

Theoretical Basis Related to English Autonomous Learning of My PhD Dissertation Research

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Abstract: My PhD dissertation research topic is “The Impact of Motivation Cultivation on English Autonomous Learning among University Students in Hunan, China-A Mediating Role of Learning Strategy”, so the dependable variable of my topic is “English autonomous learning”. Through reviewing the literature about theories, I figured out such theories as theory of self-instruction, theory of cognitive psychology and theory of constructivism psychology have laid very solid foundation for the research and development of theories of English autonomous learning. The rise and development of the above theories have laid a solid theoretical foundation for the research on the theory and practice of autonomous learning, and studied the basic attributes of autonomous learning, psychological wit, influencing factors of autonomous learning and the cultivation strategies of learners’ autonomous learning ability from different perspectives, thus promoting the research and further development of autonomous learning theory into guiding practice. This paper will explore the above three theories one by one in detail.

The study of autonomous learning has a very long history. The philosophers Socrates, Plato, Aristotle, and many other famous educators such as Rousseau, Stowe, and Dewey were all active advocates of the idea of autonomous learning in early Western academia. After entering the middle of the 20th century, with the birth and rapid development of the theory of information processing psychology, Vygotsky's theory of speech autonomy was widely recognized by the Western academic community, and later cognitive psychology and the advent and development of constructivist theory, both of which have laid a solid foundation for the research and development of autonomous learning theory^[1].

1. Theory of Self-Instruction

Vygotskian and Luria, famous psychologists in the former Soviet Union and the main representatives of the Veler school, are the founders of the autonomous theory of speech. According to the Villerous school, self-speech plays the role of behavioral antecedents in the process of self-regulation and self-control of individual learning behaviors, specifically stimulating,

promoting, regulating and maintaining the generation and development of behaviors by providing various discriminative behavioral guidance lines and conditioned reinforcers. The learner is individual. This verbal autonomy ability is gradually formed and developed through internalized behaviors.

By the time children begin to use the words that adults often use to guide their actions, a language self-monitoring ability is already developed in children, which initially manifests itself as a form of interpersonal speech (vocal) self-monitoring. When this internal language emerges, the individual learner truly has his or her own internal speech (silent) self-monitoring, and then the individual learner can control and regulate his or her behavior through internal speech. The development and further deepening of this level of verbal self-monitoring depends on the changing verbal response of the individual to the external world. Among them, the verbal guidance in the external environment plays a very important role, and it is these social interactions Verbal instruction and responses constitute individualized content.

In 1962, Vygotsky's classic work "Thinking and Language" was published in English, and many of the ideas in this work immediately attracted the attention of the western psychological community, and were soon cited by many scholars in the study of learning problems. According to the Vygotskies, autonomous learning is essentially a verbal autonomous process, a dynamic process in which individual learners use their own internal speech to actively regulate their own learning. The acquisition of learners' autonomous learning ability is the result of the internalization of their external speech into autonomous speech, which mainly depends on the results of social interaction between children and adults. If the teacher can teach the students the basic steps, rules, and learning strategies in the order in which the words are internalized, the words can become an internal discourse for students, and finally the students can get a self-monitoring ability.

Vygotsky's theory of verbal autonomy regards autonomous learning as the process of verbal autonomy, and this school emphasizes the self-orientation and autonomy role of self-centered speech in learning activities. Meichenbaum (1977) has designed and developed a set of autonomous learning training programs according to the law of speech internalization, and its basic steps are as follows: 1) Teachers should speak out loud the appropriate learning rules and learning procedures when performing demonstration learning tasks; 2) Teachers speak out loud instructions to students as they perform learning tasks^[2]; 3) The student's own narration of the instruction (self-speech) aloud while performing the task; 4) The student whispers the instruction (fades) while performing the task; 5) Students silently recite instructions while performing learning tasks. The results of the study show that this training method is indeed capable of: Effectively improve students' academic performance. (Meichenbaum D. 1977:97; Quoted in Pang Weiguo, 2003).

2. Theory of Cognitive Psychology

The theory of cognitive psychology is an important psychological theoretical basis for autonomous learning, which can be divided into early cognitive psychology and modern cognitive psychology according to different stages of development. Early cognitive learning theories had different academic schools, such as Kohler et al.'s "epiphany" or Gestalt theory, and Tolman's "Cognition-expectation said". These theories are mainly based on the early theories of animal psychology, which study cognition at the perceptual level, so these early theoretical studies are of little significance for language teaching. There are also many different academic schools of thought in modern psychological theories of cognitive learning. The most famous of these are Burner's "Cognitive-Discovery Theory" and Ausubel's Theory of Meaningful Speech Learning and Gagne et al.'s information processing theory (Xu Jinfen, 2007:38).

Burner and Ausubel, the famous contemporary American educational psychologists, are the

representatives of modern cognitive psychology theory. Their research shows that learning is the process of forming cognition through cognition, acquisition of meaning, and intention, and learning is the organization and reorganization of cognitive structures (Zhang Dajun 1999:60). Modern theories of cognitive psychology emphasize the role of existing knowledge and experience (i.e., the role of the original cognitive structure), as well as the internal logical structure of the learning material itself. There are significant differences in the academic views of Burner and Ausubel on how to acquire new meanings: Ausubel emphasizes that student learning should be based on meaningful receptive learning, because this learning is directed and taught by the teacher the most economical, fastest and most effective way to acquire knowledge (Zhang Qi, 1999:206); Burner (1997:34), on the other hand, emphasizes the need to impart the necessary knowledge structures in the classroom and to allow students to be self-sufficient and to be aware of the importance of discovering a reasonable balance of facts, concepts, and principles (Qi Hongbo, 2002:85). Information processing theory is one of the most important theories of modern cognitive psychology, and there are even scholars in the domestic academic circles. Information processing theory is synonymous with modern cognitive psychology. Information Processing Theory (Burden, 1997:15) believes that learning is the process by which learners absorb, process and process information. Simon, a well-known American information processing psychologist, believes that a perfect information processing system should generally have the following six basic functions: (1) Input symbol function; (2) Output symbol function; (3) Storage symbol function; (4) Copy symbol function; (5) Establish the function of symbol structure; (6) Conditional migration function. From the above six different functions, it can be seen that the research focus of information processing theory is on the attention, perception and memory functions of cognition. (Quoted from Zhang Qi, 1999: 267)

The important implications of the relevant research results of modern cognitive psychology for the concept of learners' autonomous learning are as follows: 1) Teaching must adhere to the learner-centered, and the main task of teaching research has shifted from studying how teachers teach to studying students' "how to learn"; 2) Bruner's "cognitive-discovery theory" emphasizes that students can discover facts and understand basic concepts and basic principles autonomously under the guidance of teachers. At the same time, modern cognitive psychology theories also attach great importance to how teachers can give meaningful teaching guidance to students and how to combine information processing theory with them Rational design of the syllabus, etc.

The school of social cognitive theory is another important school of theory in cognitive psychology, which was proposed by Bandura's disciples and his successors. Based on Bandura's (1977, 1986) theories of individual, behavior, and environment interaction and self-regulation, the school of social cognitive theory has made a unique interpretation of autonomous learning based on the latest research results of cognitive psychology. Its famous representative, Zimmerman, argues that students learn autonomously when they are an active participant in all three aspects of metacognition, motivation and behaviour (Zimmerman 1990, 1997). Specifically, Zimmerman argues that if a student is able to actively and flexibly apply metacognitive learning strategies, if he or she is able to actively engage in self-motivation, self-observation, self-judgment and self-reaction to his or her own learning behavior, then his learning is autonomous learning. Later, Zimmerman gave a detailed explanation of the essence of autonomous learning from six aspects: learners' learning motivation, learning methods, learning time, learning behavior, learning material environment, and the social nature of learning. According to Zimmerman, in essence, learners' motivation for autonomous learning should be intrinsic or self-motivated, their learning methods should be planned or practiced to the degree of automation, and the learning time should be timed and effective. Autonomous learners are aware of the results of their own learning and are able to actively monitor their own learning process. They can also take the initiative to create a social

environment and material conditions conducive to autonomous learning. The social cognitive school has conducted a thorough and detailed study of the factors that affect autonomous learning that they can recognize. Therefore, there are many factors that affect autonomous learning, which can be divided into three categories: 1) Internal factors; 2) Behavioral factors; 3) Environmental factors. Internal factors that restrict learners' autonomous learning often include self-efficacy, attribution tendencies, goals set, learning strategies, and emotions. Among these influencing factors, self-efficacy and learning strategies are crucial, as they are two key variables that affect autonomous learning, and they can directly influence learners' motivation and use of learning methods. The school of social cognitive theory also puts forward some methods and suggestions to promote students' autonomous learning: 1) Enhance learners' self-efficacy; 2) Teachers should teach students how to set appropriate learning goals; 3) Teachers should carry out systematic teaching of learning strategies; 4) Teachers should be able to guide students to self-monitor the learning process^[3]. 5) Teachers should guide students to provide appropriate attribution feedback on their own learning. 6) Teachers should teach students to take the initiative to make use of the social and material resources of learning. (Pang Weiguo, 2003:34).

The theory of cognitive psychology provides a solid and powerful theoretical basis for college students' autonomous English learning based on the network environment, and the cognitive psychology theory tells us that some factors of students themselves will have a great impact on the process of college English autonomous learning, including learners' choice of learning tasks, the formulation of learning plans, selection and application of learning strategies, self-monitoring of the learning process and evaluation of learning results.

3. Theory of Constructivism Psychology

Constructivist psychological theories have their origins in the schematic theories of Bartlett (1932) and Piaget (1969, 1970). Jean Piaget (1896-1980) was a well-known Swiss psychologist and biologist, and he was one of the most influential figures in the development of contemporary behavioral science. Piaget's most important contribution to cognitive theory was the thorough study of the characteristics of human cognitive development and the identification of several different stages of development of children's cognitive development. Piaget believed that the functions---adaptations and organization of cognitive development are eternal, while the structure---schema of cognitive development is in a process of continuous decomposition and integration. Therefore, the development of cognition is in fact the unity of its function and structural change. According to the characteristics of cognitive development, Piaget conducted an in-depth study of children's cognitive development, and he identified several different stages of children's cognitive development: 1) Sensorimotor stage (0-2 years old); 2) Pre-arithmetic stage (2-7 years); 3) Specific arithmetic stage (7-11 years old); 4) Formal operation stage (11-16 years old). According to the four different stages of children's cognitive development, Piaget (1970) argues that: 1) Children have the ability to actively construct schemas, and through self-regulation of the process of assimilation and adaptation, children's cognitive schemas can be continuously developed and improved; 2) Children are not only able to construct cognitive schemas about the external world, but also self-schemas; 3) Learning is actually reconstructing a new cognition on the basis of the original schema. The process of knowing the schema, which takes place in the interaction between the subject and the object, is not completely subject to the environment.

In the process of interconnecting and interacting with their surroundings, children gradually construct their knowledge of the external world, so that their own cognitive structures can be developed. Piaget's theory of cognitive development is constructivism. The creation and development of learning theory provides a theoretical basis. According to cognitive schema

constructivism, self-schema is a dynamic and organized store of self-knowledge (Markus & Nurius, 1986, 1987), which has four different dimensions: emotion, efficacy, time, and value (Garcia & Prinrich, 1994). The self-schema determines the self-regulation behavior of an individual. Paris (1989) and Byrnes (1989) further argue that children construct not only their own schemas, but also their own theories of learning. Children's learning theory is a general and inclusive learning theory, which includes four main components: 1) Self-ability theory; 2) Effort Theory; 3) Learn mission theory; 4) Theory of Learning Strategies. Among them, the theory of self-ability contains many contents, such as the awareness of one's own learning ability, the sense of self-responsibility, and the confidence to exert control over the expected results. The effort theory mainly answers two questions: (1) Why study? (2) How much effort should be put into learning? Learning task theory also includes two aspects: setting learning objectives and analyzing task structure; The theory of learning strategies contains three types of information: (1) Declarative knowledge (mainly the question of what the strategy is); (2) Procedural knowledge (questions about how to use strategies); and (3) Conditional knowledge (questions that explain when and why strategies are used effectively)^[4]. Based on this constructivist theory of child learning, we know that children learn when they are self-responsible for their own learning, have a high sense of competence, know how to put in the effort, how to set appropriate learning goals, how to analyze learning tasks effectively, and are able to flexibly use learning strategies, develop and implement learning plans, and monitor their own learning process to the level of autonomy. (Pang Weiguo, 2003:37).

According to the theory of cognitive constructivism, learning is a process in which learners actively and actively accept external information, and digest, organize and absorb it on the basis of their original cognitive structure, so as to continuously improve their own cognitive structure. Constructivist learning theory points out that learning is the process in which learners actively construct their own cognitive structure, and this theoretical discovery reveals that learning is the initiative and inevitability of human self-development, and he emphasizes that internal factors are the key factors that determine learning. In general, intellectual and non-intellectual factors are intrinsic factors to successful learning, while many factors other than the learner's body that contribute to learning are extrinsic factors in the learning process. According to the dialectical materialist viewpoint, internal causes play a decisive role, and external causes act through internal causes. Leave the learner active, active, and autonomous, learning cannot be carried out effectively. At the same time, constructivist learning theory also emphasizes cognitive processes. The role of the socio-cultural and historical context in which the learner lives. Constructivist learning theory holds that human beings gradually construct knowledge about the external world in the process of interrelationship and interaction with the surrounding social environment and develop their own cognitive structure. Cognitive constructivism argues that the formation of autonomous learning theories is largely limited by their level of cognitive development. The higher the level of cognitive development, the more important it is to enhance their ability to learn independently Function.

Social constructivist theory is a branch of constructivist theory, represented by Williams & Burden (1997). Drawing on the essence of humanism, cognitivism and social interaction theory, they further developed constructivism, and their theory of social constructivism should be said to be the most complete constructivist theory in the academic world so far. According to social constructivist theory, there are four key elements to the teaching model: the teacher, the student, the task, and the environment, and these four factors interact and become integrated with each other to form a dynamic and evolving process. In this process, no factor can exist independently of other factors. Constructivist theory provides important implications for modern foreign language teaching. Specifically, constructivism-based foreign language teaching must do the following: (1) Teachers should not be seen as a process in which teachers impart knowledge to students, but rather as a process in which students actively construct their own knowledge based on external information

and through their own background knowledge. From the perspective of constructivism, teachers should not play the role of "stage saints", but "guides". They provide students with the opportunity to test their understanding. (2) If learning is based on pre-existing knowledge, then teachers should understand students' pre-existing knowledge and create a learning environment that enables students to effectively integrate old and new knowledge. (3) If students can only use their existing knowledge and acquire new knowledge in a new environment, then teachers should involve students in learning activities and facilitate their acquisition of new knowledge by creating an environment for students to use their existing knowledge. Teachers should also encourage group activities so that group members can collaborate and influence each other. Students compare themselves to their peers so that they can understand more deeply and clearly^[5]. (4) It takes time to actively build new knowledge. There is ample time for students to reflect on the learning process, connect old and new knowledge, and consider why the new understanding improves (or distorts one's own perception of the problem) (Xu Jinfen, 2007:51-52).

In short, constructivist psychology emphasizes that the learning process should be student-centered, respect students' individual differences, and pay attention to interactive learning styles, which in essence should give full play to students' subjectivity and initiative, and promote learners' individualized learning and cooperative learning on the basis of their original knowledge and experience, so as to promote the reconstruction of students' knowledge, and therefore, promote learners' individuality. Institutionalization, collaboration, and learner autonomy are all important principles of constructivism.

4. Summary

The earliest ideas about autonomous learning originated from the naïve views of ancient Greek philosophers such as Socrates, and also attracted the attention of many famous educators such as Rousseau, Stowe, and Dewey, who were all active advocates of the idea of autonomous learning in the early days. However, the development trajectory of autonomous learning theory has been integrated with the traces of modern scientific development, especially after entering the 50s of the 20th century, with the birth and rapid development of information processing psychology, the research on autonomous learning theory has been developed more widely and deeply. Operationalist theory, represented by Skinner, mainly regards autonomous learning as an interdependence between learning and self-reinforcement. It is believed that the process of autonomous learning should generally include the three sub-processes of self-monitoring, self-instruction and self-reinforcement. The Vygotsky school of speech autonomy theory has been widely recognized in Western academic circles, and the school of speech autonomy theory believes that autonomous learning is the process of language autonomy, and they emphasize the orientation and guidance role of self-centered language in learning activities. Later, with the rise and development of humanistic psychology, the theory of autonomous learning has been further studied in depth and systematically. Humanistic psychology, represented by Rogers, believes that autonomous learning is the inevitable result of the development of the individual's self-system, and that autonomous learning is restricted by the structure and process of the self-system. The structure of the self-system usually contains components such as self-concept, self-worth, and self-intention. Modern cognitive psychology based on information processing theory is an important psychological theoretical basis for autonomous learning. Zimmerman, a well-known representative of the school, believes that if a student can actively and flexibly apply metacognitive learning strategies, be able to actively engage in self-motivation, and be able to actively self-observe, self-judge and self-react to his own learning behavior, then his learning is autonomous learning. Constructivist learning theory points out that learning is the process by which learners actively construct their own cognitive structures, in which

internal factors play a decisive role, and many factors other than the learner's subject contribute to learning. Constructivist learning theory emphasizes the role of the socio-cultural and historical context in which the learner is located in the cognitive process Step by step to construct knowledge about the external world, so that one's own cognitive structure can be improved and developed.

The rise and development of the above theories have laid a solid theoretical foundation for the research on the theory and practice of autonomous learning. Thus, we studied the basic attributes of autonomous learning, psychological wit, influencing factors of autonomous learning and the cultivation strategies of learners' autonomous learning ability from different perspectives. Therefore, we promote the research and further development of autonomous learning theory into guiding practice.

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References

- [1] Holec H. *Autonomy and Foreign Language Learning* [M]. Oxford: Pergamon Press, 1981,77.
- [2] Zhang Rui. *Analysis of the influencing factors of university students' English autonomous learning ability from the perspective of complex theory*[J]. *Journal of Foreign Language Research*, 2021(2):52-55.
- [3] Li Banban, Xu Jinfen. *The Effect of Achievement Goal Orientation on English Autonomous Learning Ability and the Mediating Role of Self-efficacy*[J]. *Chinese Journal of Foreign Languages*, 2023, 11(3):59-68.
- [4] Xu Jinfen, Li Banban. *The influence of learners' controllable factors on university students' English Autonomous Learning Ability*[J]. *Modern Foreign Languages*, 2020, 37(5): 647-656, 730.
- [5] Bai Guiqin. *An Empirical Study on university English Autonomous Learning in the Learning Community Environment* [J]. *Journal of University (Philosophy) Humanities and Social Sciences*, 2022, 42(3):152-156.