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Research paper



The Relationships Among Language Learning Strategy, Motivation, Anxiety and Autonomy in Chinese EFL Learners

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Abstract

This study attempted to explore the relationships among language learning strategy, motivation, anxiety and learner autonomy. Cluster sampling method was adopted to select 600 non-English major students as subjects at three universities in Henan province, China. Quantitative data collected from questionnaires was analyzed by SPSS 19.0. Results from Pearson correlation analysis showed that among the three investigated variables, language learning strategy and motivation had a significant positive relationship with learner autonomy in a decreasing order, but anxiety was significantly and negatively correlated with learner autonomy. Results from multiple regression analysis indicated that learning strategy could best significantly predict the variance of learner autonomy, followed by motivation and anxiety. The findings would make suggestions to university policy-makers, English language lecturers, and learners on the implementation of autonomous English language learning.

Keywords: *learner autonomy; strategy; motivation; anxiety*

1. Introduction

Owing to Internet and communication technology have developed at unprecedented speed in the twenty-first century, many countries set up the long-term educational goal to promote students' autonomy, thus learner autonomy has been extensively studied in tertiary education field (1) To keep up with the times, Chinese universities began to take reforms in English language education to cultivate students' ability to utilize English in an all-rounded way through the use of advanced information technology(2). Meanwhile, more and more English teachers have realized the urgency of promoting learner autonomy and actually do it in their teaching practice through various programs(3). Still, students in many universities have weak autonomous learning ability and rely heavily on their teachers, because the promotion of learner autonomy involves many socio-environmental factors and learners' personal factors, among which the latter are the most direct and important ones (4). Learners' personal factors can be further divided into uncontrollable and controllable variables (5). The former refer to those inherent ones, including age, gender, and family background; while the latter are variables that can be influenced by one's own hard work, consisting of learning strategy, motivation, and anxiety.

Early researchers mainly focused on uncontrollable variables in second language acquisition (6). Nevertheless, the controllable variables are the key issues in the development of learner autonomy because autonomy relates strongly to learners' psychological activities (7). In recent years, an increasing number of researchers have explored the correlation between controllable variables and learner autonomy(4), among which language learning strategy, motivation, and anxiety are discussed most. However, there are relatively few studies investigated the role of all these three variables in autonomy simultaneously in Chinese EFL learning context. By exploring the interrelationships between learning strategy, motivation, anxiety and learner autonomy, this study tries to offer a deeper understanding of the influence of the factors on learner autonomy. The findings and implications in this study may help university policy-makers, EFL lecturers, and learners bear in mind that those factors can play the significant predictive role in the promotion of learner autonomy.

2. Literature Review

The phenomenon that some learners can learn a language quite well in a short period, but some learners have great trouble in language acquisition can be contributed to language learning strategy (8). However, what does the term "learning strategy" exactly mean? Oxford (9)defined language learning strategy as "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p.8). These strategies can be further classified into direct ones and indirect one. The former can be subcategorized into "memory, cognitive, and compensation strategy", while the latter subdivided into "metacognitive, affective, and social strategy". Language learning strategies can help learners "internalize, store, retrieve, or use the new language" (9). Results from many studies indicated that learning strategy had a close relationship with learner autonomy. The study of Nosratinia et al(10) showed that learner autonomy was significantly correlated with vocabulary learning strategies. Xu and Li (4)) found that meta-cognitive strategy could best significantly predict the variance of learner autonomy. Using Structural Equation Model, Tan and Zhang (11) discovered the significant positive correlation between learning strategy and learner autonomy. The findings of Abdipoor's (12)study revealed that autonomous learners utilized more metacognitive strategies, while non-autonomous learners tended to use more social strategies. Though researchers agreed

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that learning strategy was closely related to learner autonomy, their findings were not always consistent with each other.

No one can deny the necessity of motivation in second/foreign language acquisition, because learners' motivation determines his/her degree of effort to learn a foreign language (13). Motivation is "the dynamically changing cumulative arousal in a person that initiates, directs, coordinates, amplifies, terminates, and evaluates the cognitive and motor processes whereby initial wishes and desires are selected, prioritized, operationalized and (successfully or unsuccessfully) acted out" (Dornyei & Otto, 1998, p. 65). So far, three different voices have existed on the relationship between motivation and learner autonomy. The first point was that intrinsic motivation was generated and promoted in autonomous learning environment (14). Similarly, Dörnyei and Csizer (15) stated that stronger autonomy led to stronger motivation. However, Spratt et al. (16) claimed that motivation came before autonomy, and weak motivation would hinder students' autonomous participation in learning activities. Different from the above two voices, results from considerable empirical studies showed that motivation was closely associated with autonomy. Li and Yu's (17) study revealed that learners' intrinsic and extrinsic motivations were significantly correlated with their autonomous learning behaviors. Conducting an empirical study, Ni (18)found that both instrumental and integrative motivations had a positive significant relationship with learner autonomy. Results from Teng and Xu's (19) study indicated that all types of motivations except profession-oriented motivation had a positive significant relationship of learner autonomy. In summary, the relationship between autonomy and motivation has been mainly discussed theoretically, so more empirical studies are needed to further explore this relationship.

Anxiety can influence language learning process because anxious learners are more likely to have "self-directed, derogatory cognition rather than focusing on the task itself". According to MacIntyre and Gardner's (20) definition, language anxiety was "the feeling of unease, worry, nervousness and apprehension experienced when learning or using a second or foreign language" (p. 284). The anxieties in language learning process were subdivided into three categories "communication apprehension, test anxiety and fear of negative evaluation" (21). Up to now, many researchers have tried to explore the correlation between learning anxiety and learner autonomy, but some of their findings are contradictory to each other. For example, Duxbury and Tsai (22)stated that U.S. university learners' English learning anxiety was not significantly correlated with their cooperative learning, but results from Smith and Schroth's (23)study showed that language learning anxiety was negatively related to learner autonomy. Though many researchers agreed that language learning anxiety was detrimental to foreign language learning, Wei (24)found that learning anxiety could help to promote learner autonomy when influenced by performance-oriented goals.

The relationships among language learning strategy, motivation, anxiety and learner autonomy have been studied by many researchers. However, those studies often center on one or two aspects, never focusing on the relationship between all the above three variables and learner autonomy at the same time. In autonomous learning process, all these factors do exist and affect learner autonomy simultaneously. This empirical study attempts to fill in this gap through two research objectives: 1) to explore the relationships among language learning strategy, motivation, anxiety and learner autonomy; 2) to determine the best predictor in learner autonomy among the three variables: learning strategy, motivation, and anxiety.

3. Methodology

3.1. Research Questions

1) Are there any significant relationships among language learning strategy, motivation, anxiety and learner autonomy?

2) Which one can predict learner autonomy best among the three variables: language learning strategy, motivation, anxiety?

3.2. Research Subjects

For the investigation of the relationships among learning strategy, motivation, anxiety and learner autonomy, the researcher adopted cluster sampling method to select 600 non-English major students as subjects from three universities in Henan province, China. After deleting 30 invalid cases, there were 570 cases left. The features of the sample took part in this survey were as follows. There were 257males and 313 females, 291 freshmen and 279 sophomores.

3.3. Research Instruments

This study adopted two set of questionnaires as the research instrument, because questionnaires could save time, money and manpower compared to other research approaches like field study; get real information owing to subjects' anonymity; and generate a great deal of quantitative data within a short period of time (25). Questionnaire one was Learners' Personal Factors in Learner Autonomy (LPFLA) questionnaire, which included three parts. The first part was language learning strategy, adapted from Oxford's (9)Strategy Inventory for Language Learning (SILL). It was subcategorized into six factors "memory, cognitive, compensation, metacognitive, affective, and social strategy". The researcher modified the items according to two language teaching professors' advice and made them into a 30-item questionnaire for EFL Chinese learning context. Cronbach alpha was employed to ensure the reliability and internal consistency of this part, the coefficient of which was .905. The second part was language learning motivation, adapted from Gao et al.'s (26)English language learning motivation (ELLM) questionnaire, consisting of seven subcategories "intrinsic interest motivation, immediate achievement motivation, situation motivation, going abroad motivation, social responsibility motivation, individual development motivation, and information media motivation". The researcher made some necessary changes and got a 25-item questionnaire for EFL Chinese learning context. The reliability and internal consistency of this part, adopting Cronbach alpha, was .827. The last part was language learning anxiety, adapted from Horwitz's (1986) Foreign Language Classroom Anxiety Scale (FLCAS). It was further classified into three subcategories "communicative apprehension, test anxiety and fear of negative evaluation". The researcher made some amendments and finally a 20-item questionnaire was obtained for EFL Chinese learning context. The reliability and internal consistency of this part, using Cronbach alpha to test it, was .860.

Questionnaire two was Learner Autonomy Questionnaire (LAQ) adapted from Xu et al.(4) for investigating students' learning autonomy, including two parts. Part one was designed for collecting the subjects' demographic information, including their gender, grade, and name of universities. Part two was designed to collect quantitative data on students' learning autonomy. The 25-item questionnaire was divided into three subcategories: learning objectives and study plans, using learning strategies, monitoring and evaluating learning process. The Cronbach alpha coefficient of this part was .890, indicating that it had good reliability and internal consistency.

Cronbach alpha coefficient of the above four parts ranged from .827 to .905, preferable for further survey, because the ideal Cronbach alpha coefficient of a scale was above 0.700 (27). The questionnaires in this study adopted the five-point Likert scale, the use of which can free the participants from immense work and make them focus on the research, and the unbalanced five-point Likert scale was regarded as the most preferable tool of level measurement in educational research. Respondents in the present study were required to circle their options on various statements, which were represented by a five-point Likert scale, which ranged

from "1: strongly disagree", "2: disagree", "3: no comment", "4: agree", and "5: strongly agree".

3.4. Data Analysis

Data generated from survey was analyzed by SPSS Version 19.0. Pearson correlation coefficient was adopted to analyze the relationships among students' language learning strategy, motivation, anxiety and learner autonomy. Multiple regression analysis was employed for determining the best predictor among the following three variables: language learning strategy, motivation, and anxiety.

4. Results and Findings

Before Pearson correlation in SPSS Version 19.0 was conducted, assumptions test was performed to check the normality, linearity, and homoscedasticity of the collected data. Each variable's normality was tested by Kolmogorov-Smirnov, and the results showed that the variables' distribution was normal (p>.05). In addition, the correlations between the variables were linear, and the variability in scores for the variables was similar. Therefore, the preliminary analyses showed that the assumptions were not violated.

The results in Table 1 showed that a medium positive relationship existed between learning strategy and learner autonomy (.444). In addition, learner autonomy had a significant positive relationship with all categories of language learning strategy in a decreasing order, including metacognitive (.379**), cognitive (.356**), social (.342**), affective (.340**), memory (.332**), and compensation strategies (.305**).

Table 1: Pearson Correlations between Learning Strategy and Learner Autonomy

	Learning Strategy	Metacognitive Strategy	Cognitive Strategy	Social Strategy	Affective Strategy	Memory Strategy	Compensation Strategy
Learner Autonomy	.444**	.379**	.356**	.342**	.340**	.332**	.305**
Sig (2-tailed)	.000	.000	.000	.000	.000	.000	.000
N	570	570	570	570	570	570	570

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

The results that learning strategy and learner autonomy are positively correlated with each other indicate that the effective use of learning strategy is the guarantee of implementing autonomous learning to university English language education. Among different learning strategies, the results that metacognitive strategies had the highest significant relationship with learner autonomy were consistent with the studies of Ni (18) Xu and Li (4), suggesting that metacognitive strategy which involved language learning plan, self-monitor, and learning evaluation had the greatest influence on learner autonomy. However, this statement differs slightly with the results of the following two studies. Nosratinia et al.'s (10) study showed that social strategy and the memory strategy were the two best predictors of learner autonomy. Results from Pan's (2) study showed that compensation and cognitive strategy were the most influencing factors in the promotion of learner autonomy, while affective strategies were the least influential factors.

The results in Table 2 revealed that learning motivation was positively correlated with learner autonomy (.368). Moreover, learner autonomy had a significant positive relationship with intrinsic interest motivation (.465**), information media motivation (.365**), going abroad motivation (.337**), individual development motivation (.286**), social responsibility motivation (.246**) in a decreasing order, but had a significant negative relationship with immediate achievement motivation (-.147**) and no significant relationship with learning situation motivation (.051).

Table 2: Pearson Correlations between Learning Motivation and Learner Autonomy

	Learning Motivation	Intrinsic Interest	Information Media	Going Abroad	Individual Development	Social Responsibility	Immediate Achievement	Learning Situation
Learner Autonomy	.368**	.465**	.365**	.337**	.286**	.246**	-.147**	.051
Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.227
N	570	570	570	570	570	570	570	570

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

The results of this study have verified the hypothesis proposed by Dörnyei and Csizer (28) that motivation had a close relationship with learner autonomy. The findings that the relationship between intrinsic interest motivation and learner autonomy was the most significant were in line with the study of Wang and Xu(29), showing that students who are fascinated to a foreign language and its culture will be more autonomous in acquiring this language. Thus, it is suggested that language lecturers should adopt various teaching methods to arouse students' interests in learning English language, which will make them actively and consciously set up learning objectives, determine learning content, use learning strategies, and evaluate learning process. It was surprised to find that immediate achievement motivation had a significant negative relationship with learner autonomy, which echoed with the study of Xu and Li(4). This indicates that in the exam-oriented context, learners often pay too much attention to their academic achievements, which is surely detrimental to the promotion of learner autonomy.

The results in Table 3 indicated that language learning anxiety was negatively associated with learner autonomy (-.309). Additionally, learner autonomy had a significant negative relationship with all categories of learning anxiety, among which communicative apprehension (-.284**) was the highest, test anxiety (-.276**), the middle, and fear of negative evaluation (-.252**), the smallest.

Table 3: Pearson Correlations between Learning Anxiety and Learner Autonomy

	Learning Anxiety	Communicative Apprehension	Test Anxiety	Fear of Negative Evaluation
Learner Autonomy	-.309**	-.284**	-.276**	-.252**
Sig (2-tailed)	.000	.000	.000	.000
N	570	570	570	570

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

Many researchers agreed that language learning anxiety was detrimental to foreign language learning, but some previous studies had the conflicting results. Results from Zhao's (30) study showed that no significant relationship existed between foreign language performance and two kinds of foreign language anxiety, i.e., "communication apprehension and fear of negative evaluation", but it was negatively correlated with test anxiety. The results of this study were supported by Liu's (31) emprical study in that learning anxiety had a negative relationship with learner autonomy. The results that communication apprehension was most significantly and negatively with learner autonomy echoed with Xu and Li's i(4) study, showing that in the Chinese speaking context,

students are very anxious when communicating with others in English. As a result, language lecturers should focus on language learners' emotions and try to help them overcome those language learning anxieties.

To further explore the relationships among language learning strategy, motivation, anxiety and learner autonomy, multiple regression analysis was adopted to explore which factors can be the best predictor in the variance of learner autonomy. Assumptions test was performed to check the muticollinearity, outliers, normality, and homoscedasticity of the collected data. According to Pallant (27), Tolerance is "an indicator of how much of the variability of the specified independent variable is not explained by the other independent variables in the model" (p. 164). The small Tolerance value (less than .10) indicates the possibility of muticollinearity. VIF (Variance inflation factor) is "the inverse of the Tolerance value", whose big value (above 10) suggests the possibility of muticollinearity (27). From Table 4, it can be seen that all the values of tolerance were more than .10, and all the values of VIF were between 1.00-2.00, much less than 10. As a result, there was no possibility of muticollinearity.

From the Normal P-P Plot (Fig.1), it can be seen that most points were in a straight line from bottom left to top right, suggesting that the points distribute normally. In the Scatterplot (Fig. 2), it can be found that most scores range from -3.3 to +3.3, only a few scattering out of that range. Outliers were "cases that have a standardized residual of more than 3.3, or less than -3.3". Therefore, the preliminary analysis showed that the assumptions were not violated.

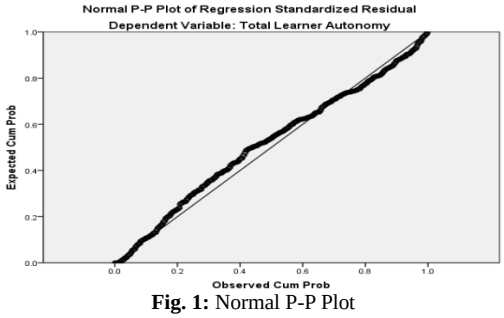

Fig. 1: Normal P-P Plot

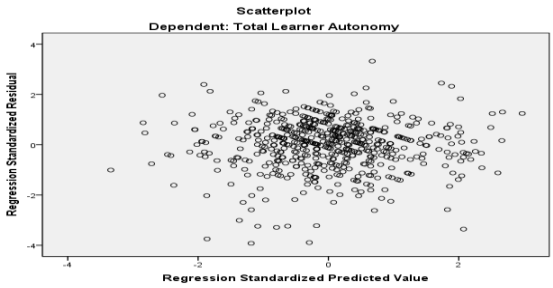

Fig. 2: Scatterplot

From Table 4, it can be known that language learning strategy (R= .444, R^2 = .198) explained 19.8% of the variance in learner autonomy. The predictive power was then increased to 25.6% (R= .506, R^2 = .256) by language learning motivation. All the three predictors could explain 31.6% of the variance in learner autonomy in the third model (R= .562, R^2 = .316). The biggest Beta value of language learning strategy (Beta=.361) indicated that it could best predict the variance of learner autonomy, followed by language learning motivation (Beta=.281) and language learning anxiety (Beta= -.245), as shown in Table 4. In addition, the results of the ANOVA test of significance (F (570) =670.790, P= .000 < .01) in the first regression model, (F (570) = 97.538, P= .000 < .01) in the second regression model, and (F (570) =86.951, P= .000 < .01) in the third regression model indicated that learning strategy, motivation, and anxiety were the significant predictors of learner autonomy.

Table 4: Model Summery

Model	Predictors (Constant)	B	Std. Error	Beta	T	Tolerance	VIF	*P*
1	Learning Strategy	.934	.079	.444	11.814	1.000	3.190	.000
2	Learning strategy	.774	.080	.368	9.694	.910	2.524	.000
	Learning Motivation	.624	.093	.254	6.689	.905	2.322	.003
3	Learning strategy	.759	.077	.361	9.895	.909	2.364	.000
	Learning Motivation	.691	.090	.281	7.674	.900	1.856	.000
	Learning Anxiety	-.478	068	-.245	-7.012	.989	1.381	.002

a. Dependent Variable: Learner Autonomy

1. R= .444, R^2= .198; Adjusted R^2= .196; F=670.790; *P*=.000
2. R= .506, R^2= .256; Adjusted R^2= .254; F=97.538; *P*=.000
3. R= .562, R^2= .316; Adjusted R^2= .312; F=86.951; *P*=.000

The results of multiple regression analysis echoed with Xu and Li's i(4) finding that language learning strategy could best predict the variance of learner autonomy among the following variables: learning strategy, motivation, self-efficacy, goal orientation, and attribution. Similar results were found in Shang and Kou (1) study that metacognitive strategy could predict learner autonomy best, followed by cognitive strategy.

5. Conclusion

This study attempts to explore the relationships among language learning strategy, motivation, anxiety, and learner autonomy. The research findings showed that learner autonomy was significantly and positively correlated with all categories of learning strategy in a decreasing order, including metacognitive, cognitive, social, affective, memory, and compensation strategy. Besides, intrinsic interest motivation had the most significant positive relationship with learner autonomy, followed by information media, going abroad, individual development, social responsibility motivation, while immediate achievement motivation had a significant negative relationship with learner autonomy. Moreover, learner autonomy was significantly and negatively correlated with all categories of learning anxiety, among which communicative apprehension was the highest, test anxiety, the middle, and fear of negative evaluation, the smallest. To conclude, among the three investigated variables, learning strategy and motivation had a significant positive relationship with learner autonomy, but anxiety was significantly and negatively correlated with learner autonomy. The results of multiple regression analysis revealed that learning strategy could best predict the variance in learner autonomy, followed by motivation and anxiety.

Some important implications can be obtained from the findings of this study. First, it is very urgent for both EFL learners and lecturers to acknowledge the necessity of training students' learning strategies for promoting their autonomy. For language lecturers, they can introduce some strategic knowledge to their students first and then cultivate their ability to use learning strategies through various learning assignments. For language learners, they should master some knowledge of learning strategies and attempt to utilize them in their language learning process. Second, language lecturers can organize some group activities like workshops, English club, TV viewing, and English corner to arouse students' intrinsic interest motivation to promote learner autonomy. Intrinsic

interest motivation determines learners' efforts in study and enthusiasm in participating activities. The stronger intrinsic interest motivation learners have, the more active they will participate into various autonomous language learning activities. Finally, language lecturers must acknowledge the side effect of different anxieties in foreign language acquisition and try to reduce them in students' language input, processing and output. Many factors can provoke language learning anxieties in students, including their prior academic performance, fear of failing in the tests, and afraid of speaking a foreign language in public. As a result, it is of great necessity for language lecturers to help their students successfully overcome language learning anxiety and have more genuine interest in learning English.

However, there are still some limitations. First, the sample cases only cover a small number of students in three universities in Henan province, China, thus the findings are confined to those universities only. Second, other factors affecting learner autonomy like self-efficacy, attribution, and learning environment are not discussed here. Another limitation of this study is that it has adopted the quantitative method. However, the qualitative method like conducting interview with language lecturers and students can offer some new insights. Mixed method of qualitative and quantitative should be adopted to explore and expend the findings by identifying new more factors affecting learner autonomy.

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