGY: Deep strategy
DEEP-APPROACH: Deep approach
ACHIEVING-MOTIVE: Achieving motive
ACHIEVING-STRATEGY: Achieving strategy
ACHIEVING-APPROACH: Achieving approach
DEEP-ACHIEVING-APPROACH: Deep-achieving approach
LOCUS-OF-CONTROL: Locus of control

Reading Tests
WIDESPAN: Widespan test raw score
CLOZE: Cloze test raw score

Wisconsin Reading Attitude Inventory (WRAI)
DULIN-READING-ATTITUDES: Dulin-Chester Scale
ESTES-READING-ATTITUDES: Estes Scale
OVERALL-READING-ATTITUDES: Overall score

Pupil Expectations / Experiences (PEQ1/PEQ2)
EVENT-EXPECTATIONS/EXPERIENCES: Expectations/experiences re: project events
OUTCOME-EXPECTATIONS/EXPERIENCES:Expectations/experiences re:project outcomes
OVERALL-EXPECTATIONS/EXPERIENCES: Overall expectations/experiences

B. TUTORING VARIABLES

Tutees Behaviours
WORDS-READ Number of words read by tutee.
ERRORS Number of tutee errors (CORRECTIONS + NONCORRECTIONS)
ERROR-RATE Tutee errors as percentage of words read by tutee (ERRORS / WORDS-READ)
SIMULTANEOUS-READING Duration of simultaneous reading during session.

Tutor Behaviours
REINFORCEMENTS Number of instances of praise
REINFORCEMENT-RATE Tutor praise as percentage of words read (REINFORCEMENTS / WORDS-READ)
CORRECTIONS Number of errors corrected by tutor.
CORRECTION-RATE Tutor corrections as percentage of tutee errors (CORRECTIONS / ERRORS)
MODELS Number of tutor corrections by modelling (SHORT-PAUSE-MODELS + LONG-PAUSE-MODELS)
MODEL-RATE Tutor modelling as percentage of tutee errors (MODELS / ERRORS)
SHORT-PAUSE-MODELS Number of corrections involving short-pause modelling.
SHORT-PAUSE-MODEL-RATE-1 Tutor short-pause modelling as %age of corrections (SHORT-PAUSE-MODELS / CORRECTIONS)
SHORT-PAUSE-MODEL-RATE-2 Tutor short-pause modelling as %age of errors (SHORT-PAUSE-MODELS / ERRORS)
LONG-PAUSE-MODELS Number of corrections involving long-pause modelling.
NON-CORRECTIONS Number of errors left uncorrected by tutor.

Note: short-pause-models defined as any modelling supplied after a pause of 2 seconds or less.

Second, tutors were divided into three subgroups according to the sort of supervision they would receive during the project. It was thought likely that supervision might have an impact on outcome, whether or not it had an effect upon what happened during tutoring sessions.

Third, tutors were taught to use PR by way of an established training procedure involving oral and written instruction, in vivo demonstration, discussion, and practice with feedback.

Finally, tutors and tutees completed a 'Pupils' Expectations Questionnaire' (PEQ1), a instrument developed by the author to examine what students thought would happen during and as a result of the project. This information was considered important as a possible factor influencing project outcomes.

It was at this point that the project properly began. It lasted ten weeks. Throughout the project students in the control classes engaged in private reading for fifteen minutes of class-time each day. The PT/PR classes engaged in peer-tutored Paired Reading, again for fifteen minutes of class-time daily. Tutors received supervision according to the subgroup into which they had earlier been placed. 'Performance Feedback' (PF) tutors were observed by their teacher once a week, and were offered constructive feedback on how well they were using the PR technique in which they had been trained. Tutors in the 'Attention' (A) subgroup were also observed by their teacher, but were offered no corrective feedback at all. Instead the teacher expressed interest in and asked the tutor questions about what was being read. Finally, tutors in the 'No Supervision' (NS) subgroup were left entirely alone after having been trained. During the project tutors were required on a rota basis to tape-record their sessions with tutees. For each tape-recording a photocopy was made of the material being read. The rota ensured that data was collected on both tutor and tutee behaviour on up to three occasions (at the start, towards the middle, and at the end of the project). Tutoring was subsequently analysed to yield for each tutoring pair, and for each occasion, a total of fifteen tutoring variables.

At the end of the project students completed the instruments as for pretest, with the following exceptions. First, PT/PR students completed a questionnaire (PEQ2) designed to assess their experiences regarding what happened during and as

a result of the project. Items matched those used in the expectations questionnaire used at pretest. Second, students in the control group completed the 'Pupils' Contamination Questionnaire' (PCQ), designed to assess the degree to which control students knew about or practiced what was happening in the PT/PR classes. There was little evidence that they did either.

The variables examined in this research are summarised in Figure 5.

In passing, it should be noted that pre- and post-test data was also collected from PT/PR and control teachers in the areas of project expectations and experiences (through instruments named the TEQ1 and TEQ2 respectively) as well as in attitudes to the teaching of reading (through an instrument called the TRAQ). This data was not examined in a formal fashion.

Results and Discussion

Tutoring Outcomes

Outcomes were examined for reading ability, reading attitudes, self-concept and learning approaches (including locus-of- control). Analysis of covariance (ANCOVA) was employed as a way of examining post-test scores in a way that took into account pretest differences. Initial findings were that PT/PR students (tutors and tutees) made reading gains generally larger than those of the control group students who engaged in private reading. Indeed, gains were around 1.2 years compared with the control group's 0.4 years.

In addition, tutors and tutees showed higher general intrinsic motivation to learn than did control students. Beyond this, there was evidence that, for girls, PT/PR acted to enhance self-concept for peer relationships, as well as general feelings of self-worth.

PT/PR appeared to have no other significant effects on outcome variables as compared with the control group. However, within the PT/PR group itself there were indications of other effects. On the positive side, tutors seemed to end the project feeling a little more in control of their lives. On the negative side, tutees ended the project somewhat less interested in reading. Finally, while tutors and tutees showed enhanced intrinsic motivation to study, they showed somewhat decreased levels of surface and achieving motivation (based, respectively, on a desire to minimise effort and

to complete. This last finding may be interpreted either positively or negatively depending on one's view of the role of these types of motivation in learning.

Factors Determining Project Outcome

The following section focuses exclusively on the factors that determine reading ability outcomes. Factors for other outcome variables are not examined in this paper.

All 44 available variables were examined for possible effects on outcome. These consisted of two group variables (sex and supervision subgroup), 15 tutoring variables, and 27 student characteristics (in the areas of pretest reading ability, reading attitudes, self-concept, learning approaches (incorporating locus-of-control) and project expectations).

Their effects on reading outcome were examined by way of multiple regression analysis (MRA) and path analysis, with separate analyses for tutors and tutees. The following sections present the results of these analyses, first for tutees and then for tutors.

Factors determining tutee reading outcomes

Reading rate was the most important predictor of tutees' post-test reading ability, surpassing even the effect of pretest reading ability upon post-test! Tutees who read quickly in tutoring sessions were the ones who came out of the project with the highest reading ability.

In so far as reading rate indicates how much is read per unit time, it also acts as a fairly good proxy measure for 'amount read during the project' (content coverage). We may therefore conclude that those students who read more material were those who gained most out of the project.

Tutors' behaviours during tutoring sessions had no direct effect on tutee reading outcomes. However, there was an indirect effect for 'long-pause- modelling' — the practice of pausing substantially (ie more than two seconds) before supplying a word to tutees in difficulty. Tutors who frequently employed long-pause-modelling appeared to slow down their tutees' reading rate and therefore impaired their post-test reading ability.

Interestingly enough, even short-pause-models (models supplied after a pause of under two seconds) appeared to slow reading down, but to a much smaller extent than was the case for long-pause-models.

It is easy to see how delayed error-correction may slow reading down. First, it eats up valuable time that might otherwise be used by the tutee for reading. Second, it may interrupt the flow of the text, making it more difficult for the tutee to make subsequent use of sentence cues. Regardless of the mechanism by which it has its effect, this long-pause-modelling effect is an important finding, suggesting that tutors who pause for several seconds before giving help (and who therefore comply with the requirements of PR) are actually doing a disservice to their tutees!

The reader might argue that it is not the correction of errors that slows reading down, rather it is the making of errors; that reading rate decreases when the tutee is reading difficult material. This is a plausible argument. However, the simple correlations between reading rate and error variables were far lower than for reading rate and long-pause-models, and, when all other effects were taken into account, it was (as we have seen) long-pause-models (*not* error frequency or error rate) that acted as a regression predictor for reading rate.

Other findings were that *post-test intrinsic motivation* impacted on reading ability, so that students who ended the project with high curiosity for study were also those who gained most in terms of reading. Tutor behaviour once again exerted an indirect effect on reading ability (this time through post-test intrinsic motivation) with tutors who offered frequent correction (particularly through use of *short-pause-modelling*) serving to increase tutees' curiosity for learning, and thereby enhancing their reading ability. Once again, it appears that delayed error correction (albeit an integral PR component) may be counter-productive.

Finally, *pretest self-concept for peer relationships* had a strong (and direct) effect on reading outcome, with tutees who were confident in peer relationships getting the most out of peer- tutored Paired Reading in terms of enhanced reading ability. At the risk of over-simplification, it seemed that tutees who entered the project confident in peer relationships were able subsequently to gain more from the PT/PR experience.

Factors determining tutor reading outcomes

Only one variable appeared to have an effect on tutor reading outcomes. This was *locus-of-control*, with 'internal' tutors (those who believed themselves to be in control of events in their lives) getting the most out of the project in terms of reading ability. Again, at the risk of over simplification, it seemed that those tutors gained most who had entered the project comfortable about being put in a position of leadership and control.

Interestingly enough, it was these 'internal' tutors who tended to delay least in supplying help to their tutees, and thereby enhanced their tutees' reading rate / content coverage, and their intrinsic motivation to learn.

Factors that apparently do not determine reading outcomes

It will be clear from the above paragraphs that a large number of variables had little or no effect on either tutor or tutee reading outcomes. Conspicuous among these were the following three: performance feedback for tutors during the project, reinforcement for tutees during reading, and student expectations at the start of the project. These findings each contradict commonly held views regarding instruction; first that nonprofessional tutors need to be carefully supervised after having been trained to tutor; second that tutors should be careful to praise tutees for correct responses, and third, that students gain most from a project when they enter it with high expectations.

Summary and Discussion

This research indicates that peer tutoring can enhance achievement, intrinsic motivation to study and (for some students) self-concept. The study should be of particular interest to educators in Asia because it involves a technique of reading instruction (PR) capable of being applied in a number of languages and orthographies.

The findings further suggest the factors that might influence successful learning in PT/PR. First, tutoring had little *direct* impact on tutees' reading outcomes. We may conclude that tutee reading outcomes are relatively unaffected by the quality of tutoring offered. Instead, tutees gain most in reading ability when they read a lot of material, and when their involvement in the project has increased their overall curiosity for study. Both content coverage and curiosity for study are enhanced when tutors correct errors with minimum delay.

Beyond this, tutees gain most who enter the project most confident in their relationships with peers.

For tutors, gains appear greatest for 'internal' students; those who enter the project with feelings of being in control over events in their life (and therefore perhaps comfortable with being in the controlling role of tutor). Interestingly, it is these tutors who pause least before giving help, and therefore help their tutees read more in the allotted time and gain more from the project.

The findings on reading rate and content coverage suggest that PT/PR is effective in so far as it ensures that a large amount of material gets read. This writer suggests that several aspects of the technique may serve to ensure high content coverage.

First, it is novel and enjoyable, leading to high academic- engagement rates whether the child is being tutored by his teacher, a parent or a peer.

Second, it allows the tutee free choice of his own reading material. On one hand this serves to enhance interest (and therefore academic engagement). On another, free choice almost invariably means the material being read is 'easy', generating a low error rate (averaging 5% in this study). In an essentially self-paced task such as oral reading, a high success rate will generally ensure high content coverage. Note in this connection an earlier finding from Winter (1988) that error rate was correlated with reading gain.

Third, it ensures that, whenever the tutee does encounter a difficulty, help is on hand and is delivered reasonably quickly (within several seconds), and in a time-efficient form (the correct word is supplied). Prompt and efficient error-correction ensures that the tutee spends his time reading rather than laying siege to difficult words.

Notwithstanding the above, the findings from this study indicate that even PR error-correction procedures serve to slow reading down, with *immediately* supplied models having the smallest impact. This suggests that tutees may benefit most when reading

'easy' material that generates low error-rates (or at least few errors that need to be corrected.

Finally, it should be noted that PT is an innovative technique for many Asian classrooms, and its adoption by teachers demands a shift in perceptions (of teachers, educational administrators, parents and students) regarding the role of teachers; from sole provider of instruction to manager of learning experiences, and from a narrow emphasis on achievement to an additional concern for promoting among students an enduring motivation to learn, as well as personal and social adjustment.

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