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## Correlation between Meta-cognitive Strategies And English Autonomous Learning Competence

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### Abstract

This paper combines quantitative and qualitative to collect and analyze data. It is to probe the overall status of subjects' application of meta-cognitive strategies (MSs) and English autonomous learning (EAL) competence by questionnaires. The descriptive statistics indicate that the use frequency of MSs and subjects' real status of EAL competence are all at a medium level. In another word, the subjects' use frequency of MSs is relatively low; the awareness of EAL is weak and their competence of EAL is not high. In which, the lowest frequency is self-managing strategy, while the degree of depending on teachers is at a high level, and it turned out that subjects' EAL awareness and competence are relatively weak. The research results indicate clearly that it is necessary to do some scientific learning strategies training for non-English majors in Northwest A&F University, especially on MSs training in the future language teaching, so as to help them establish correct and positive learning beliefs and to promote their learning methods for much better and suitable ones, therefore to improve their EAL competence and EEnglish academic achievement(EAA) effectively.

### Keywords

Meta-cognitive Strategies; English Autonomous Learning Competence; correlation.

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## 1. Introduction

When College English Curriculum Requirements offered the proposal on autonomous learning, innovating traditional college English teaching with computer and network in virtue of multimedia technology has become the current hot topic [1]. According to College English Curriculum Requirements, College English as an integral part of higher learning is a required basic course for undergraduate students. As a systematic whole, College English has its main components knowledge and practical skills of the English language, learning strategies and intercultural communication; it takes theories of foreign language teaching as its guide and incorporates different teaching models and approaches. The objective of College English is to develop Students' ability to use English in an all-rounded way, especially in listening and speaking, so that in their future studies and careers as well as social interactions they will be able to communicate effectively and improve their general cultural awareness so as to meet the needs of China's social development and international exchanges.

It is especially important to achieve the objective of College English by improving learners' autonomous learning competences. Autonomous learning refers to the competence for learners to manage their own learning, and the learning attitude and mode to arrange their learning activities by self-organizing, self-evaluation and self-regulation. Consequently, meta-cognitive strategy, as one of the main self-management strategies, plays a very important role in improving and developing the ability of autonomous learning and learning a language successfully. In short, meta-cognitive

strategies are close related to autonomous learning, and both of them are containing the element of self-managing, self-monitoring and self-evaluating [2]. Since 2015, we has tried to collect published papers on meta-cognitive strategies research in foreign language community at home, and has finished the literature accumulation and review in this field. In addition, the researcher improved and supplemented the paper continually, and completed a paper named "China's English Meta-cognitive Strategy Research over 15 Years" for publishing ultimately. By reviewing conditions and achievements of meta-cognitive strategies and autonomous learning, it draws the trend that researches in these two fields are increasing generally, and a growing number of scholars begin to concern them. The researches on them in China are approaching normalization and maturity and conforming to international research paradigms more and more. In December 2015, the preliminary works are complete; the researcher finalized the topics basically, and then started to prepare thesis proposal.

In order to the carry out the correlation research and have a general picture of the present research, it is necessary to get a specific understanding of relevant theories and review the literature of the findings in the field of meta-cognitive strategies and autonomous learning so as to guide the research. This part is to present the theoretical framework of this study and deal with the definition, classification and significance as well as the previous research findings on meta-cognitive strategies and autonomous learning at domestic and abroad.

## 2. Meta-cognitive Strategies

As an essential component of learning strategy, meta-cognitive strategy connects closely with learning strategy naturally. Although scholars at home and abroad have made great efforts to discuss learning strategies from different perspectives in the past three decades, they failed to reach a consensus on the definition, classification, relative stability and variability of learning strategy. Nevertheless, all of them attempted to define leaning strategy as a mental and behavioral approach employed by language learners consciously or subconsciously in order to guide their foreign language learning and to improve their learning competence directly or indirectly, that means the main purpose of learning strategy is to facilitate language learning and improve learners' language competence.

With the advance of learning strategies research, many scholars have put forward a variety of strategies, and these strategies are classified differently according to different criteria. Of course, meta-cognitive strategies are included requisite. Meta-cognitive strategies are designed to monitor cognitive progress. Meta-cognitive strategies are ordered processes used to control one's own cognitive activities and to ensure that a cognitive goal has been met. Flagella states meta-cognitive strategies in his meta-cognition theory that meta-cognition is referred to as "thinking about thinking" and involves overseeing whether a cognitive goal has been met. This should be the defining criterion for determining what meta-cognitive [3] is.

In fact, as one component of learning strategies, meta-cognitive strategies do not receive as much emphasis as cognitive strategies for some decades, which is used to help an individual achieve a particular goal while meta-cognitive strategies are used to ensure that the goal has been reached. Until the 1990s, the focus has tended to be on meta-cognitive strategies, and many researchers devote themselves to the study of meta-cognitive strategies, because they explored that there is close relationship between the strategies a learner employs and his performance in foreign language learning. And in their opinion, the use of meta-cognitive strategies helps students to think about their thinking. Meta-cognition theory is also an important theoretical basis for autonomous learning. Numerous studies at home and abroad showed that meta-cognition is the significant psychological mechanism to promote autonomous learning ability, and it plays an important role in language learning, since individuals can be taught to regulation their behaviors and those regulatory activities enable self-monitoring and executive control of one's performance. Meta-cognitive strategy takes learning strategy as the basic theoretical framework, and it has been regarded as an important branch of learning strategy. As one of important research fields in cognitive psychology and educational psychology, the

concept of "meta-cognition" was proposed. They stated that meta-cognition refers to one's knowledge concerning one's own cognitive processes or anything related to them, for instance, the learning-relevant properties of information or data [4]. It contains both cognitive subjects' mental state, ability, mission objectives and cognitive strategies as well as a variety of cognitive awareness, such as planning, monitoring, evaluation and adjustment of their own main activities. Meta-cognition is classified into three components: meta-cognitive knowledge, meta-cognitive regulation and meta-cognitive experiences. Meta-cognitive knowledge is what individuals know about themselves and others as cognitive processors. Meta-cognitive regulation is the regulation of cognition and learning experiences through a set of activities that help people control their learning. Meta-cognitive experience is the cognitive experience and emotional experience associated with conscious awareness. Therefore, meta-cognitive strategies refer to the subjects take the knowledge of ongoing cognitive activity and awareness as objects during the entire cognitive process actively, in order to monitor and regulate them consciously.

### 3. Autonomous Learning

Autonomous learning has been a hot topic of discussion in the field of foreign language education in recent three decades. Since the theory was first put forward in language teaching in 1981, many scholars and researchers at home and abroad have carried out various studies on it. However, it is difficult to summarize autonomous learning precisely, it is necessary to expound the literature review of it. This section will firstly demonstrate the theoretical basis of autonomous learning, then the concepts and some factors for autonomous learning, and the last part will present the review of previous research in this field [5].

The concept of "autonomy" in learning is being discussed more and more frequently in educational field, while it is really a problematic term. Although, it was described in various terms, such as self-directed learning, self-access learning, self-disciplined learning, independent learning, and autonomous learning, learner autonomy, self-monitoring learning strategies, self-assessment learning strategies as well as self-help learning strategies etc. These terms have one element in common, that is, learner-centered approaches which consider learners as individuals with individual needs and rights. Many scholars and theorists have attempted to define autonomous learning in many different ways; and they have carried out different studies and concluded many fruitful results on autonomous learning [6]. Hence, there are various definitions and characteristics of autonomous learning. However, no complete consensus about its concepts has been made, because different scholars have their different interpretations from various aspects. For this reason, some representative concepts will be reviewed in this section so as to insight into the major features and to gain the significance of autonomous learning includes as follows.

As one of the earliest and most frequently quotations, the definition on autonomous learning is in terms of ability. In the same way, little described learner autonomy as a capacity for independent action which is not confined to any one learning context and "the learners psychological relation to the process and content of learning"[7]. By contrast with the above viewpoints, it's easy to find that little complements and expands the concept to a wider range of learner behavior. However, in terms of situation "in which the learner is solely responsible for all decisions". And Bond argues the main characteristic of it, autonomy "is that students take some significant responsibility for their own learning over and above responding to instruction". In addition, autonomous learners have independent capacity depending on ability and willingness, and "willingness depends on having both the motivation and the confidence to take responsibility for the choices required"[8].

Generally speaking, the term of autonomous learning is defined differently. Nevertheless, its definition concerning some features, and they can be concluded as follows: a situation in which learners study entirely on their own; a capacity which is for guiding learning objectives and contents, making decisions and steering independent actions; a set of skills which can be learned and applied in

self-directed learning; the responsibility for learners’ learning exercise and the right to determine the direction of learners learning. Therefore, in this thesis, autonomous learning is also reduced to three subcategories, which are evaluating the learning effect (ELE), monitoring the learning process (MLP) and the degree of depending on teachers (DDT).

**4. Results and Discussion**

All data of quantitative study including questionnaires and scores of CET-4 are processed and analyzed by SPSS17.0 software varying from descriptive statistics and independent samples T-Test to correlation study and multiple linear regression analysis so as to validate the effectiveness of meta-cognitive strategies use in English autonomous learning and academic achievement [9].

**4.1 Overall View on Subjects' MSs and EAL**

Based on online statistical results in background information of the questionnaire, no participants answered they knew MSs very much, and only 10% participants answered they knew a little about it, but more than 48% participants answered they never heard MSs. Meanwhile, only 1% participant answered his EAL competence is very strong, while 9% participants answered their EAL competence is very weak, and more than 56% participants selected the general level. In addition, the second and the third part of questionnaire were conducted and collected all the subjects' general state use of MSs and EAL competence separately, the data were further analyzed by descriptive statistics and the results were displayed in table 1.

Table.1 Descriptive Statistics of MSs and EAL

Categories	N	Minimum	Maximum	Mean	Std. Deviation
Self-monitoring (SMO)	151	1.00	4.50	2.7517	.75194
Self-managing (SMA)	151	1.00	4.75	2.8924	.83392
Self-evaluating (SEV)	151	1.00	4.75	2.7831	.74200
Total MSs	151	1.00	4.58	2.8091	.70950
Evaluating the learning effect (ELE)	151	1.00	4.44	2.7314	.71852
Monitoring the learning process (MLP)	151	1.40	4.30	2.8305	.50425
The degree of depending on teachers (DDT)	151	1.00	5.00	3.1159	.60331
Total EAL	151	1.13	4.32	2.8926	.46941
Valid N (listwise)	151				

Table 2 is the scoring standards of rating scale on English learning strategy, and it shows levels of frequency language learning strategies use. The following discussion of overall meta-cognitive strategies use frequency will take it as reference.

Table.2 Levels of Frequency LSs and MSs Use

Mean	Frequency Scale	Description
4.5-5.0	High	Always or almost always use
3.5-4.4	High	Usually use
2.5-3.4	Medium	Sometimes use
1.5-2.4	Low	Usually not use
1.0-1.4	Low	Never or almost never use

According to table 1, the mean of total MSs and total EAL are 2.8091 and 2.8926 respectively. Meanwhile, each of their three subcategories has no remarkable differences; they are all at a medium level (mean=2.5-3.4). As revealed by table 1 and 2, the mean of both total MSs and its three subcategories are all lower than 3.4, that means the subjects used all above strategies at times. The results reflect that the research subjects have no strong enough consciousness of meta-cognitive strategies, but MSs awareness was considered as one of essential factors to strengthen learners autonomous learning competence[10]. Therefore, their awareness of MSs should be enhanced continuously. So does English autonomous learning.

However, the statistic figures show that the average point of every item of meta-cognitive strategies and autonomous learning are higher than 2.0, it exposes that the subjects have ever used all above strategies and they have a certain autonomous learning abilities, it can prove all subjects have certain meta-cognitive awareness and abilities to make more effectively learning objectives and manage their learning process as well as evaluate their learning results.

#### 4.2 Differences of MSs and EAL between HA and LA Groups

The Independent Samples T-Test was employed to test and analyze whether there is a significant difference between the CET-4 high-achieving (HA) and low-achieving (LA) groups in use of meta-cognitive strategies (MSs) and their awareness and competence of English autonomous learning (EAL). The analysis results were performed in Table 3, and the general tendency and mean differences were illustrated by comparing means; in addition, Table 3 displays the Independent Samples T-Test results of the two different groups' meta-cognitive strategies use and autonomous learning abilities to have a more specific understanding on the testing[10-11].

By comparison, we can find that the means of MSs and EAL are both significant different and there are a certain gap between the high-achieving and low-achieving groups clearly. At the same time, the mean per category is between 2.5 and 3.4, it means total MSs and EAL as well as each of their subcategories are all at a medium level, which reveal that both the HA and LA groups use MSs in their English EAL at times, and they have a certain degree of EAL competence and awareness.

Table.3 Descriptive Statistics of Different Groups' MSs and EAL

Items	CET-4 group	N	Mean	Std. Deviation	Std. Error Mean
Self-monitoring (SMO)	LA	50	2.5300	.61785	.08738
	HA	39	3.0833	.90200	.14443
Self-managing (SMA)	LA	50	2.6850	.69585	.09841
	HA	39	3.1538	1.03335	.16547
Self-evaluating (SEV)	LA	50	2.5800	.67469	.09542
	HA	39	3.1346	.88638	.14194
Total Meta-cognitive Strategies (MSs)	LA	50	2.5983	.56887	.08045
	HA	39	3.1239	.90116	.14430
Evaluating the learning effect (ELE)	LA	50	2.4667	.59051	.08351
	HA	39	3.1311	.88076	.14104
Monitoring the learning process (MLP)	LA	50	2.7400	.61445	.08690
	HA	39	2.9103	.42968	.06880
The degree of depending on teachers (DDT)	LA	50	3.1600	.81716	.11556
	HA	39	3.0641	.37922	.06072
Total English Autonomous Learning (EAL)	LA	50	2.7889	.58443	.08265
	HA	39	3.0351	.35897	.05748

## 5. Conclusion

The correlation analysis was adopted to study the relationship between the use frequency of MSs and EAL competence as well as EAA, namely the scores of CET-4. The finding shows that there is not only a positive and significant correlation between MS and EAL, but also the use frequency of MSs and its three subcategories prove to be closely correlated to EAL; the research subjects' MSs and EAL

as well as English achievements display greater correlation, which means the subjects' MSs use frequency and their EAL competence and awareness affected each other internally, on the one hand, these two variables may influence on the EAA, that is scores of CET-4 directly. The result reveals improving the subjects' awareness of MSs will help students to monitor their learning process, manage their activities and evaluate their learning effect and improve their autonomous competence, thus enhance their English academic achievement finally. In short, the use of MSs will affect subjects' EAL competence and EAA. On the other hand, subjects' EAL competence also has certain backlash to EAA.

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### References

- [1] Yu Liang,Haili Feng. A Case Study of Meta-cognitive Strategy Training in College English Writing, Journal of Hainan Radio & TV University,vol.3(2012),130-135.
- [2] Fen Hou.An empirical study on Zhuang Nationalities' Meta-cognitive Strategy Use and Listening Achievement, Overseas English,vol.10(2014),50-52.
- [3] Zhou Yongsheng, Zhang Qi, The Back-up and Restoration of Operating System of the Computers used for Archive Management[J] ,Sichuan Archives, vol.6(2013),41-42.
- [4] Hongqin Zhang.an Empirical of Meta-cognitive Strategy and the College Class Study Style Construction,J.Shanxi Agric.Univ.(Social Science Edition)vol.4(2013),367-370
- [5] Jianxian CAI, Xiaogang RUAN. Bionic autonomous learning control of a two-wheeled self-balancing flexible robot, J Control Theory Appl,vol.9(2011),81-88
- [6] Fengzong Xia. Cultivation of Autonomous Learning Ability and Intercultural Communication Competence in Foreign Language Teaching, Overseas English,vol.4(2013),29-32
- [7] Hong xia Gao, Chun Liu. "Autonomous Learning"Practice and Exploration of Teaching Method,vol.4(2017),157-158
- [8] Li Qun, The Characteristics of Computer Aided CET4 and CET6 and the Solutions[J],Science and Education Collected Works,vol. 3,( 2014):36-37.
- [9] Yu Jifei, Wang Yafei, Wu Min, The Analysis and Design of the System of Oral English Examination via the Internet[J],the Education Information, vol.7( 2015):49-50.
- [10]Wang Xianghong, Reflections on the Reform of CET 4 and CET6[J], Science and Technology Information, 2015,(27):609.
- [11] Zhang Saibin, Thinking the CET-4/CET-6 Examination on the Internet[J], Higher Education Forum,2012,(2):76-78.