Factors Influencing Foreign Students' Learning Effect in China: a Comparison Between Oral and Written Chinese

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Abstract—**This paper systematically summarizes the factors influencing foreign students' Chinese learning effect at a university in Guangzhou. Structural Equation Model is constructed to compare the differences of influencing factors between oral Chinese and written Chinese learning. Results show that: study basis, study desire, learning environment, family environment can effectively promote oral and written Chinese learning effect; the living environment can effectively promotes oral Chinese learning, but has counterproductive effect on written Chinese learning.**

Keywords—learning basis; learning desire; oral Chinese; written Chinese; learning effect

I. INTRODUCTION

Among the factors that influence foreign students' Chinese learning effect, learners' internal factors cannot be ignored, such as achievement motivation, cultural identity attitude, and responsibility and learning desire. It also includes external factors, such as learning situation, teachers, parents etc.

As far as internal factors are concerned, personality, emotion, negative transfer of mother tongue etc. have an impact on foreign students' Chinese learning (Sakai & Kikuchi, 2009; Kikuchi & Sakai, 2009). First, personality: extroverted learners like to socialize and have more opportunities to practice their oral Chinese. While introverted learners are willing to spend more time on reading and writing, and develop cognitive academic language. Second, emotion: according to the social psychology and social pedagogy theory of second language acquisition, learning attitude and motivation are closely related to learning achievement and language level. Learning attitude mainly depends on students' sense of responsibility. The more they accept these, the more their cultural recognition. Third, mother tongue: foreign students from Asian countries have a high degree of cultural convergence in China and can quickly adapt to the learning mode of Chinese classes. Fourth, learning desire: students who want to continue to deal with Chinese in the future are more likely to take Chinese learning seriously, while those who only consider studying in China as an experience and do not expect to work or study in the future will pay less.

As to the external factors, factors such as teachers, teaching modes and curriculum settings directly may affect students' achievements in Chinese learning. Cultural backgrounds, textbooks and teaching environment may affect their academic achievement indirectly through the influence of learning motivation (Falout & Maruyama, 2004; Kojima, 2004). First, classroom and teaching: teachers' teaching level, including teaching ability and personal charm, is an important factor, which directly influences the students' affection on their class and learning effect. Second, the attendance system has the urging effect on students' learning in the classroom. Absence of attendance management and punishment measures, students often choose absenteeism. Those students have more difficulties in obtaining good academic results. Thirdly, the scholarship system also has the external stimulation function. According to the Ministry of Education, the number of foreign students who received Chinese government scholarships in 2015 accounted for 10.21%, increased by 9.9%. This measure played a significant role in stimulating the students from the neighboring countries. Forth, social intercourse: the more participation in social practice, the more practice opportunities, the more language input, so that the more opportunities of communication successfully. Fifth, family background: Sirin (2005) shows that family socioeconomic status (SES) has positive correlation with students' academic performance in general. The more the family income is, the better students' academic results will be. Moreover, parents' education level has the same effect. Sixth, family relations: in families with low affinity and conflicting conflicts, students tend to have more behavioral problems such as hyperactivity, attack, discipline, withdrawal and socializing, then it indirectly affect their learning achievement.

This paper attempts to induce several internal and external factors by factor analysis. Then, the structural equation model (SEM) is applied to analyze influencing factors on the oral and written Chinese learning, and compare the differences. This paper aims to provide a systematic sense for the improvement of students' Chinese learning effect from teaching institutions, families, learners themselves and other related subjects.

II. DATA AND VARIABLES

A. Data Sources

The data came from the questionnaire survey and interview, and the respondents were the foreign students of Chinese international education major at a university in Guangzhou from 2010 to 2013 for four consecutive years. According to statistics results, a total of 318 questionnaires were collected, of which 279 were valid and the effective rate was 87.74%. The number of valid questionnaires per session was 58, 82, 86 and 53. The survey was conducted from June 2013 to February 2017.

B. Variables Selection

In this paper, the average scores of Chinese language courses obtained by foreign students during the study period were taken to reflect the Chinese learning effect. The courses were divided into oral and written courses, and oral courses include "Elementary oral Chinese" and "Intermediate oral Chinese". Written language courses mainly include "Elementary Chinese", "Chinese Characters", "Intermediate Chinese", "Advanced Chinese", "Writing", "Business Chinese" and "Scientific Chinese".

14 main influencing factors were selected as the research indicators and named, explained and measured, as shown in "Table I":

TABLE I.   INDEX EVALUATION SYSTEM OF INFLUENCING FACTORS

Variables	Variables interpretation and measurement	Methods statement
Continent	Students from Asia, Europe and the United States, other countries and regions were assigned 3, 2 and 1 points respectively	Score
Character	Virtual variable: extroversion, assignment 1; Introverted, assigned a value of 0	0-1 assignment
Proficiency in Chinese	No HSK certificate, assigned value 0; Levels 1 to 6 are assigned 1, 2, 3, 4, 5, and 6 respectively	Score
Learning attitude	Comprehensive evaluation on attendance, class motivation and homework completion: "responsibility" is awarded 5, 4, 3, 2 and 1 points respectively according to the degree of decline	Likert five-point scale
Cultural identity	According to the comprehensive consideration of foreign students' acceptance of China's history, culture, language, customs and other aspects, "recognition degree" ranges from deep to shallow, giving 5, 4, 3, 2 and 1 points respectively	Likert five-point scale
Career aspirations	Hope for the future: further study and work in China, awarded 3; return to their home countries to work in Chinese multinational companies, work in other institutions within Chinese language, with 2; engage in other work or study, assign 1	Score
Scholarship	obtain: Chinese government scholarship, awarded 3; Confucius institute scholarship, awarded 2; otherwise, assign 1	Score
Teachers' level	The average score of students on teaching evaluation at the end of term	
Attendance	Total number of class attendance/total number of class attendance	
Social practice	The number of days to participate in social practice activities in the Chinese working environment	
Number of friends from other countries	The number of close non-native classmates and friends	
Per capital disposable income	The sum of annual household income/total number of households	
Parents' education levels	According to the actual time of parents' receiving education, assignment: illiteracy or semi-illiteracy =0; Primary school = 6; Junior high school = 9; High school/senior/technical secondary school =12; Subject = 15; Undergraduate = 16; Master's degree =19; PhD students =23. Then take the average	
Family relationships	The degree of harmony among members of a family: "intimacy" is assigned a score of 5, 4, 3, 2, 1 in descending order	Likert five-point scale
Learning effect of oral Chinese(E_1)	$\sum_{i=1}^{n} c_i s_i \big/ C$. Where, c_i is the credit corresponding to the i course, s_i is the total score of the course corresponding to the i course, and C is the total number of credits.	General weighted average
Learning effect of written Chinese(E_2)		

III. FACTOR ANALYSIS

In SPSS17.0 software, data reliability and validity were tested. The reliability analysis score was 0.901. It indicates that questionnaire data was reliable. Meanwhile, KMO and Bartlett tests were conducted, and the validity score was 0.814. It shows that the data were suitable for factor analysis. Subsequently, the index data set in Table 1 was standardized, and the iterative multi-wheel exploratory factor analysis was carried out, and the factor loading values of all indicators were all greater than 0.65. It means that all the selected indicators were effective. Then, oblique rotation was carried out on the indicators and principal component analysis. As a result, it was found that a total of 5 factors were extracted. Their characteristic values were all greater than 1, and the cumulative variance contribution rate was 82.097%, which indicates that these 5 factors could summarize the meaning of the selected indicators well. Finally, the reliability of these 5 factors was further tested, and the Cronbach's α values were all greater than 0.7, indicating that the extracted factors have better quality. According to the characteristics of variables, the extracted factors were respectively named

Learning Basis (ξ_1), Learning Desire (ξ_2), Learning Environment (η_1), Living Environment (η_2) and Family Environment (η_3).

IV. STRUCTURAL EQUATION ANALYSIS

A. Model and Output Results

According to the above research hypothesis, the structural equation model was constructed in AMOS software. Maximum likelihood estimation (ML) was carried out for the co-variance matrix of data of latent variables and observed variables in "Table I", and relatively ideal fitting indicators were obtained, as shown in "Table II".

TABLE II. GOODNESS OF FIT INDEX

Fit indicators	p	CMIN/DF	GFI	RMR	RMSEA	AGFI	NFI	CFI	IFI
Value	0.807	0.880	0.990	0.350	0.000	0.956	0.991	1.000	1.002

Then, the relationship among latent variables in the output results of path coefficient was sorted out, as shown in "Table III".

TABLE III. PATH COEFFICIENT RELATIONS OF LATENT VARIABLES AND TEST RESULTS

Affected variables	Latent variables	Standardized estimates	Standard error	C.R. value	P value	Inspection results
E_1	ξ_1	0.632	0.100	5.114	***	accepted
E_1	ξ_2	0.659	0.172	5.778	***	accepted
E_1	η_1	0.237	0.115	2.356	0.039(*)	accepted
E_1	η_2	0.227	0.121	2.059	0.045(*)	accepted
E_1	η_3	0.306	0.087	2.505	0.014(*)	accepted
E_2	ξ_1	0.451	0.184	3.667	0.001(**)	accepted
E_2	ξ_2	0.785	0.103	7.721	***	accepted
E_2	η_1	0.381	0.218	2.848	0.007(**)	accepted
E_2	η_2	-0.198	0.202	-1.994	0.047(*)	Not accepted
E_2	η_3	0.401	0.095	3.293	0.002(**)	accepted

[a.] Note: *, ** and *** respectively represent model regression results are statistically significant at the levels of P<0.05, P<0.01, and P<0.001.

B. Result Analysis

"Table III" shows that the empirical test does not accept hypothesis H42, but accept 9 other hypotheses.

1) The influence of learning basis on Chinese learning effect: First, foreign students' learning basis has a significant positive effect on both oral and written Chinese learning. This shows that students from Asia, have the best Chinese learning effect, followed by the European and American students, and other countries or regions. Because of the similarity of culture and the small difference of language system, students from Asia are more apt to integrate into Chinese learning atmosphere and grasp the knowledge of Chinese, so they have better learning effect than those from Europe, America and Africa. The higher their HSK level, the better the learning effect. Students with a higher level of HSK have more advantages in the first, or in a ring of learning. Second, the Effect of learning basis on oral Chinese is stronger than that on written Chinese. It interprets that the students with good learning basis have a greater advantage in oral Chinese, which may be due to the more opportunities to practice speaking.

2) The influence of learning desire on Chinese learning effect: First, learning desire has a significant positive effect on the learning effects of both oral and written Chinese. This shows that in Chinese learning, those students of outgoing personality or strong sense of responsibility or love Chinese culture or hope that in the future to engage in Chinese-related

work, study, can obviously achieve better learning effect on both oral and written Chinese. Second, the influence of learning desire on written Chinese learning effect is stronger than that on oral Chinese. The reasons are: first, in the foreign students' curriculum, the proportion of oral Chinese courses is low. Second, Chinese is extensive and profound, and the mystery of language use is by no means overnight. It is difficult to speak "beautiful" Chinese in a short time only by a good learning desire. On the contrary, written Chinese curriculum is rich in content and the examination methods are various. Hence, it makes student's writing relatively solid. Student can write easily but feel hard to say.

3) The influence of learning environment on Chinese learning effect: First, in the path coefficient, the learning environment has a significant positive effect on the learning effects of both oral and written Chinese. This shows that the scholarship, attendance and teachers' teaching level have a direct influence on the students' Chinese learning effect. Results show that most of the students who got scholarship have more enthusiasm than those who did not get scholarship. In the more attendance class, students' overall study effect is better, but the excessive attendance has certain negative effect. Additionally, the teacher with high teaching level, the rate of attending is relatively high, and learning absorption effect is better. Second, the effect of learning environment on the effect of oral Chinese is significantly weaker than the effect on written Chinese.

4) The influence of living environment on Chinese learning effect: First, living environment has a significant positive effect on oral Chinese learning effect. Taking part in more social practice activities, having more friends from other countries, can better promote foreign students to exercise non-classroom speaking ability, make up for oral training deficiencies in the classroom. Second, living environment has a significant negative effect on the learning effect of written Chinese, which indicates that the more social practice and foreign friends, the worse the effect of written Chinese learning, because too many part-time activities may lead to absenteeism, affecting the learning of classroom knowledge.

5) The influence of family environment on Chinese learning effect: Family environment has a significant positive effect on the learning effects on both oral and written Chinese. This is because the family environment affects students' personality. Students in good family environment have more extroverted character, and better expressive ability. Hence, the oral ability is stronger, conversely, is relatively weak. Additionally, harmonious families make children engage in learning more comfortably.

V. CONCLUSION

First, the significance level of learning basis and learning desire are stronger than those of learning environment, living environment and family environment. That means the role of internal factors is more important. Second, the role of

external causes cannot be ignored. The school should provide good teachers, set up a scientific attendance system and kinds of hardware and software support to foreign students. Teaching institutions should also act as a bridge to communicate with the families and foreign students' networks in China, such as implementing an effective system of college responsibility leadership and execution system of head teacher. Third, students should grasp the degree of participation in social practice. Too much or too little social practice has a negative impact on the effect of Chinese learning.

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