Language Learning Strategies: Classification and Pedagogical Implication

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Abstract: Many studies have been conducted to explore language learning strategies (Rubin, 1975, Naiman et al., 1978; Fillmore, 1979; O’Malley et al., 1985 and 1990; Politzer and Groarty, 1985; Prokop, 1989; Oxford, 1990; and Wenden, 1991). In the current study a total of 79 university students participating in a 3-month English course participated. This study attempted to explore what language learning strategies successful learners used and to what extent the strategies contributed to success in learning English in Indonesia. Factor analyses, accounting for 62.1%, 56.0%, 41.1% and 43.5% of the variance of speaking, listening, reading and writing measures in the language learning strategy questionnaire, suggested that the questionnaire constituted three constructs. The three constructs were named metacognitive strategies, deep level cognitive and surface level cognitive strategies. Regression analyses, performed using scales based on these factors revealed significant main effects for the use of the language learning strategies in learning English, constituting 43% of the variance in the posttest English achievement scores. An analysis of variance of the gain scores of the highest, middle, and the lowest groups of performers suggested a greater use of metacognitive strategies among successful learners and a greater use of surface level cognitive strategies among unsuccessful learners. Implications for the classroom and future research are also discussed.

Different studies have uncovered different results due to different classification schemes of learning strategies and different ways of assessing the use of their strategies. In a study conducted by Rubin (1975), strategy classification consisting of direct and indirect language learning strategies was introduced. Her study, in which she observed language learners while...
they were learning, and interviewed them, suggested that successful language learners used different strategies from unsuccessful ones. Another study that used observation to collect data was conducted by Fillmore (1979). Even though she did not investigate how language learning strategies affected language performance, she succeeded in identifying the learning strategies that the five participants of her study used and divided them into two main groups of learning strategies, namely, social and cognitive strategies. Unlike Rubin (1975) and Fillmore (1979), who used observation in collecting data, Naiman et al. (1978) interviewed 34 students in order to assess learning strategies that good language learners used. Their study revealed that good language learners used at least five groups of learning strategies. The five groups of strategies were the active task approach, the realisation of language as a system, the realisation of language as a means of communication and interaction, management of affective demands, and monitoring of L2 performance. Politzer and Groarty (1985) also conducted a study to investigate language learning strategies. In their study, a predefined questionnaire was used to collect data. Their study, which involved 37 participants, suggested that there were three groups of language learning strategies. The three groups of language learning strategies in their study were classified as: classroom study, individual study, and social interaction. Their study also revealed that social interaction was the only strategy that correlated with gain scores.

Besides the studies earlier mentioned, there are three other studies that proposed language learning strategy taxonomies. One study conducted by O’Malley et al. (1985), one by Oxford (1990) and the other by Wenden (1991). The three studies investigated similar strategies under the name metacognitive strategies even though the ways they collected data were different. The classification scheme by Wenden (1991) called metacognitive strategies self-management strategies. Wenden seems to identify language learning strategies based on previous studies (O’Malley et al., 1985 and 1990; and Rubin, 1975). In O’Malley et al.’s study (1990) interviews and observation were used, while in Oxford and Nyikos’ study predefined questionnaire (SILL Version 7.0) was used to collect data. O’Malley et al. suggested that there were three groups of learning strategies, namely, metacognitive, cognitive, and social strategies. However, they did not suggest which language learning strategies successful learners used. With reference to the taxonomies introduced in previous studies, this current study classified language learning strategies in three main categories: metacognitive, cognitive and social strategies. These categories were common in the previous studies in a similar field.

Using O’Malley et al.’s model (1985 and O’Malley and Chamot, 1990) and considering the works of Rubin (1975), Fillmore (1979), Naiman et al. (1978), Politzer and Groarty (1985), Prokop (1989) and Oxford (1990), the Language Learning Strategy Questionnaire (LLSQ) was originally designed to measure three groups of language learning strategies: metacognitive, cognitive and social strategies. The questionnaire contained 80 items of the four skill-based learning strategies with 20 items for each skill (see Appendix 1).

As a basic classification scheme in this study, following O’Malley et al.’s classification (1985), metacognitive, cognitive and social categories were used to identify language learning strategies implemented by students in Indonesia. The basic classification scheme proposed in this study was used to develop a language-learning strategy questionnaire (LLSQ). The three categories were considered initial for collecting data since they were also common terms of language learning taxonomy among the previous studies.

**METHOD**

**Subjects**

The participants in this study consisted of 29 male and 50 female students of a university in Indonesia who were taking an English course at the Language Center of Lampung University. The students were mostly in the last year of study (the fourth year). The students participating in this study were either beginning (25 students), intermediate (31 students) or advanced (23 students). The pretest was also used to calculate the gain scores by comparing the results of the posttest and the pretest on the ALIGU (American Language Institute of Georgetown University) test.

The students were taught English as a Second language based on the curriculum of the Language Center. The curriculum of each level is based on the ALIGU test. The materials which are considered too easy for advanced students are not taught at advanced levels but are taught at beginning levels.
Procedures

The participants were the students who were willing to take part in this study. The pretest of English proficiency was conducted a week before the class commenced. The observations of the speaking classes of each level were conducted from the first week of the program and lasted until the last week when the participants were given the Language Learning Strategies Questionnaire. The LLSQ was given in the last week of the program before the students were given a post-test. The interview was conducted after the mid-test. As selected alone, participants for interview were based on the students' gain scores (between the pre-test and the mid-test). Some successful and unsuccessful students were selected from each level. Interviews were recorded and then the recording was transcribed.

RESULTS

Language Learning Strategy classification

After a series of reliability and exploratory factor analyses, the items were reduced to 45 items. Finally, the LLSQ contained metacognitive, deep level cognitive and surface level cognitive strategies. The metacognitive category had 15 items, and the deep and surface level cognitive strategies had 18 items and 12 items respectively (see Appendix 2). The classification of the strategies in this study is probably not final and there may be overlap between them. It needs to be confirmed with other future studies on language learning strategies.

Considering the result of the factor and the reliability analyses and supported by peer rating analysis, in this study the strategies used by the students were classified into two main groups of language learning strategies: metacognitive and cognitive categories; the cognitive category comprise of deep level and surface level strategies. For the purpose of statistical calculation, in this study it was decided that the classification consists of three groups of language learning strategies, namely: metacognitive, deep level cognitive and surface level cognitive strategies. To group the strategies into one of the three categories, especially, deep level cognitive and surface level cognitive categories, I referred to the cognitive domain of Bloom's taxonomy (1956:18).

The finding of this study shows that cognitive strategies can be grouped under two subcategories. This category involves, to use Prokop's terms (1989:18), deep level processes and surface level processes. The first category, deep-level processes, refers to deep level cognitive strategies and the latter, surface-level processes, refers to surface level cognitive strategies in this study. Prokop (1989:18) categorizes repetition, note-taking, auditory representation and resourcing as the examples of strategies categorized in surface level strategies while strategies in deep level category are deduction, recombination, and key words. The classification consisting of two categories in this study, which explored strategies employed in learning English in Indonesia, supports similar findings in general education (Newble and Clarke, 1986; Dansereau, 1978:18). Since learning a foreign language is just one form of learning in general, in learning a foreign language students will employ the approach that they usually apply to other learning situation (Rubin and Thompson, 1982:8).

META COGNITIVE STRATEGIES

Metacognitive strategies, which are higher order executive skills in language learning (O'Malley and Chamot, 1990:44), involve self-awareness to plan or direct, monitor, evaluate or correct what has been done in learning English. These strategies are seen to be higher level processes because of their controlling role in cognition, and it was this higher level, or meta-, characteristic that led many to extend the label metacognitive to these processes (Lawson, 1984:91–2). These strategies are also referred to as self-management strategies, which are utilized by learners to oversee and manage their learning (Wenden, 1991:25). This category will be first discussed in this section.

The metacognitive category of language learning strategies has been introduced in two of the previous studies, O’Malley et al’s study (1985 and 1990) and Oxford’s work (1990). O’Malley and Chamot (1990) suggests that metacognitive strategies include selective attention for special aspects of a learning task, planning the organization of either written or spoken discourse, monitoring information to be remembered and production while it is occurring, and evaluating comprehension of receptive language activity and language production. The metacognitive strategies in Oxford’s work include strategies for evaluating one’s progress, planning for language tasks, consciously searching for practice opportunities, paying attention, and monitoring errors. By using metacognitive stra-
tategies, learners are aware of and control their efforts to use particular skills and strategies. The learners use their capacity to monitor and direct the success of the task at hand, such as recognizing that comprehension has failed, using fix-up strategies, and checking an obtained answer against an estimation (Jones et. al., 1987:15). Even though the terms are not exactly the same, the terms still refer to similar processes under the category metacognitive strategies. Metacognitive strategies in my study involve mental processes related to planning and directing what to do in acquiring another language, monitoring, evaluating and correcting what has been done.

Based on the finding of factor analyses, some strategies that were regarded as metacognitive strategies in this study are (a) I try to correct my mistakes that I produce orally (speaking), I listen to what I say to practice my listening (listening), I check and recheck my understanding after reading a passage (reading), I rewrite my composition by correcting the mistakes that I notice (writing).

In speaking, the students used correcting, directing, and evaluating while they used directing, monitoring and evaluating in listening. In reading they used evaluating and monitoring and in writing they used monitoring and evaluating.

SURFACE LEVEL COGNITIVE AND DEEP LEVEL COGNITIVE STRATEGIES

Different from metacognitive strategies, cognitive strategies relate directly to the task at hand and the manner in which linguistic information is processed (Prokop, 1989:17).

The cognitive category can be classified into sub-categories: deep level cognitive and surface level cognitive strategies. With deep level cognitive strategies, students learned something by relating it to previous knowledge, other topics and personal experience (Entwistle, 1987:58 and Newble and Clarke, 1986:65). Related to Bloom taxonomy (1956), in learning English the students in this study also comprehended texts, analyzed parts of sentences, and synthesized sentences. Based on the factor analyses and supported by peer rating analysis, eighteen strategies were regarded as deep level strategies in this study. The category consists of four speaking strategies, two listening strategies, six reading strategies and six writing strategies.

Some activities that are included as deep level cognitive strategies are I try to translate Indonesian sentences into English sentences and produce them orally (speaking), I learn English by watching English TV programs (listening), I try to understand sentences by analyzing their patterns (reading), I write what I am thinking about (writing).

Deep level cognitive strategies in this study vary from the second lowest process in cognitive domain of Bloom, comprehension, to synthesis (the second highest process). It seems to be possible that a strategy that was classified under deep level cognitive category in one occasion may be classified under another category in other occasions, depending on what and how language learners use their mental processes. By using deep level cognitive strategies, the students involved comprehending texts, synthesizing parts of sentences, analyzing sentences and applicating rules. In using surface level strategies, by contrast, they relied on the lowest ranks of mental processes such as rote learning (Bowden, 198:65-6 and Entwistle, 1987:58). As done with deep level cognitive strategies, surface level cognitive strategies were also related with cognitive domain developed by Bloom (1956). The lowest ranks of mental processes include recalling knowledge in Bloom's taxonomy. However, surface level cognitive in this study not only includes recalling knowledge (Bloom, 1956:62) but also other strategies that are regarded as rote learning.

The activities that were regarded as surface level strategies are (a) I practice speaking with my friends or my teachers (speaking), I try to understand every individual word to understand the passage (listening), I read the passage aloud (reading), I try to translate word for word (writing). It is interesting to note some strategies seemed to be grouped under deep level cognitive category but the factor analyses grouped them under a different category.

The classification of language learning strategies in this study may need a difficult explanation that some strategies under one skill area were regarded as different strategies in other skill areas. For example, trying to remember a word in speaking is a deep level cognitive strategy while trying to remember a word in writing is a surface level cognitive strategy. It seems that language learners may use different mental processes to do similar strategies, depending, at least, on skill areas.
At the risk of prediction made too soon, the evidence in this recent study on language learning taxonomy consists of two categories: cognitive (surface level and deep level) and metacognitive strategies, supporting the theories and findings in general education as mentioned earlier. The classification has been explored in an Indonesian environment and the validity and reliability of the Language Learning Strategy Questionnaire (LLSQ) has been measured.

The process of developing the language learning strategies in this study has considered the attempt of a systematic research that took into account what students themselves felt about their learning and developed strategies they so clearly needed as expected by Grenfell and Harris (1993:25). The attempt was taken by identifying language learning strategies that the previous researchers have proposed, cross-checking the proposed strategies and adding newly developed items. New items were developed based on the interviews with the students and the observations conducted in the classrooms before the questionnaire was administered. The taxonomy of the language learning strategies has been developed by undertaking factor analyses, meaning that the language learning strategies have been grouped based on the language learners’ responses that were collected through the LLSQ.

The classification of language learning strategies consisting of metacognitive and cognitive strategies in this study is not a dramatic departure from previous ones. The classification may develop further with other studies as the result of this study provides evidence that the cognitive category has two subsets of strategies: surface and deep level processes. It might happen that the category of metacognitive strategies has other subsets of strategies.

The Contribution of Language Learning Strategies in Learning English

The findings provide evidence that the increase from the pretest to the posttest scores counted for 7.2%, while metacognitive strategies contributed 3.1% to the increase. Deep-level and surface-level cognitive strategies contributed 1.6% and 9% respectively. In general, this suggests that language learning strategies affect students’ learning, constituting 3.1% of the achievement variance. Clearly, the amount of variance is small but it is really important since the affect constitutes 43% of the language achievement in total. A study suggesting that learning strategies affect language achievement was also conducted by Bialystok and Frohlich (1978). Their study, which explored variables of classroom achievement in second language learning, showed that many factors were correlated with language achievement, but only two of them: aptitude and strategy use were significant in predicting performance.

In this study, the empirical data suggests that the contribution of metacognitive strategies to the language achievement included all of the contribution of deep level and surface level cognitive strategies. The contribution of the metacognitive strategies subsumes the contribution of the strategies under the two other categories: deep level cognitive and surface level cognitive strategies. The empirical data also suggests that 1% of the gain score that belongs to surface level cognitive strategies is not included in the contribution of deep level cognitive strategies while the rest of the contribution, which constitutes 8% of the gain score variance, is included. It is interesting to note that all of the contribution provided by surface level cognitive and deep level cognitive strategies was included in the contribution of metacognitive strategies. Individually, the use of metacognitive strategies best predicted the language achievement the students gained during the three-month English course. The contribution of metacognitive strategies constituted 100% of the variance contributed by language learning strategies, followed in rank by the other two groups of strategies: deep-level cognitive (51%), and surface-level cognitive strategies (29%). From the data of the regression analyses, it may be concluded that the function of the metacognitive strategies is a powerful “tool” in learning English and directs the execution of learning processes. These findings seem to support the notion that metacognitive processes refer to the control or executive processes that direct cognitive processes and lead to efficient use of cognitive strategies (Forrest-Pressley and Waller, 1984:2).

This study, which involved university students, shows that metacognitive strategies were superior to the other two groups of strategies in contributing the increase of the language performance. The significantly positive effect of metacognitive strategies on the students’ language outcomes was probably affected by the learners’ maturity. That metacognitive strategies played a dominant role in learning a foreign language is related to the learner’s maturity may be explained by the “monitor” hypothesis of Krashen. Krashen (1985:1–2, 1988:3) explains that two conditions need to be met in order to use monitor and self-
correcting, which are classified under the metacognitive category in this study. The performer must be consciously concerned about correctness. This condition seems to be met in this study since it involved relatively mature students of university level, who learned (not acquired) English consciously in educational settings. Learning English in a formal setting as the students did during this experiment makes language learners tend to learn the language from its rules and correctness of in terms of rules becomes important to them. The data of this study seem to be compatible with Critical Period Hypothesis in second language learning (CPH). One prediction of CPH is that second language acquisition will be relatively fast, successful, and qualitatively similar to first language only if it occurs before the age of puberty (Snow and Hoefnagel-Honle, 1982:93). The finding that suggests the superiority of metacognitive strategies in this study may be linked to Bialystok’s study (1981), which showed that monitoring, one of the metacognitive strategies, had a strong positive trend and reached significance only in older students (grade 12). The finding of this study may support the conclusion that the use of a monitoring strategy has more effective power when language learners are mature.

SUCCESSFUL AND UNSUCCESSFUL LANGUAGE LEARNERS

In identifying the use of language learning strategies, the mean scores of the strategies of the top one-third and the bottom one-third students were compared. The strategies that turned out to provide a statistically significant contribution to the success in learning English (four strategies under metacognitive category, three strategies under deep-level category, and two strategies under surface-level category) were used to compare the strategy use of successful and the unsuccessful language learners.

A comparison of the mean scores of language learning strategies employed by successful and unsuccessful language learners reveals that the unsuccessful language learners employed all of the strategies under the three categories at a lower frequency. This finding supports the notion proposed by Wenden (1985) that ineffective learners are inactive learners. It also supports Huang and Van Naerssen’s study (1987) that less successful learners employed only weakly the strategies that successful learners used.

**Strategy Use among Three Types of Language Learners**

**Note:**

3.00 means sometimes (somewhat true)
4.00 means often (usually true)

Besides the frequency of use of the learning strategies that discriminates between successful and unsuccessful learners as discussed earlier, the apparent success in learning a foreign language relies much on the use of metacognitive strategies. It was not surprising that the strategies grouped under metacognitive category had the highest difference of mean scores between successful and unsuccessful learners. As mentioned earlier, language learning strategies classified under this category provided the biggest amount of the contribution to learning success. The strategies grouped under the similar categories had similar differences of mean scores. The mean differences between successful and unsuccessful learner’s use of metacognitive learning strategies range from 1.00 to 1.19, those of deep level strategies from .70 to .92 and surface level strategies from .47 to .62. That fact that the strategies grouped under the same categories had similar mean difference also supports the previous evidence that the language learning strategies were grouped appropriately under the categories by factor analyses.

**PEDAGOGICAL IMPLICATION**

By knowing language learning strategies predictive of language achievement and the learning behaviours of successful language learners, some pedagogical implications and suggestions for future studies can be provided based on the findings of this study.

It has also been found that the low achievers employed the strategies that are predictive of success less frequently than the high achievers. The teachers should provide opportunity for their students to employ self-evaluation and self-correction since these techniques enable the students to use optimally their metacognitive strategies, which proved to best predict the success in learning English. Consequently, the teachers should not provide direct solutions to the students’ language problems. Instead, the teachers should provide opportunities for their students to be involved in the highest level mental processes: metacognitive strategies.

This study has also revealed that surface level strategies are the lowest predictors of the success and only two of them to be significantly
correlated to the success. The implication of this finding is that language teachers should encourage their students not to overuse the surface level strategies that involve the lowest mental processing, such as reading aloud, and other strategies of rote learning. Probably, the use of these strategies is limited to occasions with particular tasks, for example when learning for a short-term purpose, or when learning facts and details, in which the strategies in the surface level category (approach) are appropriate and work well on such occasions (Biggs and Rihn, 1984:284–6). The teachers are encouraged to introduce their students with strategies that involve higher mental processing. Finally, the students are encouraged to employ as frequently as possible metacognitive strategies, which involve the highest mental processes so that the students will become autonomous learners.

SUGGESTIONS

In this study, the empirical evidence indicates that language learning strategies did affect success in learning English and different categories of language learning provide different contributions to the success. Several considerations for future studies can be suggested from the findings on the roles of language learning strategies in learning English. Since this study was conducted with a limited number of university students, other studies need to be replicated with bigger samples on different proficiency levels of students to explore to what extent each category of language learning strategies provides the contribution to learning success. This way may provide more trustworthy findings on the strength of each category. As a general rule, ideally, regression is done with n sizes above 200 (Hatch and Lazaraton, 1991:551). This study seems to be the first that has investigated language learning strategies employed in the four language skills: speaking, listening, reading, and writing in EFL tertiary setting in Indonesia. It would be worthwhile to conduct other studies in other EFL tertiary settings to explore whether the language learning categories provided in the LLQS also contribute similar success to the findings of the recent study. This may also address the evidence that students from different cultural backgrounds use different language learning strategies (Politzer and McGroarty, 1985, and Grainger, 1997).

This study has addressed the use of language learning strategies in EFL tertiary setting in Indonesia, in particular, at the university level. Consequently, the findings of the study are limited to this level (adults) and at the informal education (English course). The need to involve many more students from different universities is certainly warranted. In addition, there is a need for further investigation of different types of language learners (e.g., children => adults) and different settings (informal => formal).

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