

# *Research on the Ecological Niche of Students' English Language Learning in Foreign Language Online Teaching*

**Junmin Wu**

*School of Foreign Languages, Zhengzhou University of Science and Technology, Zhengzhou, Henan, 450064, China*

**Keywords:** English language learning; Multi terminal foreign language online teaching; The ecological niche

**Abstract:** Since the development of new technology, multi terminal online teaching has become the mainstream teaching mode. The classroom space environment of college English for non-English majors has changed from classroom to home, and the teaching mode has also changed from offline to online. Students' online classes at home have formed a new student English Ecological niche. Can students establish a stable and balanced Ecological niche under the online teaching environment of college English in the new era? In this study, qualitative and quantitative research methods are used. In the form of questionnaires, the main factors affecting students' English learning and the student Ecological niche scale in online teaching are designed. Data about external factors such as teachers and teaching environment, students' language learning concepts, language learning strategies, and the definition of teachers' roles are collected, and the research results are analyzed and discussed from the change trend of average and standard deviation, Finally, it was found that the students' Ecological niche had a misplaced or absent balance change phenomenon, that is, the ecological imbalance of learning in online teaching. Therefore, this study aims to arouse teachers' attention to the students' learning ecological environment, correct the misplaced learning ecology in time, and rebuild a balanced and stable student Ecological niche.

## **1. Introduction**

Ecological niche was first created by Joseph Grinnell [1,2], representing the smallest unit of the habitat occupied by an organism, and emphasizing its spatial concept. Later, Charles Elton [3] further developed the connotation of Ecological niche, added the content of organism's role and position in the community, and pointed out that when Balance of nature is in principle, the Ecological niche of each organism does not coincide. If there is overlap, it must be unstable, and it will inevitably reduce the overlap of Ecological niche through competition among species until it is balanced.

In recent years, Ecological niche has been applied to various fields other than biology, among which some domestic scholars have applied ecological theory to educational research, and relatively more research has been done to analyze teaching through Ecological niche. For example, Chen Jianlin [4] examined foreign language teaching from an ecological perspective and studied the teaching

students' positions and Balance of nature, with the aim of achieving Dynamic equilibrium in foreign language teaching. The ecological factors of college English teaching ecosystem are teachers, students, teaching resources, teaching technology, information technology and teaching managers. Each ecological factor has its own unique Ecological niche in the system [4, 5]. Therefore, according to the definition of Ecological niche, combined with the research object of this study, student Ecological niche refers to the learning status and student role of students in the English online teaching ecological environment under the interaction of external factors and internal factors.

There are many studies on teachers' Ecological niche in China, but relatively few on students' Ecological niche. The teaching ecological environment in which non-English majors live is relatively complex. Influenced by various factors in the teaching ecological system, they have different learning effects, or will cultivate students' stable Ecological niche for independent learning, or will cause students' unbalanced ecological environment. In particular, this year's COVID-19 epidemic forced the transformation of offline teaching ecological environment into online teaching ecological environment. According to some students, the learning effect of online teaching is unsatisfactory and the learning efficiency is low, and they urgently hope to start school as soon as possible; Some teachers also raise issues such as poor online interaction, students' distracted attention, and frequent hanging up and perfunctory behavior. Due to the change of the teaching environment, the original Ecological niche of students in the offline teaching environment has been broken. When the Ecological niche of students deviates, is vacant, and is in its place without thinking and learning, this situation is worrying. Therefore, this study analyzes the actual situation of college students learning English through online teaching mode during the epidemic period from an ecological perspective, and explores the possible changes in the way college students learn English in the post epidemic era, and proposes corresponding thinking.

## **2. Research Design**

### **2.1 Research subjects**

The subjects of this empirical survey are randomly selected non-English major college students from a local university in Heilongjiang. According to the principle of voluntary participation, 165 non-English major college students were selected, including 46 males, 119 females, 94 freshmen, 67 sophomores, and 4 juniors, including 15 humanities students and 150 science students.

### **2.2 Research questions**

(1) In the context of the post pandemic era, what are the main influencing factors (including external and personal factors) that affect the English learning of non-English major students in the online teaching mode of the school?

(2) In the context of the post pandemic era, can non-English major students in the school adapt to the full English online teaching mode?

(3) In the context of the post pandemic era, has there been a change in the definition and concept of teachers among non-English major students at the school?

### **2.3 Questionnaire Design**

This study adopts a combination of qualitative and quantitative research methods, using a questionnaire survey form. A total of 165 questionnaires were distributed, and 165 valid questionnaires were collected, with a recovery rate of 100%. The questionnaire mainly includes three parts: personal basic information, table of main factors affecting students' English learning in online

teaching, and student Ecological niche scale. Personal basic information mainly includes gender, grade, major, average daily English course learning time (including online course time), online teaching platform used in class, the most effective online teaching platform, and satisfaction with the current teaching format. The second part mainly explores the main factors that affect the learning of English by non-English major college students, starting from ecological factors such as teachers and teaching. The third part is about the research on the Ecological niche embodied in students' online English teaching mode. It mainly examines the impact of college English online teaching mode on non-English major students' English learning and the changes that have taken place in the post epidemic era through the three dimensions of students' language learning concepts, language learning strategies and students' definition of the role of teachers in the online teaching environment.

### 3. Survey Results and Discussion

This part mainly aims at investigating the Ecological niche of non-English majors in the network teaching mode of college English in the post epidemic era. Starting from the ecological environment in which students in the school receive online teaching, this study explores their current learning status, mainly including students' language learning concepts, language learning strategies, and their views on the role of teachers.

#### 3.1 Survey and Analysis of Language Learning Concepts

Different researchers have different understandings of the content of language learning concepts. Wenden [6] believes that language learning beliefs are learners' views on how to learn language knowledge, acquire language skills, and engage in communication skills during the learning process. Language learning beliefs have four characteristics: stability, descript ability, error susceptibility, and interactivity. Wen Qiufang [7] agrees with Wenden's characteristic of "stability" and points out that learning concepts have a profound and subtle impact on students' English learning. Simply put, language learning beliefs refer to learners' views on language learning [8]. This study aimed to develop a self-made five level scale for language learning beliefs among non-English major college students during the post pandemic period. A questionnaire survey was conducted on 156 students, covering a total of 20 questions. Among them, 10 questions were about language learning beliefs and the other 10 questions were about language learning strategies. From the minimum value of 1 to the maximum value of 5 in the scale, according to the assignment of the Likert scale, they respectively correspond to five levels of "completely inconsistent", "inconsistent", "general", "consistent" and "very consistent". The research subjects choose appropriate scores according to their own conditions, and then calculate the average value, standard deviation and the number of "consistent "+" very consistent" people. The language learning concepts of non-English major college students in the online teaching environment include three aspects: the concept of online teaching mode, the concept of English learning ability, and the concept of the role of online English teaching. Through a questionnaire survey, the study found that, as shown in Table 1.

The average value of each concept here is obtained by adding the average of each corresponding questionnaire question and dividing by the number of questions. The total standard deviation of learning concepts is obtained by adding the standard deviation of the corresponding questionnaire question and dividing by the number of questions. Among the learning concepts, the average value of the concept of online teaching mode is the highest, up to 4.05, and the standard deviation is 1.03. Among the research objects, 113 people fully agree that "online teaching is an indispensable part of college English teaching in the future", 120 people think that "I can accept the concept of online English teaching (such as MOOC)", and 116 people judge that "online English teaching can meet their own Learning styles". This indicates that students relatively recognize the online teaching model,

as the development and participation of teaching activities, as well as the dissemination and learning of knowledge, all require the use of the internet as a medium. Before the epidemic, students had already learned how to search for information online, use online resources to self-study, complete tasks such as checking in online, and have become accustomed to swimming freely online. Therefore, they are not unfamiliar with online teaching activities during the epidemic, and can fully accept or even enjoy online teaching models. On the contrary, about 30% of students still cannot fully accept the concept of online English teaching and do not adapt to the online English teaching mode. They do not want to adopt a mixed online and offline teaching mode in college English classrooms after the regular resumption of classes. It can be inferred that these students have a negative attitude towards the online teaching model, and to some extent, they have a psychological resistance towards online teaching.

Table 1: A Survey of Language Learning Concepts among Non-English Majors in the Online English Teaching Environment

Beliefs	Concept of online teaching mode			Concept of English Learning Ability			Concept of the Role of Online English Teaching		
Average value	4.05		Conforming + Very Conforming	3.79		Conforming+ Very Conforming	3.898		Conforming + Very Conforming
		4.07	113		3.65	84		3.92	110
		4.06	120		3.93	108		3.86	101
		4.01	116					3.9	106
								3.86	101
								3.95	108
Standard deviation	1.03			1.05			0.966		
		1.05			1.16			0.95	
		1			0.94			0.99	
		1.04						0.96	
								1	
								0.93	

According to the concept of English learning ability, the research object's positioning of their English learning ability is the lowest among the three concepts, with a total average value of 3.79, while the total standard deviation is the highest, with a value of 1.05. The average value of "strong self-learning ability in English" is 3.65, which is lower than the overall average value of learning concepts, indicating that self-learning ability in English is a weakness of students; But the standard deviation is the highest at 1.16, reflecting a significant difference in students' assessment of self-learning ability. 84 students chose "in line "+"very in line", which also indicates that nearly half of the students have no confidence in their English self-study ability or believe that their English self-study ability is poor. The average value of "English learners will use the same method for online learning" is 3.93, with a standard deviation of 0.94. 108 people chose to agree with this question, confirming the learning ability of English learners. However, more than one-third of students believe that they will not use the same method for online learning, which is also the reason why they are unwilling to participate in online classrooms.

The average value of the concept of the role of online English teaching is 3.898, with a standard deviation of 0.966, which is the smallest difference among the three concepts, indicating that the research subjects hold roughly the same concept of the function of online English teaching, 101 to 110 research subjects believe that "online English teaching has improved my English proficiency, increased my interest in English, increased my enthusiasm for participating in the classroom, increased my self-learning time, and helped me improve my learning ability", indicating that the majority of students acknowledge the role of online English teaching, but more than one-third of students do not agree or fully agree with the function of online English teaching.

### 3.2 Investigation and Analysis of Language Learning Strategy Issues

The learning concept of learners largely determines the choice of learning strategies. Students with correct and stable learning concepts will choose to use efficient learning strategies, while students with incorrect learning concepts will prefer lazy and procrastinating "learning strategies". Sui Mingcai (2001) [9] discussed the research status of learning strategies abroad and in China, emphasizing that typical learning strategies are classified into three categories by O'Malley (1985) [10]: metacognitive strategies, cognitive strategies, and schizoaffective strategies. This study designed a survey questionnaire based on O'Malley's strategy classification, consisting of 10 questions, including 4 questions on metacognitive strategies, 4 questions on cognitive strategies, and 2 questions on social emotional strategies. The answer options are "never", "rarely", "sometimes", "often", and "always", with corresponding scores of 1-5. The research subjects selected appropriate scores based on the actual situation, and obtained the average, standard deviation, and the number of people who "frequently" and "always" through statistics. The specific data is shown in Table 2.

Table 2: Questionnaire on Language Learning Strategies of Non-English Majoring College Students in the Online English Teaching Environment

Learning Strategy	Metacognitive strategies			Cognitive strategy			Social-affective strategy		
			Often + always			Often + always			Often + always
Average value	3.938	3.97	109	3.94	3.94	107	3.97	3.98	109
		3.88	103		3.82	98		3.96	108
		3.87	105		4.02	115			
		4.03	111		3.98	111			
Standard deviation	0.97	0.97		0.95	0.97		0.925	0.93	
		0.99			1			0.92	
		0.95			0.91				
		0.97			0.92				

The total average value of metacognitive strategies is 3.938, slightly lower than the total average value of the other two strategies, but the total standard deviation is slightly higher than the other two strategies, indicating that students use relatively few metacognitive strategies and there is a slight difference between students. The average range of the corresponding questionnaire questions is 3.87-4.03. 109 students were able to "frequently" and "always" preview the knowledge they need to learn as seriously as offline, "103 were able to adjust their learning methods in a timely manner according to online English teaching mode, and 105 were able to" avoid distractions through planning ", indicating that nearly two-thirds of students often or always use metacognitive strategies to preview, adjust learning methods, and develop learning plans, and are able to learn English independently, being able to examine one's own learning methods, attitudes, and emotions, but the other one-third of students are unable or unwilling to use metacognition for online learning of college English. However, 111 students were "not adapted to the online exam but will try to be prepared", which means that these students attach importance to the exam results rather than the learning plan and learning process, and are ready to get good results in the exam. Temporary cramming is the normal state of students before the Final examination. Students' minds are nervous, anxious and depressed. This ecology has been misplaced and should be corrected in time. There are still 54 students who are not adapted to the online exam, I won't try my best to be prepared, probably because I'm prepared to give up studying college English.

Cognitive strategies refer to strategies specifically used for learning tasks, including strategies for directly processing language learning materials. The total average value of cognitive strategies is 3.94, and the average range of questionnaire questions is 3.82-4.02. Among them, the average value of "I

can use the internet to find English learning resources that match my own" is 4.02, with a standard deviation of 0.91. There are 115 people who "often" and "always", indicating that the research subjects often use the internet to search for English learning resources and will use online learning. The average value of 'I will actively organize what I have learned after online classes' is 3.94, with a standard deviation of 0.97. 107 people often or always actively organize what they have learned. The average value of "I can actively improve my oral and listening skills by imitating pronunciation and other methods" is 3.98, with a standard deviation of 0.92. 111 people can actively practice listening and speaking through imitating pronunciation and other methods. The average value of 'I will often use the autonomous learning system on the campus network to do some related exercises' is 3.82, which is the lowest average in cognitive strategies, with a standard deviation of 1.98. 98 people can frequently use the autonomous learning system on the campus network for exercises, indicating that the least number of students can persist in using the network for autonomous exercises. Students who are unable to practice independently may not have a solid grasp of the knowledge they have learned, and in addition, they may tolerate the problems that arise during online classes. Accumulating problems but not solving them can make students who are still motivated feel trapped and insecure, and can make students who are self-reliant muddle through, which is like a cold migratory bird that freezes to death and does not build a nest. This kind of ecology is the ecology of animals. If students occupy the ecology of animals, resulting in ecological overlap and imbalance, they will eventually be eliminated.

Social emotional strategies refer to the strategies adopted by students in their communication activities using society as a medium, namely communication strategies. Any classroom has communication and interaction, and online courses are no exception. In the process of online college English teaching, it is also inevitable to join group activities, discuss, and collaborate to complete assignments. Therefore, the online classroom of college English also adopts social emotional strategies. Its average value is 3.97, which is the highest among the three strategies, with a standard deviation of 0.925, which is the smallest among the three strategies. This indicates that the research subjects often engage in communication activities in online classes. For example, the average value of "I will actively watch live broadcasts or consult teachers when encountering unfamiliar knowledge" is 3.98, with a standard deviation of 0.93, and 109 people can actively watch live broadcasts or consult teachers. The average value of 'I am willing to participate in online discussions, answer questions, and group tasks' is 3.96, with a standard deviation of 0.92. 108 people are willing to participate in online discussions and collaborative tasks, which is the result of teacher-student interaction and student-student interaction.

#### **4. Some thoughts on restoring students' Ecological niche**

According to the survey results and discussion, at least one third of the research subjects have deviated from their Ecological niche, so they cannot complete college English online teaching tasks, or simply hang up or even skip classes online. In view of the deviation of students' Ecological niche, the following thoughts can help.

##### **4.1 Developing metacognitive strategies**

Only by establishing correct learning concepts can college students use metacognition to adjust language learning strategies. The key to language learning strategies is metacognitive strategies, and cultivating students' metacognitive strategies is the main channel to improve their autonomous learning ability [11]. Therefore, it is very important to help students learn to develop learning plans, choose learning methods, scientifically arrange time, and examine learning attitudes. To avoid some students being indifferent, ideological and political education that is close to students' lives should be



integrated into online classrooms to improve students' ideology, awaken students' apathy with crisis awareness, and use incentive mechanisms to help students learn to think.

#### 4.2 Developing English critical thinking skills

Professor Sun Youzhong stated at the teaching seminar on "Developing Speculative Ability in Foreign Language Teaching" on June 28, 2020, that teaching aims to develop students' thinking abilities. Without critical thinking ability, language learners become parrots. English teaching should incorporate critical thinking ability into teaching objectives, promoting the simultaneous development of language and critical thinking abilities. English teaching content should increase the level of challenge, increase students' learning engagement, scientifically "increase burden", and allow students to experience the learning challenge of "jumping to get it". Therefore, cultivating students' critical thinking ability not only enriches teaching content, but also achieves mutual benefit and common development between teaching and learning.

#### 4.3 Creating an interactive ecological atmosphere

In the process of online teaching, students' evaluation of teachers and teaching reflects the weakness of poor interactivity in online classrooms. In the answer to "What are your suggestions for improving the online teaching mode adopted by our school's English class?", the most mentioned by students is also to strengthen teacher-student communication and interaction. Compared to face-to-face classes, interactivity is the "Achilles heel" of online classrooms, so it is very important to add interactive links in class. Pre class design is more crucial, and teachers should pre design tasks and the theories and methods used to enhance students' interest in online English teaching. In addition, teaching software that can facilitate teacher-student interaction and communication should be developed as soon as possible, free of charge, and open to teaching. Teachers must learn all the functions of teaching software in advance, master information technology proficiently, and achieve the best teaching effect in online classroom.

### 5. Conclusion

In short, under the epidemic situation, the balance point fluctuation of students' Ecological niche in college English online teaching is mainly reflected in the change of students' language learning concepts, strategies and views on teachers' roles and teaching itself. In the face of the New normal of online classroom, teachers and students should take wartime measures as a peacetime mechanism, learn to turn crisis into opportunity, actively explore solutions, and actively adapt to the new fashion. Let students establish correct learning concepts, actively use metacognitive strategies to learn and think, and actively participate in Cooperative learning and group discussion to improve the ability of autonomous learning. To meet the needs of the war, teachers must change their roles, design fresh interactive activities and novel speculative themes, and reconstruct a harmonious and stable student Ecological niche to achieve an optimized online classroom effect.

### References

- [1] Grinnell J. *The Niche-relationships of the California Thrasher* [J]. *Auk*, 1917(34):427-433.
- [2] Grinnell J. *Geography and Evolution* [J]. *Ecology*, 1924(5): 225-229.
- [3] Elton C. *Animal Ecology* [M]. New York: The Macmillan Company, 1927.
- [4] Chen Jianlin. *Integration of Computer Networks and Foreign Language Courses* [M]. Shanghai: Shanghai Foreign Language Education Press, 2010.
- [5] Li Chen, Chen Jianlin. *Research on Students' Ecological niche in College English Teaching Ecosystem* [J]. *Foreign*

*Language Electronic Teaching*, 2017 (10): 15-22.

[6] Wenden A. L. *Learner Strategies for Learner Autonomy: Planning and implementing learner training for language learners* [M]. Hertfordshire, UK: Prentice-Hall International, 1991.

[7] Wen Qiufang. *The Changing Patterns and Characteristics of Motivation, Concepts, and Strategies of English Learners* [J]. *Foreign Language Teaching and Research*, 2001 (2): 105-110.

[8] Lu Min. *Learning Concept and English Teaching* [J]. *Shandong Foreign Language Teaching*, 2005 (4): 11-14.

[9] Sui Mingcai. *English Teaching Theory* [M]. Nanning: Guangxi Education Press, 2001.

[10] O'Malley J M, Chamot A U, Kupper L. *Learning strategies applications with students of English as second language learners* [J]. *Applied Linguistics*, 1989, 10(4): 418-437.

[11] Xiao Wuyun, Wang Xiaoping, Cao Qunying *Training metacognitive strategies, improving learning autonomy and academic performance* [J]. *Journal of Foreign Languages*, 2011 (2): 109-113.