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DOES LEARNER STRATEGY TRAINING MAKE A DIFFERENCE?

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This study investigated the effects of strategy training on four key aspects of the learning process, namely student motivation, students' knowledge of strategies, the perceived utility of strategies, and the actual deployment of strategies by students. The study took the form of an experiment in which sixty first-year undergraduate students at the University of Hong Kong were randomly assigned to control and experimental groups. Both groups took part in that same language program. In addition, the experimental groups were systematically trained in fifteen learning strategies. Results of the study indicated significant differences in three of the four areas investigated. The experimental groups significantly outperformed the control groups on motivation, knowledge, and perceived utility. There was no significant difference in the area of deployment. Analysis of results on individual strategies revealed that strategy training was neither uniform nor consistent across all strategies. In the concluding section of the paper, the theoretical and pedagogical implications of the study are set out and discussed.

Despite the current interest in learning styles and strategies, investigations into the effect of learner strategy training are relatively uncommon, and results are rather mixed. Around fifteen years ago, Cohen and Aphek (1980) looked at the effect of strategy training on vocabulary acquisition. They found that certain techniques such as the paired associates technique did result in successful acquisition. At about the same time, Carroll (1981) looked at inductive learning. In this study, it was found that the ability to study samples of language and induct the rules governing that particular aspect of language was an aspect of language aptitude. O' Malley et al. (1985) studied the effect of different types of strategy training (metacognitive, cognitive, and socio-affective) on different language skills, and found that the training had a significant effect on speaking, but not on listening.

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In a rather different type of study, Jones et al. (1987) set out to determine whether there were differences between effective and ineffective learners in terms of their awareness of different types of strategy. They found that effective learners are aware of the processes underlying their own learning and seek to use appropriate learning strategies to control their own learning. Nunan (1991) also found that one of the characteristics of the 'good' language learner was an ability to reflect on and articulate the processes underlying their own learning. Similarly, in an overview of research into strategy training, O'Malley and Chamot (1990) found indications that more effective learners differed from less effective ones in their use of strategies. In particular, they found that students who were designated by their teachers as more effective learners use strategies more frequently, and use a greater variety of strategies, than students who were designated as less effective.

In the field of foreign languages, Barnett (1988) investigated the effect of strategy training on the reading of French as a foreign language. While the experimental group outperformed the control group, the differences were not statistically significant. However, this study is a little difficult to interpret, as the strategies themselves were not made explicit to the students.

A recent study by Green and Oxford (1995) looked at patterns of variation in strategy use by students at different levels of proficiency. They found a significant relationship between strategy use and language learning success. In particular, they found that active use of the target language, with a strong emphasis on practice in naturalistic situations, was the most important factor in the development of proficiency in a second language. They concluded from their study that active use strategies help students attain higher proficiency.

In an investigation into the effect of providing opportunities for reflection, self-reporting, and self-monitoring among university students in Hong Kong, Nunan (1995a) found that opportunities to reflect on their learning led students to a greater sensitivity to the learning process over time. Students were also able to make greater connections between their English classes and content courses conducted in English. Finally, opportunities to keep guided journals helped learners to develop skills for articulating what they wanted to learn and how they wanted to learn it.

In a very recent investigation, Cohen et al. (1995) and Cohen (1996) studied the impact of strategy training on a group of fifty-five foreign language students at the University of Minnesota. The researchers sought to identify the effect of explicit instruction in strategies on speaking proficiency, and the relationship between reported frequency of use of strategies and ratings of task performance. They were also interested in how students characterized their rationale for strategy use while performing speaking tasks. In the study, three experimental groups received the same instruction as three comparison groups over a ten-week period. In addition, the experimental groups were given explicit instruction in the application of speaking strategies to the skill of speaking. On the question of whether strategy training made a difference on task performance, they found that the experimental group outperformed the comparison group on two of the three post-test tasks used in the experi-

ment. While the researchers argue for the beneficial effect of strategy training, they point out that the results were complex and in some cases not easy to interpret. (For example, there seemed to be a language proficiency factor, with learners at certain levels of proficiency seeming to benefit more from proficiency training than those at other levels.)

From this brief review of the literature, it can be seen that there is some evidence of a relationship between learner effectiveness and awareness of/deployment of learning strategies. There is also some evidence that strategy training can make a difference, although the results are less certain here. However, there is enough evidence to suggest that further exploration of the effect of strategy training on learner awareness, attitudes and motivation is warranted. Such exploration is the purpose of the classroom-based investigation which is reported in the next section.

Method

In this section, I provide a brief description of the subjects and the pedagogical context in which the study took place. I shall also set out the research questions, and procedures that were employed for data collection and analysis.

Subjects

The investigation reported here was carried out with a group of first year undergraduate Arts students at the University of Hong Kong. In all, sixty students were involved in the project. All students were enrolled in a compulsory, credit-bearing course entitled English for Arts Students (EAS).

Pedagogical context

This study was motivated by two factors. The first of these was the fact that students come into the English courses at the University of Hong Kong with low motivation to learn English. Most of them have learned English throughout their secondary schooling, and are demotivated by their perceptions of a lack of progress, by what many report as poor instructional methods, and by an increasing pressure with the approach of 1997 to devote their language learning efforts to Putonghua, which will become the official language once the Territory is handed back to China. The second factor has to do with the limited amount of time which students are given to develop skills in Academic English (48 hours with an additional 12 hours of self-directed learning in the form of a contract). It was felt that the incorporation of a learning strategy dimension into the curriculum could help to maintain or enhance motivation, and that it might also lead to greater appreciation on the part of learners of the processes underlying their own learning. (Previous research has shown that the 'effective' learner is one who is aware of learning strategies (Jones et al. 1987).) It was also hoped that strategy training would help learners develop greater independence and control over their learning, and this, in turn, would encourage them to continue learning English on their own once their classes had stopped.

Questions

The study was designed to investigate the following questions:

1. What is the effect of learner strategy training on student motivation?
2. What is the effect of learner strategy training on students' knowledge of learning strategies?
3. What is the effect of learner strategy training on the levels of strategy utilization by students (that is, do those who receive strategy training use them more)?
4. What is the effect of learner strategy training on students' attitude towards the use of strategies in language learning (in particular, do those who receive training think more highly of strategies as tools for learning)?

Procedure

The subjects were randomly assigned to four different classes. Two classes were designated as experimental classes, and two were designated as control classes. All subjects were administered a pre-course questionnaire (see Appendix) to measure their motivation, their knowledge of fifteen key strategies, their use of these strategies, and their perception of the value of the strategies. All four classes then took part in a regular first semester (English for Arts Students) course, the only difference being that the experimental groups were systematically introduced to some of the key learning and study skills strategies underpinning the course. The strategy training was incorporated into the regular language teaching program, rather than being taught as a separate component.

At several times during the course, sub-groups of students took part in focused interviews. The aim of the interviews was to obtain insights into the perceptions and feelings of students towards the study of English in general, and the EAS course in particular. The researchers also wanted to obtain the students' perspectives on the experience of moving from school to university.

At the end of the semester, the motivation and strategy questionnaires were readministered to all students. The results were coded and analysed statistically.

Results

The aim of this study was to investigate the effect of learner strategy training on learner motivation and also on the knowledge, use and perceived utility of a set of key strategies. The main data collection method was a questionnaire which was administered at the beginning of the semester, and again at the end. The questionnaire data were supplemented by a series of focused interviews carried out at several points over the course of the study, as well as classroom observation data and detailed teaching notes. The latter were kept to see whether pedagogical intentions were actually carried out.

A score was assigned for each subject on each strategy by identifying whether the questionnaire responses provided at the conclusion of the course improved over those given by subjects in the pre-course questionnaire. These data were then used for the construction of 2 x 2 tables for both groups. These are set out in a series of tables below.

Table 1
TOTAL NUMBER OF SUBJECTS WHOSE SCORE ON THE MOTIVATION QUESTIONNAIRE IMPROVED / DID NOT IMPROVE ON THE POST-TREATMENT QUESTIONNAIRE
(n = 60)

	Control (n = 30)	*Experimental* (n = 30)	*Total*
Improved	8 (13%)	17 (28%)	25 (42%)
No improvement	22 (37%)	13 (22%)	35 (58%)
	30 (50%)	30 (50%)	60 (100%)

$x^2 = 4.3886$; d.f. = 1; $p < 0.05$

Table 2
TOTAL NUMBER OF SUBJECTS WHOSE KNOWLEDGE IMPROVED / DID NOT IMPROVE ON THE POST-TREATMENT QUESTIONNAIRE
(n = 60)

	Control (n = 30)	*Experimental* (n = 30)	*Total*
Improved	8 (13%)	27 (45%)	35 (58%)
No improvement	22 (37%)	3 (5%)	25 (42%)
	30 (50%)	30 (50%)	60 (100%)

$x^2 = 22.217$; d.f. = 1; $p < 0.0001$

Table 3
TOTAL NUMBER OF SUBJECTS WHOSE USE OF STRATEGIES INCREASED / DID NOT INCREASE ON THE POST-TREATMENT QUESTIONNAIRE
(n = 60)

	Control (n = 30)	*Experimental* (n = 30)	*Total*
Increased	22 (37%)	24 (40%)	46 (77%)
No increase	8 (13%)	6 (10%)	14 (23%)
	30 (50%)	30 (50%)	60 (100%)

$x^2 = 0.0932$; d.f. = 1; n.s.

Table 4
TOTAL NUMBER OF SUBJECTS WHOSE PERCEIVED UTILITY IMPROVED / DID NOT IMPROVE ON THE POST-TREATMENT QUESTIONNAIRE
(n = 60)

	Control (n = 30)	*Experimental* (n = 30)	*Total*
Improved	8 (13%)	17 (28%)	25 (42%)
No improvement	22 (37%)	13 (22%)	35 (58%)
	30 (50%)	30 (50%)	60 (100%)

$x^2 = 4.3886$; d.f. = 1; $p < 0.05$

From the data presented in Table 1, it can be seen that, while motivation failed to improve over the course of the semester for almost half of the experimental group, for the control group it was much higher. Static or declining motivation during the instructional process is consistent with research findings from other studies in both language and content classrooms (see, for example, Brophy 1987, Jones and Jones 1990). However, it is clear from the data that the experimental groups did much better on the motivational scale than the control groups, with just over half the sample reporting an increase in motivation. The difference between the control and the experimental groups was significant.

Not surprisingly, the difference between the control and experimental groups is most marked in the case of knowledge of strategies. At the end of the course, 90% of the experimental group reported an increase in the knowledge of the fifteen core strategies that were introduced to them. In contrast, only 27% of the control group reported an increase in knowledge of strategies.

There is also a marked difference in the perceived utility or value of learning strategies. 53% of the experimental group placed greater value on strategies at the end of the study. In contrast, only 30% of the control group subjects reported an increase in their perception of the value of strategies.

In the case of reported frequency of deployment, the differences are minimal. While both control and experimental groups reported significant increases in their deployment of the strategies in question, the difference between the control and experimental groups was not significant.

These data were tested for significance using McNemar's test for related samples (Hatch and Lazaraton 1991:417). Differences between the experimental and control groups were significant at $p < 0.05$ in the case of motivation, knowledge of strategies, and perceived value of strategies. Differences in the frequency of use of strategies were not significant.

Table 5 shows the number of subjects increasing their responses over the course of the experiment for each of the probes on the strategies questionnaire. It also indicates the difference (in the 'diff.' columns) between the experimen-

tal and control groups. Thus, reading across the top row of figures, it can be seen that 16 experimental and 8 control subjects felt their knowledge of this strategy had increased during the treatment period, 15 experimental and 12 control subjects report an increase in the use of this strategy, and 9 experimental as opposed to 5 control subjects indicated that they placed greater value on this particular strategy than they had at the beginning of the experiment. These data are discussed and interpreted in the next section of the paper.

Table 5
NUMBER OF SUBJECTS INCREASING THEIR RESPONSES BETWEEN THE PRE- AND POST-QUESTIONNAIRE FOR INDIVIDUAL STRATEGIES

	KNOWLEDGE			USE			VALUE		
	E	C	Diff.	E	C	Diff.	E	C	Diff.
1. Identifying objectives	16	8	8	15	12	3	9	5	4
2. Selective listening	22	8	14	24	14	10	18	10	8
3. Predicting	10	1	9	0	3	-3	0	1	-1
4. Confirming	6	0	6	8	0	8	10	0	10
5. Reflecting	2	0	2	0	0	0	0	2	0
6. Self-evaluating	2	0	2	1	2	-1	6	3	3
7. Cooperating	6	3	3	13	7	6	12	0	12
8. Summarizing	7	6	1	0	7	-7	2	5	-3
9. Memorizing	3	1	2	1	4	-3	3	0	3
10. Inductive learning	13	7	6	10	9	1	11	9	2
11. Deductive learning	11	4	7	10	12	-2	5	7	-2
12. Independent learning	9	2	7	7	5	2	10	8	2
13. Applying	9	0	9	8	0	8	1	0	1
14. Classifying	8	8	0	12	8	4	1	5	-4
15. Personalizing	4	6	-2	8	5	3	2	4	-2

Discussion

From the data presented in the preceding section, it would seem that adding a strategy training component to an academic English course had a significant effect in three of the four areas investigated. It appears to have significantly enhanced the motivation of the students involved in the program. It also dramatically improved the experimental subjects' knowledge of the key strategies under investigation as well as their appreciation of the value of the strategies.

The one area where no significant difference was detected was that of deployment, with both experimental and control groups reporting a dramatic increase in their deployment of the key strategies over the course of the semester. This probably reflects the changed learning environment in which the learners found themselves. At the beginning of the semester, they were fresh from high school, where opportunities to deploy a wide range of learn-

ing strategies in the Hong Kong context is limited. Things change rapidly, however, once the students begin university life. They are expected to be much more independent and self-directed in their work, and to develop a range of strategies to cope with this new way of living and learning.

I shall now briefly describe and comment on the results that were obtained for each of the individual items on the strategies questionnaire. These data are presented in Table 5.

Identifying objectives

This item was glossed for students as "thinking about what you want to be able to do at the end of the course." It was included in the study because awareness of program goals and objectives has been identified in the literature as an important aspect of the learning process (see, for example, Green and Oxford 1995). Research carried out in other contexts has also demonstrated a significant correlation between the practice of making learning goals clear and student motivation (Jones and Jones 1990, Reilly 1994). When results on the post-instructional questionnaire were examined, it was found that 53% of the experimental group and 27% of the control group indicated that they were not more knowledgeable about this strategy. 50% experimental and 40% control subjects indicated that they made greater use of the strategy. 30% experimental subjects and 17% control subjects indicated that the strategy helped them to develop their language skills.

Selective listening

In the questionnaire that students completed, selective listening was glossed as "listening for key information without trying to understand everything." In the pre-treatment data collection exercise, this strategy was given a low rating by both control and experimental groups. By the end of the experiment, however, it was highly valued and deployed by the experimental subjects. In addition to opportunities to learn about and practice this strategy, this change probably reflects the changed listening demands made on students once they enter university. Hong Kong schools are divided into Chinese Medium of Instruction (CMI) and English Medium of Instruction (EMI) Schools. In EMI schools (from which the great majority of University of Hong Kong students are drawn), instruction is supposed to be carried out in English. There is evidence, however, that the use of Cantonese in these schools is widespread (Littlewood and Liu, forthcoming). In pre-treatment interviews, students, who, it will be recalled, had just entered university, did not perceive that listening would be problematic for them. However, once they began their studies, many of the students found themselves receiving instruction in English from lecturers from many different parts of the world. These instructors are both non-native and native speakers of English. They have a wide variety of accents, and many of the newly-appointed native speaking teachers are unused to dealing with students whose first language is not English. Informal observations and analysis of lectures revealed many of these teachers using low frequency vocabulary,

idiomatic expressions, and attempting to introduce humor into their lectures. In such situations, when students are struggling to come to terms with unfamiliar concepts and knowledge, students evidently come to value the opportunity to think about and practice strategies for identifying and recording the important information in a lecture. The fact that a dramatic difference was detected among experimental subjects, but not control subjects, probably indicated that for this strategy at least, students need opportunities for the strategy to be made salient through formal training, as well as opportunities to deploy the strategy in authentic communicative situations. (I am indebted to Andrew Cohen, personal communication, for pointing out to me the possible confounding effects on outcomes of training in the strategy and opportunities to use the strategy. I believe that this may be one of the side effects of conducting experimental studies in genuine classroom contexts.)

Predicting

Predicting, or thinking ahead and anticipating what is to come, was another strategy that students were introduced to and given practice in applying to academic learning. On this strategy, 33% of the experimental but only 4% of the control subjects reported an increase in knowledge about this strategy. In terms of utility and use, there was little difference between the control and experimental groups.

Confirming

The benefits of confirming, or checking one's answers with others, were discussed and systematically practiced throughout the semester. One third of the experimental group reported an increase in the value that they placed on this strategy. There was also an increase for the experimental group in terms of knowledge and deployment of this strategy. None of the control group subjects reported an increase in any of the areas investigated.

Reflecting

Reflecting, or thinking about ways one learns best, is, in a sense, a key strategy underlying all of the other strategies introduced in the course. It was therefore somewhat surprising to find that there was virtually no difference between the control and experimental groups on this particular probe. However, it is consistent with findings reported by Ho (1995), who found that Hong Kong students have difficulty with, and react negatively, in the short term, to reflecting on their learning. It may well be that this strategy is one that would only show improvement over the long term.

Self-evaluating

Self-evaluating, glossed as "thinking about how well you did on a task," was also a strategy that did not appear to have been affected by the intervention. This may have been because it was an 'incidental strategy' (in much the same

way as reflecting). In other words, it did not form the thematic focus of a lesson, as did most of the other strategies. Rather, students were given a series of informal opportunities to self-evaluate during the course of the study. In a follow-up study, it would be worth giving a more explicit focus to this particular strategy as it is central to a learning-centered approach to education. Another factor may be that self-evaluation is alien to the Hong Kong educational system.

Cooperating

Cooperating was glossed as "working with other students in small groups." This strategy was used extensively in the course, and the effect of its use is reflected in the data. Knowledge, use and value of this strategy all increased, the most dramatic increase being in the areas of deployment, and the value placed on this strategy by the experimental groups. Hong Kong students have a cultural predilection for cooperative rather than competitive learning (Tsui 1996), and this may partly account for the relatively high initial scores for both control and experimental groups on the knowledge dimension of the study. However, opportunities to reflect on this strategy also seem to have had an effect on experimental subjects' use of this strategy in their learning (43% reported an increase in their use of the strategy as opposed to 23% of the control group), and also on the importance they placed on it as a strategy in university level learning (40% reported placing greater value on the strategy at the conclusion of the experiment, while none of the control subjects gave it greater value). Inspection of lesson plans and teaching notes confirmed that the control groups had relatively fewer opportunities to take part in small group, cooperative activities.

Summarizing

Summarizing, or creating a short version of a text recording key information, is an important academic strategy which all students use extensively in university study. In follow-up interviews, control and experimental subjects revealed that they made extensive use of the strategy in their academic subjects. This extensive use may explain the results obtained on this particular item, with control subjects outperforming experimental subjects on both utilization and use. (None of the experimental subjects reported an increase in use, compared with 23% of control subjects. 7% of the experimental subjects gave greater value to the strategy compared with 17% of control subjects.) Observation revealed that the control groups, while not being explicitly taught this strategy, had relatively greater opportunity to use the strategy in class.

Memorizing

Memorizing is also a strategy that is widely used in Hong Kong secondary schools. All subjects were therefore familiar with the strategy. While experimental subjects outperformed control subjects, the results were not significant,

and the experiment seemed to have little effect on subjects' knowledge, utilization or appreciation of this strategy. In rank order terms, however, there was a large difference between pre- and post-intervention. Before the experiment, this was the most popular strategy overall. At the end of the experiment, a number of other strategies, including inductive learning and selective listening, had overtaken it.

Inductive and deductive learning

Two contrasting cognitive strategies were inductive and deductive learning. Inductive learning was glossed as "working out rules from examples," while deductive learning was characterised as "learning rules and then applying them in using language." At the beginning of the experiment, these strategies (along with selective listening) were among the least popular items in the survey. At the end of the study, their rankings had changed dramatically. This was particularly true for inductive learning in the case of the experimental group. However, some caution needs to be exercised in interpreting these results. Inspection of lesson plans and protocols revealed that both strategies were used extensively in lessons and tutorials in both control and experimental classrooms (although it was only in the experimental groups that the strategies were made explicit). Deployment of these key cognitive strategies is hardly surprising in a university environment, and it is quite likely that these strategies were also significant features of students' content classes. (Students were majoring in a wide range of subjects from psychology and geography to comparative literature and Japanese.) This observation underlines the difficulty of carrying out, in naturalistic contexts, research designed to isolate and examine relationships between dependent and independent variables. By conducting the research in context, the external validity of the study was strengthened at the expense of internal validity.

Developing independent learning skills

Developing independent learning skills, that is, encouraging learners to learn and use language without the aid of the teacher, was another of those general strategies where considerable growth was evident from the beginning to the end of the study. This was the case for both experimental and control groups although the control groups did considerably better when it came to knowledge of this strategy. Once again, the qualitative data were of considerable help in attempting to interpret these data. It showed that the control subjects as well as the experimental subjects had an independent study component to their course, although the rationale for this component was not made explicit in the control groups as it was for the experimental groups.

Applying

The idea of activating English outside of class was a strategy that appeared to benefit significantly from being made explicit, particularly in terms of knowl-

edge and use. Twenty-five per cent of the experimental group reported an increase in their use of English outside of class, while none of the control group reported an increase. It may seem strange that this strategy needed an explicit focus within the context of Hong Kong, where English is generally considered to be a second rather than a foreign language, and where it is assumed that the use of English in the community is widespread. However, recent research indicates that this view may be inaccurate, and that the use of English in non-academic contexts is far more circumscribed than had previously been thought. In a study involving almost 6,000 undergraduates, Bacon-Shone, Bolton and Nunan (forthcoming) found that only a tiny percentage of students ever used English outside the classroom.

Classifying and personalizing

Evidence that strategy training makes a difference can also be found in the results obtained on the probes for classifying (glossed for the students as "putting similar things together in groups") and personalizing ("sharing your own opinions and ideas "). In the case of classifying, there were no differences between the control and experimental groups in terms of knowledge, there was a slight difference in favor of the experimental groups in terms of use, and a similar difference in favor of the control groups in terms of value. In the case of personalizing, there was a slight difference in favor of the control groups in terms of knowledge and value, and a similar slight difference in favor of the experimental groups in terms of use.

When the lesson plans and transcripts were reviewed, it transpired that, because of programming exigencies, the sessions in which the two strategies of classifying and personalizing were to be introduced to the experimental groups had been cancelled and it had not been possible for them to be rescheduled. The experimental groups therefore never had an opportunity to focus explicitly on them, nor to practice applying them to their own learning. The data here, therefore, provide a kind of negative evidence on the effect of strategy knowledge, use and utility.

Conclusions

This study provides evidence that strategy training does make a difference in several key areas. First, it had a significant effect on student motivation. This result is consistent with and confirms other recent research into strategy training and motivation. It also had a significant effect on students' knowledge of strategies, and their appreciation of the use of strategies in their language learning. The results of strategy training on use of the strategies is less clear. This may reflect the fact that students had relatively few opportunities to take control of their learning in the context in which the study took place. (It will be recalled that the strategy training elements were grafted onto existing programs.)

It is also clear from the analysis of individual strategies presented in the preceding section that the effect of strategy training is not uniform across all strategies. In some cases the effect appeared to be quite dramatic. In other

cases the effects were less apparent. Individual analyses, as well as an interpretive analysis of the qualitative data (interview data), showed that prior knowledge and the subjects' evaluation of the utility of particular strategies for university level study had an important effect on their reaction to and willingness to deploy particular strategies. Analysis of the classroom observation data and lesson notes and materials also revealed the fact that not all strategies received equal amounts of attention in the classroom, and that this differential attention had an effect on students' responses. In short, the greater the attention, the greater the effect. However, as amount of focus on individual strategies was not one of the variables focused on in the study, it is not possible to comment on it in greater detail here. On the other hand, it is important to note the value of collecting qualitative data, in the form of student interviews, as well as classroom observation data in studies of this kind. Without such data, some of the quantitative results would have been uninterpretable. In fact, some would simply not have made sense. (For a discussion on the importance of collecting both quantitative and qualitative data, see Spada 1990.)

This study was carried out with students who were in the process of making the transition from high school to university, and it provides insights into the dramatic differences in attitudes to learning forced on students as they moved from school to university. The effect that the new learning environment had on the students is revealed in some of the data that were collected. It is clear that the context and environment in which the study took place had an effect on all of the students who took part in the study. At the beginning of their life at university the most popular learning strategies reported by the students were 'memorizing', 'summarizing', and 'cooperating' (strategies that are extremely common in Hong Kong high schools). Least favored were 'identifying objectives', 'inductive learning', and 'selective listening'. By the end of the semester, the results were quite different, inductive learning and selective listening being among the most popular strategies reported by students.

Data yielded by the questionnaire are also supported by the focused interviews that were conducted with some of the subjects during the course of the semester. One student reported her school language learning experience in the following way:

> "In secondary school, the English lesson is quite boring because we students just sit in the classroom and listen to what teachers tell us, and I'm afraid that I seldom practice English outside classroom because I can't find anyone who can practice with me."

Another student stated that:

> "In my experience, my secondary teacher only sent out the papers to us, to only do the exercise without teaching anything. They are just following the textbook and just read out again and again without teaching grammar or the style of composition or the normal conversation in English so I think my secondary school English lesson is very boring."

In terms of opportunities to use English at university (and the University of

Hong Kong is supposedly an English-medium of instruction institution), students' experiences varied a great deal. One student reported that:

> "...there are more chances for us to practice English in here, there are more foreigners in this University and most of the tutorials are conducted in English, and I've also found some classmates who are interested in discussing English with me."

However, one of her classmates had a rather different experience:

> "I think apart from the tutorial and the EAS (English for Arts Students) course, I only, only I can listen to English more. But on the other hand, I find I have no chance to speak more English in the University apart from the tutorials."

There are interesting parallels between this study and research into the effect of instruction on second language acquisition. Current SLA research appears to indicate that both instruction and opportunities to deploy the target language in interaction are important for acquisition (see, for example, Mollering and Nunan 1995, and, for a review, Nunan 1995b). In this study, formal instruction and opportunities to use the strategies in class were both necessary for the full effect of the strategy training to become apparent. The implications here are clear. In the first place, teachers themselves need to be aware of the strategies underlying their classroom practices. Secondly, in addition to making these strategies explicit to the students, they need to create opportunities for students to apply them in class. It should also be noted that qualitative classroom data, as well as the quantitative questionnaire data, were needed for the relationships between teacher input, learner practice and learning outcomes to become apparent.

The study also supports the thirteen student academic needs, which, according to Jones and Jones (1990), lead to enhanced student learning and higher levels of motivation. These are as follows (the needs that were directly addressed by the intervention are indicated with an asterisk):

1. Understand and value learning goals*
2. Understand the learning process*
3. Be actively involved in the learning process*
4. Relate subject matter to their own lives*
5. Control the learning environment by setting goals or following their own interests*
6. Experience success
7. Receive realistic and immediate feedback that enhances self-efficacy*
8. Receive rewards for performance gains
9. See learning modeled by adults as an exciting and rewarding activity
10. Experience an appropriate amount of structure*
11. Have time to integrate learning
12. Have positive contact with peers*
13. Receive instruction matched to their skill level and learning style

In conclusion, then, this study shows that strategy training has positive effects in certain important areas, most notably on motivation, knowledge of strategies, and an appreciation of their value. However, the effects were not uniform across all strategies, and, in some instances, were inconsistent and piecemeal. In addition, the study found no effect for certain key "macro" strategies such as reflection and self-evaluation. Nor was there any significant difference between control and experimental groups in the area of deployment. Inspection of teaching plans and programs revealed that students appeared to be constrained by the teachers which precluded greater use of strategies. In a follow-up investigation planned for next fall, a similar study will be carried out, with the experimental subjects working in self-study mode. This should reveal whether students who are given opportunities to learn strategies independently use them more, and come to a greater appreciation of reflection and self-evaluation.

Summary

In this study, I have presented the results of an investigation into the effects of learner strategy training on first year undergraduate students in a university in Hong Kong. The study was carried out with sixty first-year undergraduate students in their first semester at the University of Hong Kong. Students were given a pre-course questionnaire which measured motivation and learning strategy knowledge, levels of utilization and appreciation. The experimental subjects were then given explicit training in a number of key strategies. At several points during the course, subjects took part in focused interviews designed to collect qualitative data on learning processes. At the conclusion of the treatment, the questionnaires were readministered and differences between pre-treatment and post-treatment scores were computed. Results of the study indicate that strategy training can make a difference, but that the effects are often piecemeal and inconsistent. The study also underlined the importance of collecting qualitative data (in these instances, interview data and classroom observations, to facilitate interpretation of the data).

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APPENDIX

STUDENT QUESTIONNAIRES

STUDENT ID:

WHAT DO YOU FEEL ABOUT LEARNING ENGLISH?

Dear Student,
We are interested in finding out your feelings about learning English so that we can design courses that are appropriate for your needs. We would therefore be grateful if you would take a little while to fill in the following questionnaire. This information will be kept strictly confidential, and will not be used to assess you in any way.

DAVID NUNAN AND LILLIAN WONG
The English Centre

SECTION I

Do you know these strategies? Do you use these strategies in your language learning? Do they help you in developing your language skills? (Put an 'X' in the columns to show your responses).

	I know this strategy			I use this strategy				This helps me develop my language skills		
	yes	not sure	no	always	sometimes	rarely	never	a lot	a little	no
1. Identifying objectives (Thinking about what you want to be able to do at the end of the course)	—	—	—	—	—	—	—	—	—	—
2. Selective listening (Listening for key information without trying to understand everything)	—	—	—	—	—	—	—	—	—	—
3. Predicting (Thinking ahead and anticipating what is to come)	—	—	—	—	—	—	—	—	—	—
4. Confirming (Checking on your answers with others)	—	—	—	—	—	—	—	—	—	—
5. Reflecting (Thinking about ways you learn best)	—	—	—	—	—	—	—	—	—	—
6. Self-evaluating (Thinking about how well you did on a task)	—	—	—	—	—	—	—	—	—	—

	I know this strategy			I use this strategy				This helps me develop my language skills		
	yes	not sure	no	always	sometimes	rarely	never	a lot	a little	no
7. Cooperating (Working with other students in small groups)	—	—	—	—	—	—	—	—	—	—
8. Summarizing (Creating a short version of a text recording key information)	—	—	—	—	—	—	—	—	—	—
9. Memorizing (Learning phrases and expressions to use in conversation)	—	—	—	—	—	—	—	—	—	—
10. Inductive learning (Working out rules from examples)	—	—	—	—	—	—	—	—	—	—
11. Deductive reasoning (Learning rules and then applying them in using language)	—	—	—	—	—	—	—	—	—	—
12. Developing independent learning skills (Learning and using language without the aid of a teacher)	—	—	—	—	—	—	—	—	—	—
13. Applying (Practicing English outside of class)	—	—	—	—	—	—	—	—	—	—
14. Classifying (Putting similar things together in groups)	—	—	—	—	—	—	—	—	—	—
15. Personalizing (Sharing your own opinions and ideas)	—	—	—	—	—	—	—	—	—	—

SECTION II

1. I actively think about what I have learned in my language class.
   a) very frequently.
   b) hardly ever.
   c) once in a while.

2. If it were impossible for me to attend English classes at my school, I would
   a) try and pick the language up out of class (e.g., read English books and newspapers; find people to have conversations with).
   b) not bother learning English at all.
   c) try to get English lessons somewhere else.

3. When I have a problem understanding something we are learning in class, I
   a) immediately ask the teacher for help.
   b) only seek help just before the examination.
   c) just forget about it.

4. When it comes to studying / doing homework out of class, I
   a) put some effort into it, but not as much as I could.
   b) work very carefully, making sure I understand everything.
   c) just forget about it.

5. When I think about how I study English, I can honestly say that I
   a) do just enough work to get along.
   b) will pass my exams on the basis of luck or intelligence, not because of the amount of work that I do.
   c) really try to learn English.

6. If my teacher wanted someone to do an extra assignment, I would
   a) definitely not volunteer.
   b) definitely volunteer.
   c) only do it if the teacher asked me directly.

7. After I get my assignments back, I
   a) always rewrite them, correcting my mistakes.
   b) put them away and forget them.
   c) look them over, but do not bother correcting the mistakes.

8. When I am in class, I
   a) volunteer answers as much as possible.
   b) answer only the easier questions.
   c) never say anything.

9. If there are movies in English on TV or at the cinema, I
   a) never watch them.
   b) watch them occasionally.
   c) try to watch them as often as possible.

10. When I hear a song in English, I
    a) listen to the music paying attention only to the easy words.
    b) listen carefully and try to understand all the words.
    c) turn the music off.

(Adapted from Gardner 1985: 180-181).

SECTION III

1. At the beginning of a lesson or unit of work, I
   a) immediately want to get on with language practice.
   b) like the teacher to explain what I am going to learn.

2. During the lessons, I like
   a) the teacher to tell me what to do at all times.
   b) to make choices between different tasks from time to time.

3. Outside of the language classroom, I
   a) am not interested in using the language.
   b) try to find opportunities to practice English.

4. In class, I
   a) am not really bothered about how tasks help me learn, as long as they work.
   b) like the teacher to explain to me how the tasks help me to learn.

5. In class, I like to spend some time
   a) discovering how the rules of English work.
   b) being told how the rules of English work.

6. During a course, I
   a) like to assess my own progress occasionally.
   b) am not interested in assessing my own progress.

7. During a lesson, I prefer to
   a) practice using the language.
   b) listen to the teacher talking about the language.

8. During a lesson, I like opportunities to
   a) listen to language that is specially produced for language classrooms.
   b) listen to native speakers using the language.

9. During a lesson, I
   a) prefer to work with the whole class.
   b) like opportunities to do pair and small group work.

10. I would
    a) like to set my own learning goals eventually.
    b) not be interested in setting my own goals.