An Analysis of the Impact of Language Learning Styles on Learning Strategy Preferences*

GAO Pei-xin

Binzhou University, Binzhou, China

This study is designed to explore the impact of LLS (Language Learning Styles) on learning strategy preferences through questionnaire and data analysis. The aim of the study is to make an through investigation of Chinese non-English majors' learning styles and their learning strategies in English study, and to analyze the impact of learning styles on learning strategy preferences statistically so as to provide empirical evidence in this field, and then present some implications for college English teaching and learning in Chinese context. This study has significance for pedagogy. Teachers should make language learners aware of their own learning styles and strategy preferences and help them select strategies matching their own style preferences in second language learning. It is hoped that this study can benefit language teachers, learners, and researchers to some extent and can spark more teaching research in the future.

Keywords: LLS (Language Learning Style), learning strategy, impact

Introduction

This study results from both an interest in language learning strategy research and dissatisfaction with the current situation of language learning strategy training in Chinese universities. The present study is meant to explore the impact of language learning styles on learning strategy preferences of 250 non-English majors in Chinese universities by data collection and data analysis. The result, to some extent, may enrich the empirical evidence in this field and provide practical implications to English learning and teaching in China.

The findings of the study will benefit English teachers, learners, and researchers in their practice. This study could help teachers realize the importance of learning styles and learning strategies, help teachers know their students much better, and be aware of students' learning styles as well as their own teaching styles so as to avoid "style wars". Besides, this study presents teachers a clear picture about the correlation between learning styles and learning strategies, and helps them choose the appropriate learning strategies in their learning process. As for the students, this study could help them form a suitable self-evaluation, understand their learning styles, and build up an appropriate system of learning strategies for themselves so as to achieve the success in their language learning. For researchers, this analysis offers one case to support the study of the link between learning styles and learning strategies by providing statistical proof.

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GAO Pei-xin, lecturer, master, School of Flight Training, Binzhou University.

Literature Review

Distinction Between Learning Style and Learning Strategy

The difference between learning styles and learning strategies has always been unclear. According to Brown (1994):

“Style is a term that refers to consistent and rather enduring tendencies or preferences within an individual. Styles are those general characteristics of intellectual functioning and personality type, as well, that especially pertain to you as an individual, that differentiate you from someone else”. While “Strategies are specific methods of approaching a problem or task, modes of operation for achieving a particular end, planned designs for controlling and manipulating certain information. They are contextualized battle plans that might vary from moment to moment, or day to day, or year to year”. (p. 104)

Reid (1987) also mentions that learning styles are internally based characteristics, often not perceived or used consciously. They are the basis for the intake and understanding of new information; students can identify their preferred learning styles and stretch those styles by examining and practicing various learning strategies. Learning strategies, in contrast, are defined as external skills that students use, often consciously, to improve their learning; learning strategies might be described as study skills that students can be taught that can enhance or expand their existing learning styles. This distinction is described by Oxford and Cohen (1992) as:

Learning styles are the general approaches to learning or problem-solving, while learning strategies are the specific behaviors or actions—often conscious—used by the students to improve or enhance their learning process. (p. 440)

In conclusion, learning styles are on the higher level of human cognition than where learning strategies are, and learning styles, in part, influence what strategies a learner may use. And strategies vary individually. Each of us has a whole host of possible ways to solve a particular problem and we choose one or several of those in sequence for a given problem.

Connection Between Learning Styles and Learning Strategies

The connection between language learning styles and learning strategies are complex and, until recently, almost unexplored. However, it is likely that a strong relationship exists between individual preferred styles and their choice of language learning strategies.

It is suggested (Oxford & Cohen, 1992) that each style has related learning strategies. Global learners usually choose holistic strategies such as guessing, predicting, searching for the main idea, and engaging in extensive communication in English. Global learners prefer strategies that help them get the main idea quickly without attending to the finer points. In contrast, analytic learner of ESL/EFL prefers language learning strategies that involve dissecting and logically analyzing the given material, searching for contrast, and finding cause-effect relationships. They often like to use strategies involving breaking material down into smaller pieces in an accurate fashion.

A random student is comfortable without having all the information and feels to use guessing, predicting, and other compensation strategies in the absence of full knowledge. Compared with random students, sequential students would follow the teacher’s guidelines to the letter, to demand full information, and to avoid compensation strategies that demand creativity in the absence of complete knowledge.

Learners of different sensory learning styles also have their particular preferences in the use of learning strategies. A student who has a strongly visual learning style tends to use the strategies of taking notes and

outlining, whereas auditory-style learner tends to use the strategies of recording lectures and listening to the tape after the class is over. Tactile students, compared with others, show significantly greater use of strategies for searching for and communicating meaning and for self-management. Students who favor group study utilize social and interactive strategies, such as working with peers, requesting clarification, and asking for correction.

Learning style may then deeply affect which strategies are used, and which are used most successfully. Little and Singleton (1990) argue that it is possible to help adult learners to explore their own learning style preferences and to shape their learning strategies to suit the requirements of a particular learning task. It is this belief that underlies the idea of “learner training” (Holec, 1987).

Methodology

This study is mainly quantitative analysis in nature. Questionnaires were used for data collection: One was Oxford's (1990) Strategy Inventory for Language Learning (SILL), and the other was Reid's (1984) Perceptual Learning Style Preference Questionnaire (PLSP). The participants were 250 non-English majors (sophomore) from Binzhou University. SPSS 13.0 was used to analyze the frequency of six learning styles and six learning strategies, and the correlation among learning styles and learning strategy use. Through this analysis, we deduced the impact of learning styles on learning strategy preferences.

Research Questions

This empirical study is mainly descriptive in nature and is carried out in quantitative method. Four questions are put forward on the basis of field research, which presents how language learning styles affect the non-English majors' learning strategy preferences in Chinese context.

- (1) What are the language learning style preferences of the participants?
- (2) What are the language learning strategy preferences of the participants?
- (3) What is the relationship between learning styles and learning strategies?
- (4) What is the impact of each language learning style on learning strategy preferences?

Participants

Students participated in this research were 250 non-English majors from different non-English departments in Binzhou University. They were sophomores and their ages ranged from 18 to 21 with the average being 19.5. Among the 250 subjects, 140 were males and 110 were females. The reason for choosing students in grade two was because, firstly, these learners had received at least seven years of systematic English learning at the middle school and college by the time of this investigation was taken and they had formed their own learning style preferences and adopted certain language learning strategies. Secondly, these learners would take part in CET-4 test in that semester, and their English level was on a certain extent.

All the participants in this study received uniform instructions on how to complete the questionnaires. They learned that: (1) the study was not a test; (2) there were no right or wrong answers; (3) the study was not associated with the instructor or the college; (4) they were not required to identify themselves in the survey; and (5) the obtained responses would be handled with absolute confidentiality. Their respective language instructors administered the questionnaires in their classrooms. The entire procedure lasted 25 minutes.

Instruments

In this study, the participants were required to fulfill two questionnaires: One was “Strategy Inventory for

Language Learning (SILL)” adopted from Oxford (1990) and the other was “Perceptual Learning Style Preference Questionnaire (PLSP)” from Joy Reid (1984). In order to avoid a misunderstanding over some statements, in this research, all of the 70 statements of SILL and PLSP have been translated into Chinese. Some minor modifications were made in the wording of certain strategy items in order to ensure accuracy of translation. The instructions for how to respond to the questionnaires and the response choices were also in Chinese. The statistical instrument used was SPSS 13.0.

Data Collection

All the 250 participants completed the total 70 items as required. The researcher examined the answer sheets one by one when they were collected, and no missing items were found since the whole process of questionnaire administration was rigidly controlled. After being checked, sorted, and rearranged for the convenience of future data analysis, the score continuum of every kind of language learning style and learning strategy of each participant were put into the computer with the statistical program SPSS 13.0 (Statistical Package for Social Sciences for Windows). In this way, the data about the learning styles and learning strategies of every participant have been obtained. Statistics of frequency distributions were performed for all questionnaire items to identify any possible deviant cases.

Data Analysis

To analyze the data, SPSS 13.0 was used. The data analysis concerns three aspects: the participants’ language learning style preferences, the use of participants’ language learning strategies, and the relationship between learning styles and learning strategies.

Participants’ language learning style preferences. Joy Reid’s (1984) questionnaire PLSP was adopted in the study to get the information about the participants’ perceptual learning style preferences. The PLSP indicates students’ six kinds of learning styles: visual, auditory, tactile, kinesthetic, group, and individual styles. We can identify the major, minor, and negligible learning styles according to the scores the participants got in terms of every kind of learning style. When they got their scores, multiply them by two, and the results ranging from 38 to 50 belong to major learning style preferences; from 25 to 37 are minor learning style preferences; from 0 to 24 belong to negligible learning style preferences (see Table 1).

Table 1

Key to Identifying the Participants’ Learning Style Preferences

Learning style	Score
Major	38–50
Minor	25–37
Negligible	0–24

Participants’ language learning strategy preferences. Oxford’s (1990) SILL was used to identify the participants’ learning strategy preferences. This strategy inventory includes six kinds of learning strategies: memory, cognitive, compensation, metacognitive, affective, and social strategies. We can identify the participants’ learning strategy preferences according to the scores they get on every kind of learning strategies. The score ranging from 4.5 to 5.0 means always or almost always use; from 3.5 to 4.4 means usually use; from 2.5 to 3.4 means sometimes use; from 1.5 to 2.4 means generally not use; from 1.0 to 1.4 means never or almost never use (see Table 2).

Table 2

Key to Identifying the Participants' Learning Strategy Preferences

Use of learning strategies	Score
Always or almost always use	4.5–5.0
Usually use	3.5–4.4
Sometimes use	2.5–3.4
Generally not use	1.5–2.4
Never or almost never use	1.0–1.4

After processing the data of language learning styles and learning strategy preferences, SPSS 13.0 was used to operate the correlational analysis (the score continuums of learning styles and learning strategies of every participant). We got the correlate coefficient (r) between learning styles and learning strategy choices.

Findings

Findings About Participants' Language Learning Style Preferences

Table 3 reported the general learning style preferences among all the participants in this research. From the table we can see that the order of the style preferences strengths from high to low is like this: tactile style, visual style, kinesthetic style, individual style, auditory style, and group style. The highest means are tactile style (mean = 36.0000), visual style (mean = 33.5455) and kinesthetic style (mean = 32.5909), while the lowest one is group style (mean = 30.5364) (see Table 3).

Table 3

The Participants' Language Learning Style Preferences (Source: Original)

	N	Mean	Std. Deviation	Std. Error of Mean
Visual	250	34.5455	6.53286	.44045
Auditory	250	32.6000	6.20090	.41806
Kinesthetic	250	33.5909	6.96999	.46992
Tactile	250	37.0000	6.86730	.46299
Group	250	31.5364	8.12592	.54785
Individual	250	33.3636	8.52043	.57445

According to Reid (1984), the learning styles are major learning styles if the scores of the learning style test range from 38 to 50, it is minor learning styles if the scores are 25 to 37, and it is negligible if the scores are below 24. In this study, the mean scores of all learning styles range from 30.5364 to 36.0000, which means that all these participants have minor learning style preferences and almost all the participants are multi-style learners.

According to the results of this study, tactile and kinesthetic styles have received the highest mean scores among all language learning strategy use. Tactile and kinesthetic styles are students' most preferred learning styles, which refer to learning more effectively through touch and whole-body movement. Because these two styles allow learners to experience language totally, ESL learners prefer them.

What makes the participants prefer visual and individual styles and least favor group learning styles? Maybe this is due to our Chinese cultural and educational situation. First, influenced by the ancient and traditional Chinese culture, most of the Chinese students are introverted more or less. They like studying by

themselves. Cooperation is not their preference. They do not like to communicate or exchange their thoughts with each other. Books are their “teachers” in terms of foreign language learning. They could learn best from seeing words in books or on the blackboard and remembering them when they are alone. Therefore, they prefer individual, visual styles, rather than group styles. Second, education plays an important role in the formation of their learning style preferences. In China, English classes are always teacher-centered classes. In the classroom, teachers always give speeches, write important points in the blackboard, and require students to read textbook, which is called “duck-feeding”. Because of the special model of language teaching, students get used to visual learning style (looking at blackboard; reading textbook; reading reference book).

Findings About Participants’ Language Learning Strategy Preferences

Table 4 presented the participants’ learning strategy preferences. From the table we can see that the frequency of the learning strategy use strengths from high to low is: compensation strategy, memory strategy, social strategy, cognitive strategy, metacognitive strategy, and affective strategy. The highest means are compensation strategy (mean = 3.3629) and memory strategy (mean = 2.8356), while the lowest one is affective strategy (mean = 2.6985) (see Table 4).

Table 4

The Participants’ Language Learning Strategy Preferences (Source: Original)

	N	Mean	Std. Deviation	Std. Error of Mean
Memory	250	2.9356	.58401	.03937
Cognitive	250	2.8983	.54363	.03665
Compensation	250	3.4629	.63431	.04276
Metacognitive	250	2.8125	.68996	.04652
Affective	250	2.7985	.74246	.05006
Social	250	2.9152	.73623	.04964

According to Oxford’s (1989) statistical analysis, mean scores ranging from 3.5 to 5.0 are high strategy use; mean scores from 2.5 to 3.4 are medium strategy use; and mean scores from 1.0 to 2.4 are low strategy use. In this study, mean scores of all learning strategies range from 2.6985 to 3.3629, which means that the strategy use of these participants is in medium level, none of the six categories of language learning strategies are major learning strategies, and none of the strategies is never used.

This study shows that non-English major students in Chinese universities have formed the specific strategy repertoire with the improvement of their learning proficiency, but this strategy repertoire is far from enough. This result reflects that our learning occurs in second language environment and the real learning context is greatly lacking. Students, especially for non-English majors in high vocational college, seldom have the chance to have access to relevant learning strategy information. Teachers and students of non-English majors pay little attention to using learning strategies during their English teaching and learning process. Most of the learning materials for non-English major students are composed of vocabulary and grammar points, and only a small amount of learning strategies can be found in their learning books. Non-English major teachers hardly provide relevant strategy training and guide students to employ some specific learning strategies to help them make up their learning deficiency.

According to the results of this study, compensation strategy has received the highest mean score among all language learning strategy use. Compensation strategy, as a kind of strategy preferred by ESL learners, it

means guessing intelligently, overcoming limitations in speaking and writing, guessing words based on context, using gestures and coining words to communicate. Such strategies are often needed in the process of learning.

It is a surprise that cognitive and metacognitive strategies are not the most frequently used strategies among the six learning strategies. Cognitive strategy is always the most popular language learning strategy, but in this study, it ranks much lower. The reason may be that the list of cognitive strategy of this questionnaire is not suitable for non-English major learners in high vocational college. For example, strategies, such as “I read for pleasure in English”, “I find the meaning of an English word by dividing it into parts that I understand” are not the ones that these students often employ in their learning process. Metacognitive strategy is not the most favored strategy, which may be caused by the characteristics of high vocational learners. Compared to the undergraduates in universities and colleges, these high vocational learners do not have a strong sense of goal-achieving. They do not have high motivations and make learning schedules or timetables to assure enough English learning time.

Affective strategy is the least used strategy in students’ learning and this phenomenon can be easily understood. Non-English major students do not genuinely like to learn English, and they seldom make themselves to learn English out of class, especially for high vocational students. So they care little about their feelings of speaking or learning English.

From the above discussions, we can see that in the area of learning strategies, there is no single, most common pattern of strategy use across all groups. Learners use compensation and memory strategies most frequently and use affective strategies least frequently.

Findings About the Relationship Between Language Learning Styles and Learning Strategy Preferences

After dealing with data of language learning styles and learning strategy preferences respectively, the study made correlational analysis between these two variables. Table 5 just shows the relationship between the two variables (see Table 5).

Table 5

Relationship (r) Between Language Learning Styles and Learning Strategy Preferences (Source: Original)

Style \ Strategy r	Memory	Cognitive	Compensation	Metacognitive	Affective	Social
Visual	.306**	.318**	.122	.332**	.392**	.289**
Auditory	.236**	.180**	.110	.159*	.308**	.223**
Kinesthetic	.294**	.261**	.248**	.291**	.412**	.384**
Tactile	.227**	.255**	.252**	.312**	.325**	.345**
Group	.145*	.112	.064	.059	.223**	.182**
Individual	.202**	.157*	.117	.224**	.110	.181**

Notes. ** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).

The correlation coefficient study of perceptual learning styles and language learning strategies suggests that perceptual learning styles have a close relationship with language learning strategy choice.

As is presented in the above table, visual, auditory, kinesthetic, and tactile styles have positive correlations with all the learning strategies.

There are significantly positive correlations between visual learning style and all strategy use except for compensation strategies. Of all the learning strategies, visual learners prefer affective strategies most ($r =$

0.392). Students of visual learners have also higher preference for metacognitive, cognitive memory and social strategies ($r = 0.332, 0.318, 0.306, 0.289$ respectively). The positive correlations between visual learning style and these strategies are very significant.

Auditory learning style is positively correlated to affective, memory, social, cognitive, and metacognitive strategies. The correlation coefficient between auditory style and affective strategy use is comparably higher than that of other strategy use ($r = 0.308$). Nevertheless, auditory learning style is not significantly related to compensation strategy use.

Tactile learning style and kinesthetic learning style are very significantly related to all the strategy use. That is to say, students of tactile and kinesthetic learning styles would like to try more various learning strategies to promote their learning. Of all these strategies, affective and social strategies are their most preferred ones.

Group learning style is only significantly related to three strategy use: affective strategy, social strategy, and memory strategy ($r = 0.223, 0.182, \text{ and } 0.145$ respectively). Students of group learning style prefer affective strategy most. This kind of style is least preferred by Chinese students and has least correlations with learning strategies compared to other learning styles.

Individual learning style is positively correlated to metacognitive strategy and memory strategy ($r = 0.224, 0.202$ respectively). Individual style is most significantly related to metacognitive strategies. That may be because the individual learners prefer to self-monitor themselves during their learning process.

It is necessary to point out that students of kinesthetic and tactile learning styles employ the most language learning strategies and students of group learning style use the least language learning strategy. It is interesting to notice that direct strategies are used more frequently than indirect strategies. Of all the direct strategy use, compensation strategy is the most preferred and followed by memory and cognitive strategies. Social strategy is the most employed strategy and followed by metacognitive and affective strategies among indirect strategies.

Each learning style has the most corresponding learning strategy; visual-style students and auditory-style students prefer affective strategy most; tactile-style students employ social strategy most frequently; kinesthetic-style students like to use affective strategies best; individual-style and group-style students prefer metacognitive and affective strategies respectively.

From the findings, it is identified that there are positive correlations between language learning styles and learning strategies. The findings confirm Oxford's opinion (1989) "it is likely that a strong relationship exists between the individual's use of learning strategies and the individual's learning style", and Reid's hypothesis (1999) "student's strategies are linked to their learning styles" (p. 302). The results also parallel Rossi-Le's results (1995) in two aspects: Students who favor group study utilized social and interactive strategies, which are characterized by interactions with others; auditory learner is a significant predictor of using memory strategies.

The Impact of Language Learning Styles on Learning Strategy Preferences

Based on the data analysis and the above discussions, we can deduce that some language learning styles have strong impact on certain learning strategy preferences. In detail, visual, auditory, tactile, and kinesthetic learning styles have strong impact on the choice of certain learning strategy use. These learning strategies include memory, cognitive, metacognitive, affective, and social strategies. Table 5 shows that visual learners like affective, metacognitive, cognitive, memory, and social strategies; auditory learners prefer affective,

memory, social, and cognitive strategies; kinesthetic and tactile styles have strong impact on all learning strategies; individual learners prefer metacognitive and memory strategies, and group learners only like affective and social strategies. Moreover, multiple regression results indicated that having a certain perceptual learning style preferences significantly predicts the types of strategies students chose.

From these results, we can confirm that learning styles have impacts on learning strategies, and the choice and use of learning strategy shows learner's learning styles. Brown (1994) notes "many strategies are related to and actual become the outward manifestation of styles" (p. 200). From his investigation, Rossi-Le (1995) concludes that an individual's learning style preference influences the types of learning strategies that he or she will employ in acquiring L2.

From the above discussions, we can draw a conclusion that learning styles have relationships with learning strategies and learning styles affect the choice and use of learning strategies. Therefore, the teacher should pay attention to students' learning styles in strategy training. The teacher should make students aware of their own learning styles and learning strategies and reinforce their preferred learning styles and strategies. At the same time, the teacher can ask students to try consciously those styles and strategies that they do not prefer, since the learner's learning style and strategy system can be improved through systematic training (Oxford, 1990). The aim is to make the students become more efficient and more automatic language learners.

Pedagogical Implications

According to the findings, learners should be aware of their own learning style and learning strategy preferences, and then link their learning style preferences and learning strategies together in the classroom with the help of their teachers. Learners should choose learning strategies matching their learning styles and teachers should encourage students to use strategies suitable for them. Such measures can help students learn more effectively.

However, it is not enough just using the learning strategies suitable for learning styles. Students should be helped and encouraged to widen their learning strategies. Teachers can carry out strategy training, especially Style- and Strategy-Based Instruction to teach students how, when, and why strategies should be used to compensate for style weaknesses to reach the aims of their language learning, and help them improve cognitive, metacognitive, and affective strategies, which are important for L2 learning.

Conclusion

This study is mainly quantitative analysis in nature and it mainly reveals the following three major findings: (1) almost all the participants are multi-style learners. They prefer most to tactile, visual and kinesthetic styles and group style is their least favored style; (2) learners use compensation and memory strategies most frequently and use affective strategies least frequently; and (3) there are complex relationship between learning styles and learning strategy preferences. Through this research we can draw conclusion that there is close relationship between learning styles and learning strategies, and the teachers should analyze the students' learning logically and carefully, and then choose the most suitable ways to conduct teaching to different students. Only in this way can the teaching efficiency can be improved.

Based on this study, some recommendations can be suggested for further researches: First of all, the same researches can be conducted on different kinds of participants such as middle school students, university students in English major, and university students in non-English majors. Results from different-level

participants can present a whole picture of this issue. Secondly, if possible, the study can involve students not only in a school, but also cross-school, or cross-province, even cross-culture. Such results can overcome the differences produced because of districts. Thirdly, further researches can adopt instruments investigating other types of learning styles such as cognitive learning styles, affective learning styles. Such investigations can make up the disadvantage of single-style investigation.

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