Model of English Language Learning Motivation in Ecological Perspectives to Improve Learning Motivation and English-Speaking Abilities of Chinese EFL Students at Heilongjiang International University, China

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Abstract: This study aimed to develop a model of English language learning motivation in ecological perspectives and investigate its effectiveness on improving English-speaking abilities of Chinese EFL students at Heilongjiang International University, China. The model comprising the elements of teacher, learner, learning and teaching, and ecological perspectives was designed based on socio-educational principles and the findings of HIU's learning motivation components in ecological perspectives. A pretest and post-test were conducted with both groups. The results revealed an increase of the speaking ability scores at the significance level of 0.05 in the experimental group. The students in the experimental group also manifested a significant increase of learning motivation level. Recommendations for English speaking instruction according to the designed model were also presented in this article.

Key words: model of English instruction, English language learning motivation; ecological perspectives; Chinese EFL students; speaking abilities

Introduction

Since the 1980s, China has represented one of the main growth countries in the world due to English language teaching, and meanwhile studying English has been a top priority among its foreign language educational policies （Liu, 2016）. Over the past decades, China has gradually become a leader in the global community of economy and culture, and established a high-profile presence in various areas of international scene （Pan, 2015）. English language has therefore become crucial as one of the pivotal foreign languages in the global communication in China.

As English has gained more popularity in China, especially, "One Belt One Road" initiated by the Chinese government recently, some have noted the potential value of English as a means to a greater educational opportunity and social mobility （Pan & Block, 2011）. There are studies investigating the effectiveness of the motivational classroom on Chinese EFL learners in the universities in China on their various language skills, especially the speaking abilities （Cheng & Sun 2010）. Therefore, it can be seen that English learning is important for students in China （Geng, 2017）. Chinese EFL learners view English as a key to a vast range of opportunities: to enter and graduate from university; to study abroad; to secure jobs, especially in international companies; or to get promoted in ideal jobs （Gao et al., 2007）.

Research on teaching English as a foreign language （EFL） since the 1990s has paid a great deal of attention to learning motivation in China （Pan & Block, 2011; Wang & Zhang, 2021）. In view of the difficulties of learning an L2, sustaining students' motivation is a key

factor for teaching an L2 successfully. The components of motivation of HIU EFL students came from analyzing the data from the answers of the questionnaire. There were seven 'components of motivation': teachers' teaching styles, teacher's motivational strategies, intrinsic motivation, expectancy, self-efficacy, extrinsic motivation from seeking self-reward and self-prosperity （Zhang, 2021）. Moreover, we still have little understanding of their relations with other factors, such as, motivational intensity and achievement （Liu, 2016）. These questions remain pressing to be investigated into.

Therefore, the current study aimed to create a teaching model based on language learning motivation theories, the theory of ecological learning, and the findings of HIU students' learning motivation components （Zhang, 2021） and to investigate the effectiveness of the instruction as the model on improving the speaking abilities and the level of learning motivation of the HIU Chinese EFL undergraduate students.

1. Research Methodology

The current research adopted an experimental design to investigate an area in which a teaching model could be designed and implemented to the English major students in HIU and discovered its effectiveness in enhancing the students' learning motivation and their speaking ability from the perspectives of ecological language teaching. The findings reported by Zhang （2021） about the components of learning motivation of the HIU students were used as a fundamental analysis of the learners' significant viewpoints of learning motivation components.

1.1 Research Samples

The current research samples included 24 English major HIU students equally divided into two groups: 12 in the experimental group and 12 in the control group. The students were all second-year English major HIU students with the age range from 18 to 20. They have all received 12 years of school education in China. They all had English language competence in the intermediate level with at least 10 years of English as a foreign language education in China.

1.2 Research Instruments

The instruments used in the study included learning motivation questionnaire, pretest and post-test, and the instructional instrument of which the designed model of English learning motivation from the ecological perspectives.

1.2.1 Learning Motivation Questionnaire

In this research, learning motivation questionnaire constructed by Zhang （2021） was used as the preliminary questionnaire, which was the questionnaire taken before the instructional treatment, and the culminating questionnaire, which was the questionnaire taken after the instructional treatment to investigate as to what extent the learning motivation of the HIU students in the experimental group increased at the significance level.

The LMQ included seven sub-scales, each of which measured on latent variables as follows: teachers' teaching styles, teacher's motivational strategies, intrinsic motivation, expectancy, self-efficacy, extrinsic motivation from seeking self-reward and self-prosperity. The questionnaires were written in accordance to Likert scale with the format of 5-level Likert item. The optimal length of the time was used to complete the questionnaire was controlled within less than 30 minutes.

1.2.2 Pre-test and Post-test

To investigate into to what extent the model of English language learning motivation in ecological perspectives is effective in improving speaking ability of the HIU English major students, a test conducted as both the pretest and the post-test was used. The pretest and post-test included a similar test using the same items of speaking prompts at the two points of times: before the treatment, the pretest, and after the treatment, the post-test. The rubrics descriptors from IELTS including fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation were used to evaluate the speaking ability of the students in both experimental and control groups.

The pretest and post-test were conducted with the students in both experimental and the control groups （N=24） before and after the teaching treatment. The students were required to speak about 5 minutes and their speaking were recorded with a recording pen. The IELTS speaking rubrics and speaking mark scheme were used to assess the students' speaking abilities.

1.2.3 Instructional Instrument: Model of English

Language Learning Motivation in Ecological Perspectives

To embark on this research, the researcher attempted to formulate the model of English learning motivation by using ecological perspectives which were validated by the experts. The course materials, lesson plans and course work were designed based on this model.

Lesson plans and learning materials were prepared for both groups. The researcher was the teacher of the experimental group which included ecological learning using intervention speaking activities/tasks in the lessons designed. The lesson plan with the activities and tasks were examined by the experts. The lessons for the students in the control group included a regular teaching without speaking practice in an ecological learning intervention.

2. Data Collection and Data Analysis

Data were collected from the HIU students' answers to the preliminary and culminating learning motivation questionnaire （Zhang, 2021） in the experimental group. For the students' speaking ability, data were collected from the pretest and post-test scores of the experimental group compared with the control group. The data collection was conducted during the academic year 2019/2020, when all the participants engaged in their second year of university study.

The time for completing the questionnaire was around 15-20 minutes. The data from both preliminary questionnaire （taken before the treatment） and culminating questionnaire （taken after the treatment） were keyed and calculated by a computer program using descriptive and referential statistics.

For the pretest and post-test, the teacher took the test with the students one by one and face to face, and all tape-recorded, both experimental and control groups. The students in both groups were asked to speak about 5 minutes and their speaking were recorded. The use of audio recording equipment and the material collecting from it allowed the researcher to analyze the data both repeatable and in details. For reliability of the scoring, an interrater was asked to assign scores to the pretest/post-test in the tape recording for both groups.

3. Findings

As for the aim of the current research, a model of English language learning motivation in ecological

perspectives was designed and investigated its effectiveness in improving the learning motivation and the speaking ability of the HIU English major students. The model was created based on the socio-educational principles which included L2 motivation self-system, self-efficacy, motivational orientation, and teachers' motivational strategies and the report of the HIU students' components of learning motivation （Zhang, 2021）. The model took into consideration the learning motivation which included students' English learning process in relationship between ecological classroom and other systems that aimed to look at the learning process, the actions and activities of teachers and learners, the multilayered nature of interaction and language use, in all their complexity and as a network of interdependencies among all the elements in the setting.

As a teaching model is an instructional plan comprising the patterns for designing educational activities according to the contexts and environments so as to achieve the particular goal （Joyce et al., 2009; Linh & Suppasetseree, 2016）, the model of English language learning motivation in ecological perspectives was constructed by taking into consideration the elements including teacher element, learner element, learning and teaching element, and ecological perspectives element. Every element had to give considerations to the ecological perspectives element which included relation, quality, emergence, diversity, and value （See Figure 1）.

Figure 1　The Model of English Language Learning Motivation in Ecological Perspective

Instructional treatment constructed as the designed model was implemented in the current study. The treatment included, therefore, the learning and teaching activities

presented in the lesson plans, which reflected the teacher's roles and the learners' roles through the ecological perspectives.

The lessons of English language learning motivation in ecological perspectives included five steps: Igniting Motivation, Setting-Preparing for Speaking, Conversing, Discussing, and Reflecting and Presenting Speaking Task. The lessons were also demonstrated and used in ecological teaching to create an instruction that could improve students' English-speaking ability. Motivational strategies were used in the lesson to activate and stimulate students to arm with ideas, activities, self-efficacy and expectancy. All the activities in class teaching were designed and based on motivational strategies in ecological perspectives that were relevant to the lessons to keep consistency of students' speaking process. Students discussed and presented their speaking topics and tasks in the class through speaking activities.

To investigate the effectiveness of the teaching treatment conducted as the designed model on improving students' learning motivation, the learning motivation questionnaire was used with the experimental group as preliminary and culminating questionnaire or the questionnaire taken before and after the treatment. To investigate the effectiveness of the teaching treatment as the designed model on improving students' speaking ability, a pretest and posttest was used with both experimental and control groups to compare which group obtained the increase of the posttest than the pretest scores at the significance level of 0.05.

For the effectiveness of the teaching treatment as the designed model on HIU students' learning motivation investigation, the findings were from the comparison between the learning motivation levels received from the preliminary motivation questionnaire taken by the experimental group （N = 12） before the teaching treatment and the learning motivation levels received from the culminating motivation questionnaire taken after the teaching treatment.

The question items for the preliminary questionnaire and the culminating questionnaire were grouped into the 'question themes' according to the findings of the learning motivation components （Zhang, 2021） comprising

Teacher's Motivational Strategies, Teacher's Styles, Intrinsic Motivation, Expectancy, Self-efficacy, Extrinsic Motivation from parents/peers/others, and Extrinsic motivation from seeking self-reward and self-prosperity. The students in the experimental group had learning motivation before the teaching treatment with the mean score of 3.87 and the SD of 0.68 and after the teaching treatment with the mean score of 3.98 and the SD of 1.04 （See Table 1）.

Table 1 Summary of Preliminary and Culminating Learning Motivation Questionnaire

Learning Motivation Components （N = 12）	Preliminary LMQ		Culminating LMQ	
	Mean	S.D.	Mean	S.D.
Teacher's Motivational Strategies	4.15	0.97	4.51	0.90
Teacher's Styles	4.11	0.99	4.32	1.00
Intrinsic Motivation	4.12	1.02	4.27	0.99
Expectancy	4.06	1.00	4.07	1.02
Self-efficacy	3.93	0.99	3.89	0.96
Extrinsic Motivation from parents/peers/others	3.00	1.26	3.43	1.17
Extrinsic motivation from seeking self-reward and self-prosperity	3.64	1.11	3.41	1.25
TOTAL	3.87	0.68	3.98	1.04

From the data analysis and the comparison between the preliminary motivation questionnaire and the culminating motivation questionnaire, the scores of the motivation levels in the experimental group were significantly higher than the scores before the treatment （See Table 1 and 2）. The mean scores of the Teacher's motivational strategies （Prelim. LMQ M = 4.15; Culm. LMQ. M = 4.51）, Teachers' style （Prelim. LMQ M = 4.11; Culm. LMQ. M = 4.32）, Intrinsic motivation （Prelim. LMQ M = 4.12; Culm. LMQ. M = 4.27） and Expectancy （Prelim. LMQ M = 4.06; Culm. LMQ. M = 4.07） were higher than the other three components: Self-efficacy（Prelim. LMQ M = 3.93; Culm. LMQ. M = 3.89), Extrinsic motivation from parents/peers/others （Prelim. LMQ M = 3.00; Culm. LMQ. M = 3.43） and Extrinsic motivation from seeking self-reward and self-prosperity （Prelim. LMQ M = 3.64; Culm. LMQ. M = 3.41）.

It can be seen that the teacher's motivational strategies played the highest rank of learning motivation

in students' learning. Ranging from the highest to the lowest appeared to be similar in sequence in almost all the question themes in the two times of the questionnaire. The question items which had the same ranking from most to least included Teacher's motivational strategies, Teacher's styles, Intrinsic motivation, Expectancy, and Self-efficacy. The last two question themes about extrinsic motivation had slightly different ranking, namely when after the treatment, Extrinsic motivation from parents/peers/others was slightly higher than Extrinsic motivation from seeking self-reward and self-prosperity, while the converse ranking occurred before the treatment.

Table 2　Comparison Between Results from Preliminary and Culminating Motivation Questionnaire

Group		N	Mean	Standard Deviation	T	P
Experimental	Preliminary	12	3.87	0.68	-15.609	0.001
	Culminating	12	3.98	1.04		

The findings revealed the effectiveness of the teaching model in enhancing the students' learning motivation, since there was an increase of the learning motivation levels in the experimental group at the significance level of 0.05 after having received the treatment of ecological speaking lessons according to the teaching model （See Table 2）.

For the effectiveness of the model in enhancing the HIU students' speaking ability, the findings were from the comparison between the pretest and post-test scores of both experimental and control groups. The findings revealed the effectiveness of the teaching model in that for the experimental group, there was an increase of the post-test scores when compared to the pretest scores at the significance level of 0.05, whereas there was no significance difference between the pretest and post-test scores of the control group.

The pretest and post-test, which was a similar test, was designed for the current study using the same items of speaking prompts. The rubrics descriptors from IELTS were used to evaluate the speaking ability of the students in both experimental and control groups.

When looking into the detail of the score descriptors in the scoring rubrics of the speaking pretest and post-test which included fluency and coherence, lexical resource,

grammatical range and accuracy, and pronunciation, it can be seen in Figure 2 for the experimental group and in Figure 3 for the control group that the experimental group could perform better than the control group in every of the score descriptor aspects （See Figure 2 and 3）.

Figure 2　Experimental group – Comparison of the pretest and post-test scores demonstrated in the four score descriptors in the speaking test rubrics
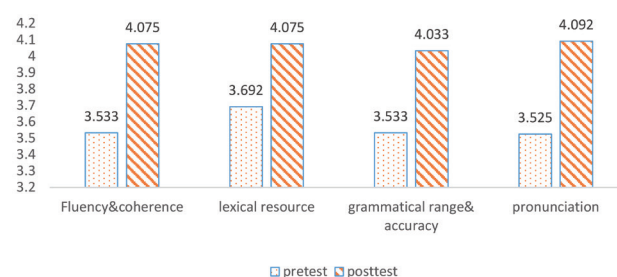

Figure 3　Control group – Comparison of the pretest and post-test scores demonstrated in the four score descriptors in the speaking test rubrics
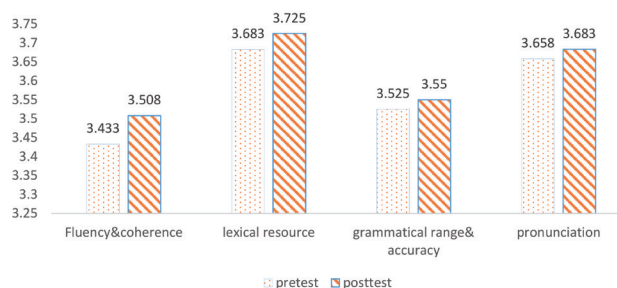

Figure 2 revealed that for the experimental group, the change of the scores from the pretest to the post-test in the aspect of fluency and coherence was from 3.53 to 4.08, whereas for the control group, the change was only from 3.43 to 3.51; in the aspect of lexical resource, the change of the scores in the experimental group was from 3.69 to 4.08, whereas for the control group, the change was only from 3.68 to 3.73; in the aspect of grammatical range and accuracy, the change of the scores in the experimental group was from 3.53 to 4.03, whereas for the control group, the change was only from 3.53 to 3.55; and finally in the aspect of pronunciation, the change of the scores in the experimental group was 3.53 to 4.10, whereas for the control group, the change was only from 3.66 to 3.68.

The detail of the aspects in the rubric score descriptors therefore yielded the increase of the scores

of the experimental group more than the control group in every aspect of the speaking ability. The comparison of the four rubrics score-descriptors showed therefore a stronger development of the students' English-speaking abilities with ecological teaching. In comparison between groups, the results of the individual sample t-Test in comparing between the experimental and the control group revealed a non-significant difference for the pretest in all the four score descriptors （See Table 3）, while they revealed a significant difference for the post-test in all the four score descriptors （See Table 4）.

Table 3　Pretest scores of experimental and control groups on four rubrics score-descriptors

Rubrics	The experimental group （n=12）		The control group （n=12）		
	M	SD	M	SD	p
fluency & coherence	3.53	0.36	3.43	0.37	.33
lexical resource	3.69	0.38	3.68	0.43	.24
grammatical range & accuracy	3.53	0.25	3.52	0.36	.25
pronunciation	3.52	0.33	3.66	0.38	.36

Table 4　Posttest scores of experimental and control groups on four rubrics score-descriptors

Rubrics	The experimental group （n=12）		The control group （n=12）		
	M	SD	M	SD	p
fluency & coherence	4.08	0.27	3.51	0.43	0.04
lexical resource	4.08	0.33	3.72	0.47	0.01
grammatical range & accuracy	4.03	0.22	3.56	0.38	0.02
pronunciation	4.09	0.28	3.68	0.36	0.00

It could be interpreted that in the pretest, both experimental and control groups had equivalent speaking ability, but after the teaching treatment to the experimental group, the scores of the students' speaking ability in the experimental group differed significantly from the control group in all the aspects of rubric score descriptors. The scores of the pretest compared to the post-test made within group and between groups of the experimental group and the control group yielded the results that the post-test scores were higher than the post-test scores at 0.05 significance level.

4. Conclusion and Discussion

The current study employed a variant of mixed methods approach which was embedded experimental design. For this research design, a qualitative strand was embedded within a quantitative experiment to supplement the experimental design （Creswell & Plano Clark, 2011）. Mean scores, or the differences between students' pretest and post-test scores were compared to determine whether students made progress during the class （Nunan & Bailey, 2009）. The interviews were gathered to provide more insight into the quantitative findings, which included the pretest/posttest scores and the scores from culminating motivation questionnaire of the students in the experimental group. Therefore, the embedded design, the qualitative data, was used to triangulate the quantitative findings.

The model of English language learning motivation in ecological perspectives was created according to the ecological teaching rendering the lesson plans of 15 weeks. Instructional treatment used in this part could be seen as an example in a lesson plan that was created based on English speaking construction using motivational strategies in ecological perspectives.

The pretest/posttest scores and the learning motivation level scores revealed the effectiveness of the model of English learning motivation in ecological perspectives. The results of the pretest/posttest scores from the experimental group increased in the significance level of 0.05. The qualitative data from the interview supported that the students in the experimental group found the speaking lessons in ecological perspectives fun and fruitful in the way that they could truly enhance their speaking fluency and feel more encouraged to speak English.

The research brought some useful insights on how learning motivation in ecological perspectives could be adopted in spoken English learning and practice. It also demonstrated that the effective classroom interaction with the students and group discussion could increase the fluency of oral English to a varying extent.

The findings of this study showed an integrated system that was applicable in exploring the development of EFL learners speaking fluency. Further exploration on the issue of motivational strategies （extrinsic/intrinsic

motivation, expectancy, self-efficacy etc.） as a teaching strategy could be conducted according to the system and obtain support from this conceptual source with this study. It is suggested from the current study that classroom interaction competence should be applied after the motivation strategies in ecological perspectives each time as a technique. The current study also proposes a push for interactional competence to give our students a truly emancipating, rather than compensating foreign language education. In addition, there should be ecological research that investigates language learning and teaching in real life inside and outside classroom, acknowledges the diversity and complexity, and adopts different methods for effective teaching and learning of oral English language.

There should also be a detailed examination of teachers' emotions as a result of their interaction with a variety of environmental elements and relationships. Chinese EFL students' classroom willingness to communicate should socio-culturally be constructed as a function of the interaction of individual and environmental factors, both inside and outside the classroom.

Accordingly, as English language teachers, it was necessary to familiarize themselves with knowledge about the language learning strategies, learners' needs and diversity of teaching methods and materials, teaching oral English in particular. Teachers should provide not only in terms of the direction of using strategies but also in terms of the ways to select the most suitable strategies by learners themselves. At last, teachers should regard strategy training as an integral part of regular class routine if possible, rather than an additional activity.

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