

The study of using Situated Cognition to improve the effect of English learning in college

—A study based on the survey of English learning strategies of non-English majors

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Abstract: According to previous studies, the research of English learning strategies mainly focuses on English major students in China. English learning strategies of non-English majors clearly lack of enough attention. This paper aims to explore the differences and similarities of non-English major students' English learning strategies (memory strategy, cognitive strategy, metacognitive strategy, affective strategy) based on the survey of 376 non-English major college students to employ Situated Cognition to promote learning outcomes and teaching effects of college students specifically and pointedly. It turns out that there still exist some problems about the application of English learning strategies among non-English major students, which means that these strategies need to be enhanced further. This study suggests that Situated Cognition should be applied in real English teaching process in college, which will not only help students examine their learning strategies but assist teachers using more effective methods to help students advance their learning effects.

1. Introduction

In the field of modern education, Situated Cognition is a hot topic discussed by many scholars. Since Brown (Brown, et al., 1989) proposed the relationship between situated cognition and cultural learning, the theory of situated cognition has caught great attention and developed gradually. Situated Cognition holds that the construction of scenario and learning environment plays a crucial part in students' learning process. This standpoint has significant referential value for the innovation of teaching methods in all disciplines in the field of education, which means this theory can also be employed in the reform of college English teaching and learning in China. The first researcher who suggests that we should apply Situated Cognition in the reform of English teaching methods starts from three English teaching modes based on Situated Cognition and puts forward some relevant advice of improving teachers' teaching efficiency (Zhang Chunyu, 2003). In recent years, Situated Cognition has been used in the exploration of English teaching improvement, which makes great progress (Cao Hong, 2011; Chen Yan, et al., 2018). Situated Cognition applies constructivism teaching theory in English teaching process by improving learners' learning motivation, which makes great contribution to the reform of college English teaching methods, such as improving learners' English learning theory. However, the discussion on college students' learning strategies based on Situated Cognition is not enough.

Learning strategies are indispensable in various disciplines and fields. In college, teachers of different subjects all attach great importance to the history of development, the future prospect, epistemology and learning methods of each subject. Therefore, learners can rather easily grasp good learning strategies and have a full understanding of their specialized courses. As for the study of English in college, non-English major students seldom have the opportunity for intensive English study. They can only learn how to improve their basic English skills instead of having a full picture of

every aspect of English courses, which results in the difficulty of developing interest and acceptance of English.

This paper analyzes the present English learning circumstance among non-English students and teaching situation of teachers in Shandong Agricultural University as well as the students' feedback on learning English. In this paper, the research starts from two dimensions, major and grade, to investigate relevant information of English learning strategies between different majors and grades to examine students' current English learning effects. The purpose of this paper is to explore the benefits of employing Situated cognition to prompt English learning strategies of non-English major students.

2. Literature review

In China, English is taught as a second language, so that the advancement of its teaching methods is studied by many scholars (Feng Yufang, 2006; Fan Lin, 2003). The research pays great attention to explore new teaching models on the basis of constructivism teaching theory, such as Flipped Class Model. There are also many studies about new educational technology (multimedia, mobile application, etc.) and classes taught by foreign teachers. These types of teaching can create appropriate and effective ways and good language learning environments for English learners, steadily improving the quality of college English teaching.

Currently, the reform of education in many fields proposed by domestic scholars based on Situated Cognition has been quite effective. According to Situated Cognition, meaningful learning and the integration of knowledge and real situations are of great importance to learners. The focus of Situated Cognition are knowledge, cognition and learning, and its typical feature is the evaluation of knowledge. This theory not only regards knowledge as a mental representation, but also connects knowledge with specific social circumstances. Brown and his partners (1989) point out that a person's activity and learning are inseparable through a lot of research. That is to say, the acquirement of knowledge and activities of learners are closely related. Lave and Wenger (1999) hold that cognitive activities of human are based on real and practical scenarios. They stress the importance of social factors in the process of the learners' cognitive activities. Zhao Yuxia (2008) suggests that language environment and vivid situations should be established in order to improve the quality of foreign Chinese teaching. She also discusses the basic theory of situational teaching and applies it to the relevant principles of foreign Chinese teaching to promote the practice in real Chinese teaching process. Ma Jianfen (2012) employs situational teaching methods to the practices and activities of Chinese teaching in primary schools by suggesting creating situations during classes to intrigue students' interest and guide them to think independently. Using Situated Cognition, Ma proposes suggestions to advance the reform of Chinese teaching in primary schools. In addition, there also exists some teaching improvement in other fields including improving the teaching effectiveness of Japanese as a second foreign language for English major students, utilizing multimedia to help situation creation to promote teaching efficiency, explaining the influence of Situated Cognition for the development of learners from the perspective of psychology.

It is quite noticeable that there are some achievements in the advancement of English teaching reform based on Situated Cognition, like using Situated Cognition to enhance the listening and speaking ability of students, employing situational teaching methods to enhance oral English competence of students, using Situated Cognition to improve English teaching and students' basic language skills in middle and primary schools in China. Nowadays, the discussion about the reform of college English teaching methods based on Situated Cognition is mainly focused on English major students, such as improving the teaching of college English translation. However, there are few studies about the learning effect of English learning among non-English major students.

Thus, this study will start from improving English learning strategies, including memory strategy, cognitive strategy, metacognitive strategy and affective strategy, by using Situated Cognition to discuss how to improve non-English students' learning strategies to promote their English learning efficiency.

3. Research design

3.1 Research questions

Nowadays, there are some widespread phenomena in college English teaching. For example, class forms are rather inflexible; exam-oriented education is pervasive; the lack of language environment, etc. These problems lead to the lack of interest and learning motivation of students as well as the noneffective learning outcome and the problems existed in their learning strategies. In order to better promote public English teaching in college, it is definitely necessary to address certain coping strategies. Due to the widespread use of Situated Cognition in teaching field, this paper will discuss the following questions in order to achieve these goals with the help of some ideas of Situated Cognition.

- 1) The current situation of English learning and learning strategies used by non-English major students.
- 2) Problems in English learning strategies of non-English major students.
- 3) Suggestions and solutions about how to improve non-English major students' English learning strategies.

3.2 Study subjects

The subjects of this study are some non-English major students in Shandong Agricultural University. The periods of the English lessons aimed for non-English major students are the first two years in university. There are some comprehensive courses in the first three semesters. In the fourth term, the purpose of teaching is to increase the skill practices of students, mostly about the listening and writing practices. The teaching mode is basically the traditional form, in that the teacher plays the most important role. There are no substantial differences of the English courses between different departments, in which the main purpose is to improve students' English competence.

This survey takes some non-English major students in Shandong Agricultural University as an example to investigate 376 students' current English learning strategies in random from freshman to junior of different majors (College of Chemistry and Materials Science, College of Plant Protection and College of Economics and Management) by means of questionnaire.

3.3 Survey tools

The design of this survey refers to *Strategy Inventory for Language Learning* based on the classification theory of language learning strategies proposed by Rebecca Oxford (1995). There are four parts in this questionnaire:

- 1) Memory strategy: focusing on what kinds of methods students are using to memorize new words.
- 2) Cognitive strategy: focusing on what kinds of methods students are using to promote their English ability; whether trying to communicate through English in daily conversation; whether using literal translation method in learning process.
- 3) Metacognitive strategy: focusing on what kinds of methods students are using to effectively monitor their English learning process and outcome; whether students can find their mistakes in the learning process; whether students have clear objectives for English learning.
- 4) Affective strategies: focusing on whether students can actively recognize and regulate their emotions.

This survey starts from the above four aspects in order to investigate the present situation of college non-English major students' English learning strategies. Moreover, this questionnaire also contains the questions about the students' self-evaluation on their current learning strategies and the influence of these strategies to their study at the present. To some extent, this questionnaire can reflect the current English learning level of students.

There are altogether 25 questions in the questionnaire. The four aspects of strategies each have 5 questions, such as whether memorizing new words by making sentences, whether watching English

movies frequently, whether reflecting the progress, whether sharing feelings and experiences with other learners. According to statistics on reliability, Cronbach's alpha is 0.944, which shows a high dependability.

4. Survey results and analysis

There is no significant difference exists in major of the subjects by the analysis of the data.

4.1 Memory Strategy

The results of the survey show that memorizing words by repeating reading and writing is the most widely used memory strategy applied by 70% of the non-English major students. Making sentences when learning new words is the least used memory strategy and only 20% learners use it. About 60% subjects memorize words by taking sounds and meanings both into account. However, only less than 10% set up appropriate situations to help word memorization and about 40% attach great importance to the positions of the words they learn.

In terms of grades, freshman perform better in using memory strategy. Through the one-way ANOVA analysis of three grades of students, there is conspicuous difference regarding the "repeating and writing" strategy between freshman and sophomore; there is also notable distinction of this strategy between sophomore and junior. As the table shows below:

Table. 1 Results of single factor analysis of memory-learning strategies for three grades

Dependent variable	(I) 1	(J) 1	Mean deviation(I-J)	Standard error	Significance	95% confidence interval	
						Lower limit	Upper limit
Keeping reading and writing	freshman	sophomore	.3172*	.1436	.028	.035	.600
		junior	-.0278	.1077	.797	-.240	.184
	sophomore	freshman	-.3172*	.1436	.028	-.600	-.035
		junior	-.3450*	.1620	.034	-.664	-.026
	junior	freshman	.0278	.1077	.797	-.184	.240
		sophomore	.3450*	.1620	.034	.026	.664

4.2 Cognitive Strategy

According to the survey, around 60% of learners connect the English words with correspondent Chinese words while learning to help them learn English words. About 30% of students try to speak English with others after class, especially freshman. And 40% frequently watch some English movies and programs to improve their English level. Almost half of the subjects translate English word by word into Chinese during daily learning, which can be regarded as a feasible way but can not depend on it completely. Because of the cultural differences, things may be represented differently by different languages.

Through the one-way ANOVA analysis of three grades of students, it turns out that there are some significant discrepancies concerning the "communicating with English", "connecting the new knowledge with the old", "no literal translation" and "watching English movies" strategies between freshman and sophomore; there are also notable differences concerning "communicating with English", "communicating with English" and "watching English movies" strategies between sophomore and junior. As the table shows below:

Table. 2 Results of single factor analysis of memory-learning strategies for three grades

Dependent variable	(I) 1	(J) 1	Mean deviation (I-J)	Standard error	Significance	95% confidence interval	
						Lower limit	Upper limit
communicating with English	freshman	sophomore	.4606*	.1527	.003	.160	.761
		junior	.0841	.1145	.463	-.141	.309
	sophomore	freshman	-.4606*	.1527	.003	-.761	-.160
		junior	-.3765*	.1723	.029	-.715	-.038
	junior	freshman	-.0841	.1145	.463	-.309	.141
		sophomore	.3765*	.1723	.029	.038	.715
connecting the new knowledge with the old	freshman	sophomore	.3608*	.1473	.015	.071	.651
		junior	-.2062	.1105	.063	-.423	.011
	sophomore	freshman	-.3608*	.1473	.015	-.651	-.071
		junior	-.5670*	.1662	.001	-.894	-.240
	junior	freshman	.2062	.1105	.063	-.011	.423
		sophomore	.5670*	.1662	.001	.240	.894
no literal translation	freshman	sophomore	.3516*	.1623	.031	.032	.671
		junior	.0504	.1217	.679	-.189	.290
	sophomore	freshman	-.3516*	.1623	.031	-.671	-.032
		junior	-.3012	.1831	.101	-.661	.059
	junior	freshman	-.0504	.1217	.679	-.290	.189
		sophomore	.3012	.1831	.101	-.059	.661
watching English movies	freshman	sophomore	.3164*	.1543	.041	.013	.620
		junior	-.0529	.1157	.648	-.280	.175
	sophomore	freshman	-.3164*	.1543	.041	-.620	-.013
		junior	-.3693*	.1741	.035	-.712	-.027
	junior	freshman	.0529	.1157	.648	-.175	.280
		sophomore	.3693*	.1741	.035	.027	.712

4.3 Metacognitive Strategy

According to the results, only less than half of the learners set up timetable for learning English, especially junior students. Around 60% of students try to find good methods to learn English, but only half of the subjects actively find out their mistakes during learning. Most of the students do not have clear goals about how to improve their English skills and do not have a clear sense of their own progress. It follows that students' metacognitive strategy have some clear defects, which influencing the improvement of their English ability. Through the one-way ANOVA analysis of three grades of students, it turns out that there are some clear distinctions regarding "setting up timetable", "having clear goals" and "making progress" strategies among freshman, sophomore and junior. As the table shows below:

Table. 3 Results of single factor analysis of memory-learning strategies for three grades

Dependent variable	(I) 1	(J) 1	Mean deviation(I-J)	Standard error	Significance	95% confidence interval	
						Lower limit	Upper limit
ways to learn better	freshman	sophomore	.2185	.1395	.118	-.056	.493
		junior	-.1874	.1046	.074	-.393	.018
	sophomore	freshman	-.2185	.1395	.118	-.493	.056
		junior	-.4059*	.1574	.010	-.715	-.096
	junior	freshman	.1874	.1046	.074	-.018	.393
		sophomore	.4059*	.1574	.010	.096	.715
setting up timetable	freshman	sophomore	.4042*	.1489	.007	.111	.697
		junior	-.1933	.1116	.084	-.413	.026
	sophomore	freshman	-.4042*	.1489	.007	-.697	-.111
		junior	-.5975*	.1680	.000	-.928	-.267
	junior	freshman	.1933	.1116	.084	-.026	.413
		sophomore	.5975*	.1680	.000	.267	.928
having clear goals	freshman	sophomore	.4820*	.1501	.001	.187	.777
		junior	-.0092	.1126	.935	-.231	.212
	sophomore	freshman	-.4820*	.1501	.001	-.777	-.187
		junior	-.4911*	.1693	.004	-.824	-.158
	junior	freshman	.0092	.1126	.935	-.212	.231
		sophomore	.4911*	.1693	.004	.158	.824
making progress	freshman	sophomore	.3750*	.1485	.012	.083	.667
		junior	-.1366	.1114	.221	-.356	.082
	sophomore	freshman	-.3750*	.1485	.012	-.667	-.083
		junior	-.5116*	.1676	.002	-.841	-.182
	junior	freshman	.1366	.1114	.221	-.082	.356
		sophomore	.5116*	.1676	.002	.182	.841

4.4 Affective Strategy

The results show that only less than half of the students use affective strategies in English learning process. Only around 40% will overcome their fear and encourage themselves while learning. Most of the learners will have negative emotions when meeting with difficulties, which decreases their enthusiasm towards English. Moreover, some students will lose their interest and confidence if they cannot find the right way to cope with their negative feelings. Only about 40% can actively notice their emotional changes in the learning process. Few students record their feelings and experiences or share with others.

Through the one-way ANOVA analysis of three grades of students, it turns out that there are some clear differences regarding “trying to relax”, “noticing emotions”, “writing down feelings” and “sharing with others” strategies between freshman and sophomore; there are also conspicuous differences regarding “trying to relax”, “noticing emotions” and “sharing with others” strategies between sophomore and junior. As the table shows below:

Table. 4 Results of single factor analysis of memory-learning strategies for three grades

Dependent variable	(I) 1	(J) 1	Mean deviation (I-J)	Standard error	Significance	95% confidence interval	
						Lower limit	Upper limit
trying to relax	freshman	sophomore	.3402*	.1471	.021	.051	.630
		junior	-.0413	.1104	.709	-.258	.176
	sophomore	freshman	-.3402*	.1471	.021	-.630	-.051
		junior	-.3815*	.1660	.022	-.708	-.055
	junior	freshman	.0413	.1104	.709	-.176	.258
		sophomore	.3815*	.1660	.022	.055	.708
noticing emotions	freshman	sophomore	.4871*	.1404	.001	.211	.763
		junior	.0209	.1053	.843	-.186	.228
	sophomore	freshman	-.4871*	.1404	.001	-.763	-.211
		junior	-.4662*	.1584	.003	-.778	-.155
	junior	freshman	-.0209	.1053	.843	-.228	.186
		sophomore	.4662*	.1584	.003	.155	.778
writing down feelings	freshman	sophomore	.3740*	.1637	.023	.052	.696
		junior	.0761	.1228	.535	-.165	.318
	sophomore	freshman	-.3740*	.1637	.023	-.696	-.052
		junior	-.2979	.1847	.108	-.661	.065
	junior	freshman	-.0761	.1228	.535	-.318	.165
		sophomore	.2979	.1847	.108	-.065	.661
sharing with others	freshman	sophomore	.4199*	.1499	.005	.125	.715
		junior	.0777	.1124	.490	-.143	.299
	sophomore	freshman	-.4199*	.1499	.005	-.715	-.125
		junior	-.3422*	.1692	.044	-.675	-.010
	junior	freshman	-.0777	.1124	.490	-.299	.143
		sophomore	.3422*	.1692	.044	.010	.675

5. Application of situated cognition in English learning strategies of non-English major students

5.1 Application of Situated Cognition in Memory Strategy

Repeating reading and writing strategy is an effective way to improve the basic skills of English. But vivid situation is absent if students just reading or writing mechanically, which makes it hard for students to relate what they learn to real life. The survey shows that most junior students use this strategy, while few sophomores use this. Thus, lower grades students should strengthen the awareness of using this strategy in learning English to develop good memory learning strategy. Situated Cognition stresses that real situation should be combined with knowledge, which not only helps students double the effect of their memorization, but also deepens their understanding of what they learn in daily practices. Learners ought to create learning situations for themselves while reading and writing to construct meanings for their learning contents. At the same time, teachers can organize various group activities (e.g., watching movies related to the class, brainstorming) to make students employ this strategy effectively.

5.2 Application of Situated Cognition in Cognition Strategy

The results show that lower grades students are more inclined to improve the level of English by communicating through English with their partners. According to Situated Cognition, knowledge is situational. Only through activities can we continuously make progress, and only through practical use can we know the meaning of knowledge. Learners are supposed to establish vivid scenes that is help for English learning and enhance their ability of using English practically, e.g., organizing group works that make students discuss some certain topics to improve English competence. And higher grades students are encouraged to pay much attention to this strategy. Meanwhile, learners should consciously strengthen the internal connection between new knowledge and what they had previously learned. They can integrate what they have learned efficiently to improve their language capacity.

In the process of learning language, learners should have a good understanding of the English contexts and the implied meanings rather than just translate English into Chinese mechanically. Sometimes literal translation is a disadvantage for students' understanding of what they learn. According to Situated Cognition, knowledge is not isolated, but is integrated with situation or environment. The survey shows that sophomores tend to understand English contexts through literal translation. Students should always be aware of the application of this strategy in the development. They can connect what they learn with real life to further promote their English competence and overcome the negative influence of Chinese on English learning. In spare time, learners can watch some English movies and programs to increase the interest of learning English, which can also broaden their views and learn western nations' cultures.

5.3 Application of Situated Cognition in Metacognition Strategy

Situated Cognition proposes that the learning contents and activities of learners should be organized practically and meaningfully. Students should know the importance of establishing timetables for English learning. Due to the fact that non-English major students pay great attention in their specialized courses, the time for English learning is rather inadequate. Designing timetables can save enough time for the effective learning of English courses and students can organize their own pace of learning methodically to develop good learning habits. Another important thing is that students should also set up clear goals, which is helpful for them to think carefully about how to find learning methods that are suitable for them. By doing that, they can better monitor their progress and improve their English level further. Higher grades students should be more aware of these strategies. Metacognitive strategies should be stressed in the initial stage of the development of learners in order to develop good monitoring strategies.

5.4 The Application of Situated Cognition in Affective Strategy

It is necessary for learners to have relaxing learning environment. If learners have negative feelings towards English, interesting learning environments can help relieve negative emotions. Students should be aware of the factors which influence their emotions and then find solutions to overcome them. They can share their problems with friends and teachers or writing down their feelings to maintain a good attitude and use affective learning strategies correctly. What should be noted is that freshman perform best in employing affective strategies. Thus, in the development towards advanced learners, students are supposed to observe their changes of feelings and progress in order to study English further with a positive attitude.

6. Conclusion

This study finds that most investigated non-English major students in Shandong Agricultural University employ memory strategy, cognitive strategy, metacognitive strategy and affective strategy in their English learning process. These four kinds of strategies are really helpful for the English study of non-English major students, but there still exist some problems. This paper starts from the problems found in the research and employs Situated Cognition to discuss how to improve non-English major students' learning strategies. Situated cognition emphasizes the importance of the representation of vivid scenarios in learning and teaching process, which can offer constructive suggestions for the

improvement of learners' learning strategies. Both the teachers and the students need to be actively involved in the process of improving learners' learning strategies and apply Situated Cognition into learning and teaching activities to improve English learning in practical activities.

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