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Effects of Language Learning Strategies and Learners' Motivation on Students' Learning Achievement

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Abstract

This study investigated whether learning strategies had made any impact on learners' achievement and explored whether learning motivation was correlated with learning strategies. The participants of this study were the students from the EFL (English as a Foreign Language) intermediate level course at a college in Taiwan. The students were given a pretest and a posttest. The mean scores of these tests were compared with a SILL survey (Strategies Inventory for Language Learning) at the end of the investigation. The participants' course performance was compared with their use of learning strategies. The assumption of the relationship between learning strategies and motivation is that motivated learners have a greater desire to seek out solutions or support from others and employ more strategies to process the new information. The results of this investigation revealed that only the memory strategies had a significant difference in the posttest of Group A on the independent sample t-test analysis.

Keywords: Language learning strategies, Learning motivation and Achievement

1. Introduction

English education has been widely incorporated into the general education curricula in higher education in Taiwan. Many EFL educators have searched for effective strategies to enhance students' general English competence. In this era of internationalized markets, the most important skill besides professional capabilities is English proficiency. Many debates have examined the success of language learners, especially successful EFL learners. The assumption is that successful learners use more strategies to create learning efficacy than those who use fewer strategies to produce desirable outcomes (Chang, Shu, & Lee, 2007). Language learning strategies reflect learners' application of their active and self-directed involvement. These cognitive intentions and skills assist learners in comprehending, remembering, and storing new information.

Motivation can be referred to as learners' cognitive perception of their learning environment, goals, self-efficacy, interests, and beliefs in the value of learning (Garcia & Pintrich, 1994). Learners' motivation and their application of the learning strategies could have a correlated relationship. Schmidt (2001) suggested that learners' acquisition of a second/foreign language might not always indicate a positive correlation with their learning strategies. Some successful learners might have already adopted certain effective strategies, whereas less successful learners might still in the process of searching for effective strategies, leading them to continue trying to use a broader range of strategies. However, the relationship between motivation and learning strategies significantly reflects learners' anxiety toward assessment. Learners with low test anxiety demonstrate a positive correlation between academic performance and their cognitive and metacognitive strategies (Garcia & Pintrich, 1995). Motivation can be a predictor of the application of the strategies. In a large-scale study of university students, those students with stronger motivation used more strategies than those with weaker motivation (Schmidt & Watanabe, 2001).

In the EFL learning context, many students rely on memorization strategies to learn vocabulary, phrases, and grammatical rules (Wu, 2010). However, it might be hard for EFL learners to apply their utterances to specific scenarios in terms of their usage of common expressions in their target language to proper pragmatic settings. Furthermore, it is challenging for language learners to acquire a language merely based on grammatically related memorization strategies. Thus, EFL educators continue to search for effective approaches to use with Taiwanese college students. In Taiwan, English for general purposes (EGP) is a required subject from elementary school to university. In addition, English as a foreign language (EFL) is valuable in the fields of technology, science, education, business, and international communication (Chang, Liu, & Lee, 2007). However, EFL curriculum in most Taiwanese universities is offered only during freshmen and sophomore years. Moreover, the time restriction only allows for two or three course meeting hours per week. Most college students struggle with language proficiency exams (e.g., TOEIC or the General English Proficiency Test (GEPT), which is administered by the Taiwanese government). Therefore, this study aims to explore learners' use of learning strategies compared to their achievement and learning motivation in a college of technology in Taiwan.

2. Literature Review

2.1 Language Learning Strategies

Language learning strategies are the procedures students adopt to enhance their own learning. Strategies are essential for developing communicative competence because they provide learners with active and self-directed guidance (Oxford, 2001). Learning strategies can be learned, and a number of studies have demonstrated higher achievement with the use of learning strategies (Chang & Liu, 2013; Chang et al., 2007; Garcia, 1995; Riazi, 2007; Schmidt & Watanabe, 2001; Wu, 2010). Language learning strategies mainly assist learners in comprehending, storing, and remembering new information (Chamot & O'Malley, 1987). The effective application of core learning strategies, especially the use of self-monitoring and elaboration, leads to more effective language learning.

There are various ways to define learning strategies and their effects. Chang and Liu (2013) mentioned that cognitive strategies enable learners to work with information to enhance learning efficacy while metacognitive strategies promote higher-order executive skills, including monitoring, planning, and evaluating learning agendas. Moreover, social and affective strategies involve interactions with others or exercising control over affection.

Oxford (1990) classified learning strategies inventory as operations employed by the learner to aid in the acquisition, storage, retrieval, and use of information. Learners can adopt more specific strategies to make their learning more direct and effective. Oxford categorized these learning actions as direct or indirect strategies. Direct strategies help learners store and recover information; they assist learners in producing the language to fill in the gap of unknown knowledge. Direct strategies include memory, cognitive, and compensation strategies. Meanwhile, indirect learning strategies echo direct strategies, but manage language learning without direct involvement. Indirect strategies are metacognitive, affective, and social strategies. The functions of each strategy defined by Oxford (1990) are as follows:

- Memory strategies relate how students remember language.
- Cognitive strategies refer to how students think about their learning.
- Compensation strategies enable students to overcome limited knowledge.
- Metacognitive strategies relate to how students manage their own learning.
- Affective strategies relate to students' feelings.
- Social strategies involve learning by interaction.

The aims of second language learning strategies (SLLSs), as perceived by Oxford, are to create an orientation toward the development of communicative competence. Each learner has different learning styles and varied levels of awareness about the use of strategies. Language teachers should use a wide range of learning strategies in order to meet the needs of students processing different learning styles, motivation, and strategies preferences (Abed, 2011).

2.2 Effects of Using Language Learning Strategies

Some studies on language learning strategies carried out by Iranian researchers have suggested that many EFL students used meta-cognitive social, cognitive, affective, and compensation strategies most frequently instead of memory strategies (Ketabi & Mohammadi, 2012). However, Oxford (1990) indicated that cognitive strategies are popular strategies in which learners can control or transform their target language by repeating, analyzing, or summarizing. Ketabi and Mohammadi (2012) concluded from their study that a significant correlation exists for cognitive strategies, which serve as an indicator for the improvement of language proficiency. They suggested that the curriculum should focus learners' internal metal modes in terms of the process of analyzing and reasoning.

Other studies have shown that gender has an effect on memory and metacognitive strategies (Khalil, 2005; Riazi, 2007). A study of Middle Eastern female EFL students indicated that the students used language learning strategies constantly and consciously (Riazi, 2007). Gender differences have been significantly associated with women's natural social orientation, strong verbal skills, and greater compliance with academic or linguistics norm. Female students were found to use more social and affective strategies due to their biological factors and the behavior of socialization (Zeynali, 2012). Chang et al.'s (2007) study reported findings consistent with those from previous studies. In their study, female Taiwanese students demonstrated significant differences in their social strategies, cognitive strategies, and metacognitive strategies. The gender difference findings concur with the results of previous studies (Green & Oxford, 1995; Kaylani, 1996; Oxford & Ehrman, 1995; Yang, 1992; 1994).

Language learners who have higher proficiency usually use more overall strategies as well as more cognitive, metacognitive, and affective strategies than less proficient learners (Chang et al., 2007; Radwan, 2011). Differences between more and less competent learners have been identified in the series of strategies used and the methods learners apply in the learning tasks. A positive correlation exists between greater confidence and less anxiety among learners with higher levels of language proficiency. This relationship indicates that learning strategies play a role in the results of both achievement and efficiency (Ketabi & Mohammadi, 2012). Iranian researchers discovered that metacognitive strategies were the most repeatedly used among Iranian EFL learners. A study of Iranian EFL learners also revealed that social, affective, and compensation strategies were used more repeatedly than memory and cognitive strategies (Sadighi & Zarafshan, 2006). Another study on EFL writing revealed that metacognitive and cognitive strategies were more frequently used than other strategies (Ketabi & Mohammadi, 2012). Although findings on the use of the learning strategies differed, most study results indicated that a greater use and a more diverse range of use of strategies produced more desirable learning achievements.

The use of learning strategies also correlates with the degree of learners' motivation (Chang & Liu, 2013). Okada, Oxford, and Abo (1996) investigated the relationship of learning motivation and the use of learning strategies. Participants were students with a Japanese or Spanish class. The results revealed that the Japanese group of learners had stronger motivation and also used a larger variety of strategies than the Spanish group of learners.

Another study supported the theory of positive correlation between motivation and learning strategies. Conducted in EFL classes in an elementary school in Taiwan, the study revealed that the students' degree of liking English played a role as an indicator influencing strategies' use (Chang & Liu, 2013). The conclusion of Okada et al.'s (1996) and Chang and Liu's (2013) studies indicated that motivation is the most important factor affecting the choice of learning strategies. Learners with higher levels of motivation applied a variety of strategies more frequently than those with lower levels of motivation.

3. Methodology

Participants in the current study included 82 students enrolled in different majors at Tzu Chi College of Technology. The students were assigned to intermediate level general English courses based on the results of their placement test at the beginning of the semester. The college policy is that all students are required to complete the general English course and the curriculum prepared for the students from beginning, intermediate, and advanced levels, with adaptive content for developing students' general English proficiency in listening, speaking, and reading skills.

This study focused on the intermediate level students to reduce the polarized parameters of extreme highs and lows in participants' performance and motivation, which could occur in advanced and beginning groups. The first procedure of this study was to group the intermediate level participants into two different classes with two different instructors. Second, the participants were introduced to a textbook entitled *Top Notch 1B*, which develops students' language skills in listening, conversation, grammar, and reading. After approximately two months of course sessions, the two intermediate level groups completed a pretest. During the two months prior to the pretest, both classes used the same textbook and completed the same number of lessons in their curriculum. Toward the end of semester, both groups of participants completed a posttest. The pretest and posttest instrument was the GEPT mock reading comprehension test. The GEPT language proficiency test includes the three prevalent levels of most students: beginning, intermediate, and high-intermediate level. The results of the pretest and posttest were then compared with the participants' Strategies Inventory for Language Learning (SILL) survey.

Learners' application of language learning strategies derives from their intrinsic motivation and is positively correlated with learners' psychological needs (Chang & Liu, 2013). From the perspectives of strategies and motivation, the SILL survey depicts learners' potential psychological status in terms of their conscious intention to solve their language learning problems (Chang, Liu, & Lee, 2007). Therefore, the SILL survey was used to evaluate the participants' motivation. The participants' course performance was compared with their use of learning strategies. The assumption of the relationship between learning strategies and motivation is that motivated learners have a greater desire to seek out solutions or support from others and employ more strategies to process the new information (Schmidt & Watanabe, 2001).

4. Data Analysis

The mean score on the pretest for Group A was 5.909 and for Group B was 6.717 (Table 1), indicating that Group B scored higher overall. These mean scores were expected as participants with higher average scores on the placement test were placed in Group B. In other words, participants in Group B had a higher level of language proficiency from the beginning of the investigation. However, participants in Group A showed greater improvement than Group B based on posttest scores: Group A improved from 5.909 to 6.010 while Group B's mean scores dropped from 6.717 to 6.498.

Table 1. Results of the Pretest and Posttest in Groups A & B

Test	Group	Participants/Total number of groups	M	SD
Pretest	A	43/48	5.909	1.563
	B	39/39	6.717	1.184
	Total	82	6.292	1.446
Posttest	A	43	6.100	1.358
	B	39	6.498	1.176
	Total	82	6.289	1.283

As for the analysis of the participants' learning strategies, Table 2 shows the mean scores and the standard deviations of their application of learning strategies.

Table 2. Mean Scores of the Six Learning Strategies

		Memory Strategy	Cognitive Strategy	Compensation Strategy	Metacognitive Strategy	Affective Strategy	Social Strategy
A	M	3.1680	3.2625	3.1783	3.1525	3.0814	3.1008
Group	SD	.7364	.5773	.7955	.7501	.7879	.7699
B	M	3.2422	3.1960	3.4402	3.2963	3.0726	3.1709
Group	SD	.6583	.6754	.6993	.7411	.7373	.6856
Total	M	3.2033	3.2308	3.3028	3.2209	3.0772	3.1341
	SD	.6970	.6228	.7582	.7447	.7596	.7274

To further identify the significant differences, a *t*-test independent sample analysis was used. The participants were divided into two independent samples: lower scores versus higher scores on pretests and posttests, using the mid value 0.5 as the criterion. The analysis looked for significant relationships between participants' scores and their use of the learning strategies. Tables 3, 4, 5, and 6 show the results of the independent *t*-test analysis. Based on the results, Group A showed a significant difference in using the memory strategy.

Table 3. Group A Pretest

		Numbers	Mean	SD	*t*-Value
Memory Strategy	Lower Scores	12	3.3889	.5927	1.232
	Higher Scores	31	3.0824	.7767	
Cognitive Strategy	Lower Scores	12	3.2262	.5086	-.253
	Higher Scores	31	3.2765	.6091	
Compensation Strategy	Lower Scores	12	3.1389	.7972	-.200
	Higher Scores	31	3.1935	.8075	
Meta-cognitive strategy	Lower Scores	12	3.1296	.7489	-.123
	Higher Scores	31	3.1613	.7627	
Affective strategy	Lower Scores	12	3.1250	.4981	.223
	Higher Scores	31	3.0645	.8816	
Social strategy	Lower Scores	12	3.0139	.7536	-.456
	Higher Scores	31	3.1344	.7858	

Table 4. Group A Posttest

		Numbers	Mean	SD	*t*-Value
Memory Strategy	Lower Scores	9	3.6543	.7380	2.345*
	Higher Scores	34	3.0392	.6903	
Cognitive Strategy	Lower Scores	9	3.3810	.6934	.688
	Higher Scores	34	3.2311	.5502	
Compensation Strategy	Lower Scores	9	3.2407	.9614	.262
	Higher Scores	34	3.1618	.7615	

Metacognitive Strategy	Lower Scores	9	3.4321	.9204	1.267
	Higher Scores	34	3.0784	.6955	
Affective Strategy	Lower Scores	9	3.5000	.7407	1.843
	Higher Scores	34	2.9706	.7725	
Social Strategy	Lower Scores	9	3.0741	.9171	-.116
	Higher Scores	31	3.1344	.7858	

Table 5. Group B Pretest

		Numbers	Mean	SD	*t*-Value
Memory Strategy	Lower Scores	3	3.2963	.4491	.146
	Higher Scores	36	3.2377	.6772	
Cognitive Strategy	Lower Scores	3	3.2143	.5000	.048
	Higher Scores	36	3.1944	.6935	
Compensation Strategy	Lower Scores	3	3.5556	.3469	.294
	Higher Scores	36	3.4306	.7231	
Meta-cognitive Strategy	Lower Scores	3	2.7778	.8819	-1.271
	Higher Scores	36	3.3395	.7259	
Affective Strategy	Lower Scores	3	2.7222	1.4938	-.854
	Higher Scores	36	3.1019	.6717	
Social Strategy	Lower Scores	3	2.7222	.9179	-1.186
	Higher Scores	36	3.2083	.6659	

Table 6. Group B Posttest

		Numbers	Mean	SD	*t*-Value
Memory Strategy	Lower Scores	6	2.7963	.9646	-1.861
	Higher Scores	33	3.3232	.5702	
Cognitive Strategy	Lower Scores	6	2.7262	.7360	-1.916
	Higher Scores	33	3.2814	.6389	
Compensation Strategy	Lower Scores	6	3.1667	.8367	-1.043
	Higher Scores	33	3.4899	.6744	
Meta-cognitive Strategy	Lower Scores	6	2.9815	.9924	-1.135
	Higher Scores	33	3.3535	.6902	
Affective Strategy	Lower Scores	6	2.8056	.6093	-.964
	Higher Scores	33	3.1212	.7561	
Social Strategy	Lower Scores	6	2.8611	.7182	-1.211
	Higher Scores	33	3.2273	.6755	

5. Conclusion

This investigation found that the lower achievement group showed a significant difference in terms of using the memory strategy while the higher performance group did not demonstrate any significant differences on the independent sample *t*-test analysis. Group A was considered a slightly lower achievement group at the beginning of the study. However, their posttest mean scores showed greater improvement. This could be the result of the test-oriented curriculum design, which facilitates the memory strategy for participants in Group A. Moreover, the methods of testing focused on vocabulary and grammatical skills, which might require a tremendous amount of time to memorize. Based on Schmitt's (1997) work, the memory strategy is used to link the learning of the new words in learners' cognitive processes by connecting their existing or background knowledge with the new words. Furthermore, the students could also become accustomed to traditional learning methods when dealing with a test-oriented curriculum. Memorization and recitation have been practiced by Chinese EFL learners for coping with vocabulary or grammar test questions (Yang & Dai, 2011). Oxford

(1990) described the memory strategy as a strategy used to enter the information into long-term memory and retrieve information for imminent communication. It should also be noted that participants in Group A started with a lower level of achievement, suggesting that they might not have been aware of other strategies to help them cope with the information. The significant difference found in memory strategies in Group A could also indicate their strong motivation for getting higher scores in a course designed with heavy vocabulary-related tasks. This stronger motivation could have influenced the mean scores results of Group A, whose progress surpassed that of Group B on the posttest.

At the beginning of the study, Group B was considered the higher achievement group. Participants in this group might be used to practicing various learning strategies when processing newly learned information. This could explain why no significant difference existed in any strategy shown in the analysis. The frequency of using strategies was evenly distributed in their mean scores. This phenomenon could be explained by the idea that higher-performing learners might not have favored any particular strategy in this investigation.

Additional reasons for not finding significant differences among social and affective strategies could be that most students were shy and reserved in the class, based on the instructor's observations. Moreover, the English class was a general required course in the students' curriculum; as a result, students came from nursing, marketing, information technology management, and radiology science departments, which could have caused a certain unfamiliar environment for the students in the class.

Further investigation in the next study will focus on the role of the instructor as a facilitator. The instructor could learn students' interests, characteristics, and learning styles by observing students' behavior patterns in class. The instructor could then introduce or incorporate the language learning strategies into the learning content. Certain strategies could work well for specific learning objectives. For instance, social or affective strategies could assist students in coping with dialogue or listening drills. The metacognitive strategy could help students plan their learning, guiding them in selecting useful strategies, monitoring strategies, and coordinating various strategies. The cognitive strategy could help students solve problems by summarizing the meaning, guessing the meaning from the context, organizing new language, and managing the linguistic structure through repetitive exercises.

Each learner has different learning styles and varied awareness of the use of such strategies. Language instructors should provide a wide range of learning strategies to fulfill the needs of learners with different learning styles because every learner processes information in different ways and possesses different learning goals and motivations.

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