The Effect of Learning Styles on
Learning Strategy Use by EFL Learners

Weng Pei-Shi
English Department of Tamkang University
9F.-16, No.61, Ln. 136, Xuefu Rd., Danshui Dist., New Taipei City 251, (R.O.C.), Taiwan

Abstract: Problem statement: Strategies play a significant role in assisting learners with developing language competence. During the past few years, numbers of studies demonstrated the importance of learning strategies in language learning. **Approach:** Positive relationship between strategy use and reading comprehension was presented and the differences of strategy use between successful and less successful learners were highly discussed in much research. Successful learners use learning strategies more frequently and effectively than unsuccessful learners. In addition, O'Malley and Chamot (1990) claimed that successful learners know how to choose learning strategies more appropriately. Based on those studies, the evidence of strategy use on different learners is clearly presented. However, few studies have explored the effect of different learning styles on strategy use between high achievers and low achievers, especially in an EFL context. **Results:** Thus, in this study, learning styles in influencing strategy use were examined. The researchers investigated the relationship between learning styles and strategy use on learners with different language proficiency levels. To do that, the subjects of the study were 71 non-English majors in New Taipei City and they were divided into two language proficiency levels (high and low) based on the English Proficiency Test. Two questionnaires (learning strategy use and learning style) were used to examine the effect of learning styles on reading strategy use. **Conclusion:** Based on the findings, implications are presented that may be useful to teachers making learners more independent and more effective in language learning.

Key words: Learning strategy, learning styles, proficiency levels

INTRODUCTION

Learning strategies play a crucial role in second or foreign language acquisition. Learning strategies also help learners to gather new information and then assimilate those acquired information into their existing knowledge. Appropriate learning strategies help explains the performance of good language learners; similarly, inappropriate learning strategies would add the misunderstanding for the poor language learning. During the past decade, many researchers have focused on learning strategy use and effective language learning and the difference of reading strategy use between successful and less successful learners were highly discussed in various research studies. Earlier research studies tended to examine the types of language learning strategies that language learner used (Wenden, 1987; Stern, 1975). However, recent research studies started to investigate the relationship between strategy use and language proficiency (Green and Oxford, 1995; Oxford and Ehrman, 1995). Generally, those research studies stated that more proficient language learners use more learning strategies but less proficient language

learners use less learning strategies. In Green and Oxford's (1995) study, it examined learning strategies use of university students in Puerto Rico and the results showed that the successful language learners use more high level strategies than less successful learners. Furthermore, for more detailed discussion, Bruen (2001) assumed that a high level of strategy use was related to high language proficiency and successful leaner's use more learning strategies. Learners in high language proficiency used more cognitive and met cognitive strategies in their language learning process. In addition, Griffiths (2003) proposed that learners with higher language proficiency expose themselves more frequently to the employment of language learning strategies. Based on these arguments, the possibility that the appropriate and effective strategy use might contribute to successful language learning is made accordingly and we cannot deny the positive relationship between reading strategy use and successful learning.

In addition to language proficiency, there are other variables affecting strategy use, such as age, gender and learning styles. Oxford (2005) claimed that learning

Corresponding Author: Weng, Pei-Shi, 9F.-16, No.61, Ln. 136, Xuefu Rd., Danshui Dist., New Taipei City 251, Taiwan (R.O.C.)

styles and strategies are the main factors helping determine how language learners learn a second or foreign language. Hence, it seems that learning styles are quite crucial during language learning process. Furthermore, learning styles are important factors influencing strategy use (Li and Qin, 2006). Language learners always use learning strategies that reflect their basic learning styles (Oxford and Nyikos, 1989; Oxford, 1996). Learning styles are internal traits of learners while strategies are external skills consciously or subconsciously used by learners. Some researchers have investigated the relationship between learning styles and strategies and they also claimed that learner's styles had significantly influenced the choices of language learning strategies (Carrell, 1988; Wen and Johnson, 1997). However, there are still few studies exploring the effect of different learning styles on strategy use in an EFL context, especially for university learners. Thus, to solve above problems, this study will take the two variables-learning styles and language proficiency levels into consideration, focusing on the relationship among strategy use, learning styles and language proficiency levels.

Thus, based on above discussions, there are two major research questions involve in this study:

- Are there any significant differences between learning styles and reading strategy use?
- Is there any significant difference between learners' language proficiency and their strategy use?

METERIALS AND METHODS

Participants: A total number of 71 non-English major sophomore students from a university of New Taipei City were involved in this study. Based on a standardized English Proficiency Test at this university, those participants were divided into two language proficiency groups (high and low). The standardized English Proficiency Test main includes the reading comprehension test and the testing content was similar with the practice General English Proficiency Level Test of intermediate-level. Table 1 shows the detail information about this test.

According to the results of this English proficiency level test, participants were divided into two levels-high language proficiency and low language proficiency level. The group of high language proficiency level involved 41 participants and the group of low language proficiency level involved 30participants. However, five participants did not fill out the questionnaires successfully (two from high language proficiency level and three from low language proficiency level). As a result, finally, there are 66 participants included in this research study-39 participants in high language proficiency level group and 27 participants in low language proficiency level group.

Table 1: The content of the division test

Test item	Reading comprehension test
Number	40
Time (minute)	45
Content	Vocabulary and structure (15 questions)
	Cloze tests (10 questions) Reading comprehension (15 questions)

Instruments:
The SILL: In this study, researchers used Oxford's (2005) Strategy Inventory for Language Learning (SILL) Version 7.0. The SILL is a 5-point Liker-scaled measurement that measures 50 strategy items used in language learning. Based on the SILL, items1-9 are memory strategies, items10-23 are cognitive strategies, items24-29 are compensation strategies, items 30-38 are metacognitive strategies, items 39-44 are affective strategies and items 45-50 are social strategies. Based on Oxford's (2005) classification systems, learning strategies are categorized into six types of strategies.

Memory strategies: Help the learner link one concept with another but does not necessarily involve deep understanding.

Cognitive strategies: Enable the learner to manipulate the language materials in direct ways, e.g., through reasoning, analysis, note-taking, summarizing, synthesizing, outlining and so on.

Compensatory strategies: Help the learner make up for missing knowledge, e.g., guessing from the context in listening and reading.

Metacognitive strategies: Enable the learner to control cognition, e.g., planning for an L2 task, gathering and organizing materials and evaluating task success, evaluating the success of any type of learning strategy and so forth.

Affective strategies: Help the learner to regulate emotions, motivations and attitudes.

Social strategies: Help the learner work with others and understand the target culture as well as the language.

However, considering participants' learning experience and backgrounds, in this present study, we used the Chinese version of the SILL to avoid participants' misunderstanding to influence the results. Thus, the researchers used Liao (2000)'s Chinese version of the SILL and the Cronbach alpha value was 0.96.

The PLSPQ: To investigate the relationship between learning styles and language strategy use, the researchers adapted Reid (1987) the Perceptual

Learning Style Preference Questionnaires as an instrument. Furthermore, based on Brown (2007) classification of learning styles, in this study, we just focused on three major learning styles-visual, auditory and kinesthetic. Thus, this questionnaire consists of 15 Liker-scaled questions-five questions of visual learning style preference, five questions of auditory learning style preference and five questions of kinesthetic learning style preference. Also, in order to avoid participants' misunderstanding about the questionnaire, researchers adapted Tsao (2002) Chinese version of the PLSPQ. Based on Tsao (2002) study, the study reported the Cronbach alpha value for each subscale-0.62 for visual learning style preference, 0.63 for auditory learning style preference and 0.85 for kinesthetic learning style preference.

Data analysis: In this study, the influence of learning styles on reading strategy use was examined. The researchers investigated the relationship between learning styles and reading strategy use by learners with different language proficiency levels. First, for research question one, the researchers investigated the relationship between learning styles and strategy use. To do that, one-way ANOVA was used to examine the effect of three learning styles on the six types of learning strategies. Second, for research question two, the effect of different language proficiency levels (high and low) on the strategy use was examined. Thus, independent sample t-test was used to examine the effect of learners' language proficiency levels on their strategy use. In the following sections, the results of the two research questions were shown clearly.

RESULTS

Collected data were analyzed and findings were discussed based on the two research questions stated in the introduction. In the first section, we presented the results of the learning styles and reading strategy uses. The effect of different learning styles on the six types of learning strategies was examined. Then, in the second section, we demonstrated the results of learners' level of language proficiency and their reading strategy uses. The effect of learner's level of language proficiency on the use of reading strategies was investigated. Finally, a brief summary of the results was provided at the end of this study.

Learning styles and learning strategy: For research question one, one-way ANOVA was used to examine the effect of learning styles on the six types of learning strategies. The results indicated that there was significant difference between leaning styles and learning strategies, but it simply existed in one type of learning strategy.

Table 2: Results of three learning styles and six types of learning strategies

Strategy		SS	DF	MS	F	Scheffe
				One-way ANOVA		
Memory	Within group	0.315	2	0.157	0.704	
	In group	14.068	63	0.223		
	Total	14.382	65			
Cognitive	Within group	1.000	2	0.500	0.232	
	In group	21.051	63	0.334		
	Total	22.051	65			
Compensation	Within group	0.330	2	0.165	0.846	
	In group	12.292	63	0.195		
	Total	12.622	65			
Metacognitive	Within group	0.796	2	0.398	1.463	
	In group	17.152	63	0.272		
	Total	17.948	65			
Affective	Within group	0.630	2	0.315	1.719	
	In group	11.540	63	0.183		
	Total	12.170	65			
Social	Within group	1.608	2	0.804	3.860*	
						Auditory>visual
	In group	13.118	63	0.208		
	Total	14.726	65			

*: $p < 0.05$

Table 3: Results of language proficiency levels (high and low) and the strategy use Independent sample t-test

	Proficiency	n	Mean	SD	t
Strategy use	High level	39	2.862	4.289	2.429*
	Low level	27	2.600	4.358	

*: $p < 0.05$

From Table 2, it showed that the three learning styles (visual, auditory and kinesthetic) did not influence all the six types of learning strategies (memory, cognitive, compensation, metacognitive, affective and social). The learning styles only influenced the use of social strategies (F = 3.860, $p < 0.05$). In addition, after the Post Hoc Scheffe test, researchers found that learners with auditory learning styles use more social strategies than those with visual learning styles.

Language proficiency levels and learning strategy: For research question two, Independent sample t-test was used to examine the effect of learners' language proficiency levels on their strategy use. Here, the results showed that there is significant difference between language proficiency levels and the use of learning strategy use. In the following, Table 3 would provide more detailed information.

Table 3 showed that there is significant difference between language proficiency levels and strategy use (t = 2.429, $p < 0.05$), which means that learners with high language proficiency levels tend to use more learning strategies than those with low language proficiency levels.

DISCUSSION

This present study examined the effect of learning styles and language proficiency levels on the use of

learning strategy. Thus, two major sections were involved in this part. The first section is related to learning styles and learning strategy and the second section is about the language proficiency levels and learning strategy.

Research question 1: Are there any significant differences between learners' learning styles and their learning strategy use? In total, the results showed that learning styles did not have much influence on the learning strategy use. Those results did not support the previous studies. Based on Wen and Johnson (1997)'s statement, they proposed that learning styles would influenced the strategy use, but in this present study, the results did show this conclusion. However, for more detailed discussion, among the six types of learning strategies, there is significant difference existing on social strategy and learning styles. From the findings, the researchers found that learners with auditory learning style use more social strategies than those with visual learning style. According to Celce-Murcia (2001), the main characteristics of visual and auditory learners were discussed as follows:

- Visual learners prefer to have information presented in graphs, maps, plots and illustrations
- Auditory learners depend on hearing and speaking as a main way of learning. Auditory learners must be able to hear what is being said in order to understand and may have difficulty with instructions that are written. They rely on listening input such as conversation to sort through the information that is sent to them

Moreover, Oxford (2005) also discussed the definition of social strategy. Social strategies, such as asking questions to get verification, asking for clarification of a confusing point, asking for help in doing a language task, talking with a native-speaking conversation partner, help learners work with others and understand the target culture as well as the language. Thus, compared with learners with visual style, it looks like the characteristics of learners with auditory style would be more close to the use of social strategy use.

Research question 2: Are there any significant differences between language proficiency levels and learning strategy use? The results showed that there is significant difference between language proficiency levels and learning strategy use. Learners with high language proficiency levels use more learning strategies than those with low language proficiency levels. The

results supported some previous studies. As Green and Oxford (1995)'s study, it proposed that more proficient language learners tend to use more strategies when learning a language. Also, less proficient readers deploy fewer strategies (O'Malley and Chamot, 1990). In the same vein, more proficient learners make greater use of strategies than less proficient learners (Bruen, 2001; Davies and Elder, 2006). Compared with more proficient learners, less proficient L2 learners use relatively few strategies and do so in a less effective manner (Anderson, 1991).

CONCLUSION

All these findings are available to teachers or teachers-to-be. When teaching their students, especially in the application of the influence of learner's learning styles on their learning strategy use, teachers may refer to the findings shown here: There is no significant difference between them. As to the difference of the use of learning strategy between high achievers and low achievers, teachers should bear in mind that there is significant difference between them. High achievers tend to employ more learning strategies than low achievers. Given the fact that high achievers adopt more learning strategies than low achievers, teachers had better explore the reasons for the existence of this phenomenon. Additionally, teachers need to find ways to help improve low achievers' language ability so that they can, on the one hand, learn a second/foreign language efficiently and successfully and on the other hand, they may adopt the leaning strategy just like those high achievers. In the following, there are some implications for language teachers:

There is no single teaching method suitable for all language learners: As we discuss above, learning styles and strategies help determine learners learning process. As language teachers, we cannot assume that a single L2 method could possibly fit an entire class and fit all the language learners' needs. Instead of choosing a specific teaching method, teachers would do better to employ a broad instructional approach and combine various types of teaching methods to correspond all the learners' needs in class.

How to conduct successful L2 instruction is important: The more that teachers know about their students' style preferences, the more effectively they can orient their L2 instruction. Thus, as language teachers, we can have some simple investigations to check learners' learning styles. As we discussed previously, some learners might need instruction presented more visually, while others might require more auditory, kinesthetic, or even other types of

leaning styles. As a result, without adequate knowledge about language learners' style preferences, teachers cannot systematically provide the suitable instructional teachers cannot make good use of their teaching strategies in L2 instruction.

REFERENCES

Anderson, NJ., 1991. Individual differences in strategy use in second language reading and testing. Modern Language J., 75: 460-72. DOI: 10.1111/j.1540-4781.1991.tb05384.x

Brown, H.D., 2007. Principles of Language Learning and Teaching. 5th Edn., Longman, White Plains, N.Y, ISBN-10: 0131991280 pp: 410.

Bruen, J., 2001. Strategies for success: Profiling the effective learner of German. Foreign Language Annals, 34: 216-225. DOI: 10.1111/j.1944-9720.2001.tb02403.x

Carrell, P.L., 1988. Interactive Approaches to Second Language Reading. 5th Edn., Cambridge University Press, New York, ISBN-10: 0521353602 pp: 289.

Davies, A. and C. Elder, 2006. The Handbook of Applied Linguistics. 1st Edn., Blackwell Pub., Malden, ISBN-10: 9781405138093 pp: 888.

Green, J.M. and R. Oxford, 1995. A closer look at learning strategies, L2 proficiency and gender. TESOL Q., 29: 261-297.

Griffiths, C., 2003. Patterns of language learning strategy use. System, 31: 367-383. DOI: 10.1016/S0346-251X(03)00048-4

Liao, Y.F., 2000. A study of Taiwanese Junior high school students' EFL learning motivation and learning strategies. Retrived from National Digital Database of Theses and Dissertations in Taiwan.

O'Malley, J.M. and A.U. Chamot, 1990. Learning Strategies in Second Language Acquisition. 1st Edn., Cambridge University Press, England, ISBN-10: 052135286X pp: 260.

Oxford, R. and M. Nyikos, 1989. Variables affecting choice of language learning strategies by university students. Modern Language J., 73: 291-300. DOI: 10.1111/j.1540-4781.1989.tb06367.x

Oxford, R.L., 2005. Language Learning Strategies: what every Teacher Should Know. 1st Edn., Heinle and Heinle, Boston, ISBN-10: 0838428622 pp: 342.

Celce-Murcia, M., 2001. Teaching English as a Second or Foreign Language. 3 rdpEdn., Heinle and Heinle, Boston, ISBN-10: 0838419925 p: 584.

Reid, J.M., 1987. The learning style preferences of ESL students. TESOL Q., 21: 87-111.

Wenden, A., 1987. Learner Strategies in Language Learning. 1st Edn., Prentice Hall, ISBN-10: 013527110X pp: 181.

Stern, H.H., 1975. What can we learn from the good language learner. Canadian Modern Language Rev., 31: 304-318.

Tsao, T.L., 2002. Perceptual learning style preference and learning strategy use among Taiwanese senior high school EFL learners. Retrived from National Digital Database of Theses and Dissertations in Taiwan.

Wen, Q. and R.K. Johnson, 1997. L2 learner variables and English achievement: A study of tertiary-level English majors in China. Applied Linguistics, 18: 27-48. DOI: 10.1093/applin/18.1.27