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The Effectiveness of Explicit and Implicit Strategy Training

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Three groups of ten-week reading programmes were set up in Nagoya Women's University and in Nanzan University in Japan under controlled conditions : one experimental programme was called the Explicit Strategy Training, the other the Implicit Strategy Training and the last control group. The subjects' reading ability was measured, before and after the teaching procedures, by using the Vocabulary and Reading Comprehension section of Level 2 TOEFL (Test of English as a Foreign Language). The experiment was designed a) to investigate whether these two different experimental procedures can bring about significant improvements in reading test results compared to that of the control group b) to compare the degree of progress between the two experimental groups and c) to identify the possibilities and limits of each approach. The test results showed marked improvement in the Explicit Strategy Training Group but not a statistically significant difference in the Implicit Strategy Training Group. Speculations as to the factors influencing the results are offered and a number of suggestions are made concerning future research and effective use of these two teaching approaches.

INTRODUCTION

The advancement of reading research in the last two decades has resulted in our greater awareness of the complex and interactive nature of L1/L2 reading processes involving readers' variables as well as those belonging to text itself. This development has stimulated the quest for alternative approaches to teaching reading other than the Grammar-Translation Method, which still seems to prevail in ELT programmes in many parts of the world (e.g. Japan). Since late 70's reading strategy training has attracted attention of the reading researchers and teachers as an more effective alternative to the conventional method. This paper will consider this potential approach in detail and examine its efficacy for the Japanese University EFL learners.

Strategy Use and Reading Competence

Remarkable progress has been made in the 80's in literacy research in L1 and also increasingly in L2 reading supported by developments in related areas such as cognitive

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psychology and information processing. The current conceptions of reading research portray readers as active agents who direct their own cognitive resources in reading. Learners' cognitive resources include knowledge of the reading process and use of a variety of reading strategies, i. e. conscious or unconscious procedures used in reading as a way of achieving a goal (e. g. scanning a text for specific information).

Both descriptive and empirical research of readers' strategy use seem to suggest that successful readers are those who are aware of the kinds of texts and the kinds of suitable strategies, and who can monitor and control metacognitively their own strategy use according to the particular purpose of reading. In L1 reading research, younger and less proficient readers are reported to use fewer strategies in a less effective manner and are less effective at monitoring properly (extensive reviews in Garner, 1988). Similarly in the L2 context, the successful readers are shown to be better and comparatively conscious strategy users, with somewhat more contradictory data indicating the complexity of the issue which involves unsolved research topics such as reading ability transfer from L1 to L2, and how the learners' language ability affects their reading ability in L2 (Alderson, 1984 ; Bossers, 1991 ; Carrell, 1991).

Explicit Strategy Training

The findings indicating the efficacy of strategy use to reading proficiency have inspired strategy training experiments in which direct 'explicit' instruction of reading strategies is given to the learners for a certain period of time and its effect is then measured. In L1, consistent positive results have been reported (Winograd & Hare, 1988 ; reviews in Garner, 1988). In the context of L2, some empirical studies measuring longitudinal training effects with pre- and post tests have proved explicit strategy instruction to be relatively effective (Carrell, Pharis, & Liberto 1989 ; Barnett 1988 , Kern 1989) The results of these studies showed that there seems to be a positive relationship among reading comprehension, strategy use and strategy awareness. The implication of these studies is that L2 reading pedagogy, at least at university level, would benefit from employing comprehension-fostering strategy training.

The research on strategy training, however, seems to be very much in the developing stage, considering the scarcity of L2 strategy studies and their limitations in scope and depth. Kimura et al (1993) portrayed how the results of previous strategy training research should be interpreted with caution because of its methodological weaknesses. Anderson (1991) and Pritchard (1990) depicted how the relationship between strategy use and comprehension is not simple and straightforward and warned against simplistic assumptions that the appropriate use of certain strategies will always lead to better reading performance.

Implicit Strategy Training

Masuhara et al (1995) questioned the assumption often made in the previous strategy training research that all the learners should be able to benefit from the explicit strategy

training. The strategy training demands dual task of 'paying attention to one's own metacognitive behaviour' whilst 'processing the L2 text'. In their 10 week experiment of explicit strategy training with the Japanese female university students, they found amongst their subjects considerable cases in which this dual processing at the cognitive and metacognitive level causing cognitive overload. They even suspected the possibility that the metacognitive training (which is supposed to facilitate desirable reading behaviours) was in fact impeding the natural reading processes to take place.

Krashen (1991 : 286-287) claims that genuine reading for meaning is far more valuable than workbook exercises and that 'it is the source of "skills"' because 'reading is another source of comprehensible input which stimulates language acquisition (ibid. : 409). He counter-argues against scholars who assume that skills must first be taught directly and are made 'automatic' by reading (e. g. Mork, 1972 : 441 ; Sadoski, 1980 reported in Krashen, 1988 : 286-287).

Overall, then, the survey of literature so far in this paper allows us to formulate three future directions for reading instructions for Japanese EFL university learners:

1. Teaching strategy in a direct and explicit manner, which is by far the most prevailing approach among the strategy training studies since 70's
2. Teaching reading for meaning without any intervention (e. g. pleasure reading, extensive reading)
3. Teaching strategy in an implicit manner, which involves learners responding to comprehension-fostering tasks requiring unconscious strategy use whilst they are focusing on the meaning of the text.

The authors hypothesised that the third option should be optimal because this approach would not only decrease the negative side-effect of the explicit training which Masuhara et al (1995) reported but also does not contradict Second Language Acquisition research findings.

Explicit v. Implicit Reading Strategy Instruction

Ellis (1994) summarises the previous studies comparing the effect of the explicit formal instruction (i. e. teaching of grammar in which learners are given a rule which they then practice using) and implicit formal instruction (i. e. teaching of grammar in which learners are required to induce rules form examples given to them). He concludes that 'On balance, the available evidence indicates that an explicit presentation of rules supported by examples is the most effective way of presenting difficult new material (Ellis, 1994 : 642). At the same time, however, he adds that '... the effectiveness of an implicit or explicit instructional treatment may depend on the type of linguistic material being learnt and the characteristics of the individual learner'.

The comparison between the explicit and implicit approaches by Ellis is confined in the realm of grammar teaching. It is the authors' contention that this comparison of two approaches can be expanded in the enquiry of the efficacy of the strategy training studies.

THE EXPERIMENT

In evaluating the efficacy of the strategy training to L2 reading by the Japanese University students, this study specifically addresses the following questions:

1) Can the strategy training programmes improve the learners' EFL reading ability ?
2) Which teaching procedure will bring about greater improvement?
3) What are the major factors causing this result?

Sampling of the Subjects

Initially the total of 110 students in three intact classes of two universities participated in the experiment. Those who missed either the pre- or post-test were then excluded from the data, which left 97 subjects for the final analysis. Due to administrative constraints, 38 subjects in Experimental Groups 2 (the Explicit Strategy Training Group) had to be selected from women's university majoring English and English Literature, whilst 26 subjects in Experimental Group 1 (the Implicit Strategy Training) and 33 subjects in Control Group (the Grammar Translation Group) were taken from the population of co-educational university students specialising in Business and Administration. The assignment of Experimental Group 1 (the Implicit Strategy Training) and Control Group was random. All the subjects had already had 6 years of previous regular EFL training in Japanese secondary schools using the Grammar-Translation Method. The courses they were taking in the college alongside the experimental treatment were recorded by the authors.

Treatment

The same instructor (first author) provided the three different teaching procedures with L1 as a medium of instruction. The same length of class hours (one 90-minute class per week for 8 consecutive weeks) were allocated to all the groups. The materials used for the treatment was a task-based reading textbook by Tomlinson and Masuhara (1994), and one text consisting of approximately 1,000 to 1,500 words were used for one class period. The strategies covered for the two experimental groups were (1) prediction, (2) schema activation, (3) personalisation, (4) inference and (5) visualisation.

The difference among the three groups lied in the methodology. In Experimental Group 1 (the Implicit Strategy Training), the course aim was to help the subjects acquire subconsciously the use of reading strategies listed above whilst they consciously focus on the content and the communicative purpose of each task. In Experimental Group 2 (the Explicit Strategy Training) the same course aim was pursued through awareness raising tasks which involve identification and discussion of useful strategies followed by short exercises. In Control Group (the Grammar Translation Group) the programme aimed to help the learners become familiar with and also be able to use structural items included in the texts. The main activities were translation (from English to Japanese), vocabulary building, and explanation of the rules of important structures taken from the text.

Measurement

The subjects' reading proficiency was examined before and after the treatment using the Vocabulary and Reading Comprehension section of two different but parallel forms of Level 2 TOEFL in ITP (Institutional Testing Program). TOEFL is a standardised multiple-choice test which was originally developed to measure the English proficiency of non-native speakers of English wishing to study at colleges and universities in the United States. The ITP was devised to allow schools and other organisations to administer a TOEFL test at their own locations on dates convenient for them. The Level 2 TOEFL, available only through ITP, is constructed to measure the same language skills as the ordinary TOEFL but designed for testees with lower levels of English proficiency. The characteristics of Level 2 TOEFL Vocabulary and Reading Comprehension Section are as follows (Educational Testing Service 1991) : Possible Score Range (20–50) ; Number of Items (40) ; Testing Time (31 minutes) ; Reliability (Standard Error of Measurement) (0.85). The first and last class periods of the 10 week treatment were used for administering the Level 2 TOEFL, following strict administration guidelines so that the two groups would have the same conditions for the measurement. The scoring was done by the Educational Testing Service and the statistical analyses were done by the authors. The questionnaire was given at the end of the treatment period and the subjects were asked to evaluate, on a 5 point scale with 5 as the highest, in terms of the usefulness, interest, and effect of what they had learned. The subjects were asked to add comments for each rating specifying why they chose that rating, and also to make comments on the whole course in a free composition.

RESULTS

Testing the Assumptions Prior to Applying the Statistical Tests

The degree of equivalence between the three groups were examined using the distribution of the pre-test scores. The shape of three samples was recognised as not significantly different from normal (Shapiro-Wilks and K-S Lilliefors tests). The homogeneity of variance of the three groups was confirmed (Levene Statistic Test). However, the result of One-way ANOVA showed significant difference, which indicated that the three groups did not belong to a population of the same mean. A box plot depicted that the mean of Experimental Group 2 (the Explicit Strategy Training) was significantly lower than those of the other two.

Comparison of the Improvement within and between the Three Groups

Table 1 shows the improvement of each group in terms of the difference in the TOEFL scores.

Table 1. Mean of the Gain Scores between the Pre and Post Test

Group	no. of subjects	Mean	Standard Deviation	Standard of Error
E1-ImplicitST	26	1.15	4.90	0.96
E2-Explicit ST	38	3.37	4.47	0.73
C-Grammar T	33	0.79	3.86	0 67

The Contrast Coefficient Matrix of One-way ANOVA was designed in order to find out :

Contrast 1 . Are the two strategy training approaches prove to be more effective than the control treatment ?

Contrast 2 : Is the Implicit Training more effective than the control treatment ?

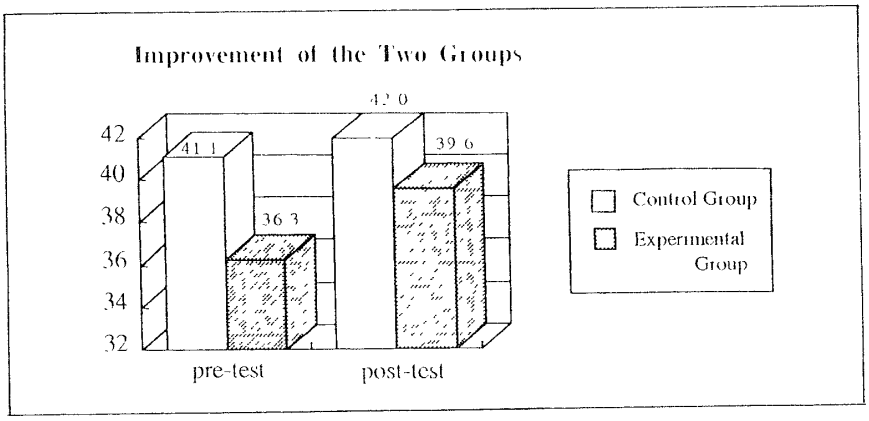
Contrast 3 : Is the Explicit Training more effective than the control treatment ?

The result of the Pooled Variance Estimate is summarised in Table 2

Table 2. Pooled Variance Estimate

	value	S E.	T value	D.F	T Prob.
Contrast 1	-2.95	1.90	1.55	94	0.12
Contrast 2	-0.37	1.15	-0.32	94	0.75
Contrast 3	-2.58	1 05	-2.47	94	0.02

Table 2 shows that explicit training approach clearly brought statistically significant gains in the scores, thus implying the effectiveness of the treatment The result for Contrast 1 which tests the effectiveness of both experimental approaches seems not too far off from showing some tendency of the treatment effect ($.05 < p < .10$). Quite contrary to the authors' expectation, the effect of the implicit training was not detected at all These results were further confirmed by LSD test at the 0.05 level. This result can be visually expressed in Figure 1 in that Experimental Group 2 whose pre-test score means were significantly lower than that of Control Group have in fact improved and narrowed the gap in the post-test.



Qualitative Analysis of the Two Experimental Approaches

A questionnaire was administered to the three groups as a supplementary source of information to see if remarkable reactions may be reported. The questionnaire consisted of 5 point rating (5 as the highest) in terms of usefulness, interest and effectiveness and also of general comments. As a whole, the rating by the subjects of the two experimental groups was favourable. The Implicit Strategy Group, however, showed an interesting pattern in their response. The scores of each of the three criteria indicated wider spread compared to the curves of the other groups: a larger percentage of the subjects gave higher marks than the other groups but also a larger percentage of the subjects chose lowest marks in all three criteria. The instructor commented that the class as a whole seemed motivated and engaged in the tasks (e. g. visualisation fostering tasks such as drawing the characters of a poem) but there were some subjects who showed reluctance to do the tasks which required active roles out of the readers.

DISCUSSION

In answer to the first research question as to the efficacy of the two teaching approaches, the result seems to suggest that the explicit strategy training does enhance L2 reading performance with much less convincing result for the implicit strategy training. The second research question as to the more effective procedure resulted in the explicit strategy training. Then, if we hold to the assumption that explicit strategy training does improve the learners' reading performance, at least, for the Japanese university female right after the treatment, what has caused this phenomenon? This third research question is harder to answer. Issues arising from the experiments and speculations are presented below.

Cognitive Overload

The Explicit Strategy Group seemed to react positively to the novelty of the explicit strategy learning and the problems reported by Masuhara et al (1995) was not made apparent to the instructor of this experiment. It may be because of the different teaching materials and different instructors, or of the learners' factors. It is also interesting that the response to the Implicit Strategy Training showed curious split. Further investigation is called for to clarify : a) whether the metacognitive instruction could have a negative side-effect of cognitive overload, and b) the relationship between the strategy instructions and the learning styles.

Compound Effects

Due to the administrative constraints, the authors could not achieve the necessary strict control over the variables such as subject speciality and the amount of supplemental English input outside the experiment. The quantification of these variables should be incorporated into the further analysis using ANCOVA before stronger claims should be made based on the present analysis.

Duration of the Treatment

Theoretically and intuitively, the Implicit Strategy Training seems worth considering as an alternative method of teaching reading. Further studies with different subjects and longer duration may reveal different results, and the accumulation of such research should testify the validity of the Implicit Strategy Training.

CONCLUSION

The Explicit Strategy Training applied to Japanese EFL University female English majors proved to be significantly effective but the Implicit Strategy Training did not appear to achieve positive effect. Two approaches were compared and speculations on the factors that might have influenced this result were presented. Due to the limitation of the experimental constraints, further analysis is called for before this results can prove to be reliable.

The scope of this research, however, seems to be still very valid in that :

1. very few research addresses the possible negative side-effect of the metacognive training
2. strategy training studies in the past tended to overlook the learners' learning styles and preferences
3. not much discussion has been done on the methodology of teaching reading strategies.

The research which addresses these issues above should clarify when and how to provide a particular group of learners with the appropriate kinds of strategy training for a suitable period of time.

Meanwhile, the result of this present research seem to encourage our intervention with L2 readers using both approaches discussed above, with different types of learners benefiting from different orientation.

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