SIMULATION ANALYSIS OF A NOVEL ENGLISH TEACHING METHOD BASED ON COGNITIVE PSYCHOLOGY

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Abstract
In recent years, cognitive psychology and many other emerging technologies have been introduced to improve English teaching. Drawing on cognitive psychology, this paper fully explores the psychological features of students in the cognition of English vocabulary, and puts forward a novel teaching method for English vocabulary, using problem-based learning. Then, a comparative experiment was carried out on English majors between the proposed teaching method and the traditional method. The basic situation, classroom performance, and learning ability of the subjects were measured through observation, exams and interviews. The results show that, due to problem-based learning, our method could effectively improve the learning effect and knowledge acquisition of the subjects, enabling them to form a personalized language learning mechanism. The research results provide an important reference for psychology-based English teaching.

Key words: Cognitive Psychology, English Teaching, Simulation Analysis, Problem-Based Learning.

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INTRODUCTION
Reading is a psychological process involved by multiple factors to obtain information from visual channels and visual centers. Improving students’ English reading ability and efficiency is one of the most important purposes of English teaching and learning (English, 2016). How to effectively carry out the teaching of grammar has aroused widespread concern of experts and scholars in the education field. With the development of English education and the requirements of reform in China, cognitive psychology has a great influence on the educational concept, teaching mode and curriculum structure of English teaching (Greca, Seoane, & Arriassescq, 2014). Vocabulary acquisition is not only affected by the inherent characteristics of vocabulary itself, but also by the cognitive ability of learners. Therefore, the vocabulary learning efficiency of students can be effectively improved by analyzing the psychological cognition process of vocabulary acquisition and finding the teaching method that accords with people’s cognitive psychology in the process of English vocabulary teaching (Crone & Portillo, 2013). Cognitive psychology, as one of the branches of psychology, has been introduced into language teaching by more and more people. Many teachers have begun to use cognitive psychology to guide middle school teaching and try to explore more effective ways of teaching in order to achieve the high efficiency of classroom teaching (Dega, Kriek, & Mogese, 2013). It is an important task to study how to enable students to master effective English learning strategies, realize the continuous development of knowledge learning before and after English, achieve the connection between knowledge and ability of English learning, and provide access for professional knowledge learning (Chetail, Treiman, & Content, 2016). At the same time, playing the instrumental role of language is an important...
task for higher education. Psychological research shows that the influencing factors of people's cognitive activities can be divided into two categories (Malouff, Emmerton, & Schutte, 2013). One is intelligence factor, which is the reflection of human brain on things, including perception, memory, thinking and imagination. It directly participates in the specific operation of understanding objective things. Another kind is the non-intellectual factor, which is the attitude towards objective things, including motivation, interest, emotion, will, character, etc. It does not directly participate in the specific operation of understanding objective things, but plays a dynamic coordinating role on intellectual factors (Hartnett, 2013; Dankbaar, Alsma, Jansen et al., 2016; Rey, 2010).

In 1963, the theory of meaningful speech learning was proposed (Homa, Hackathon, Brown et al., 2013). In 1992, the basic theory of cognitive psychology was proposed, which put forward the characteristics of people's learning, especially the characteristics of students' learning. First, it emphasizes the subjective initiative of students, and requires teachers to pay attention to students' motivation, initiative and enthusiasm of learning (Tall & Katz, 2014). The second is to emphasize the mediating role of language in 2003, based on the psychological cognitive process of English vocabulary learning (Seung, Park, & Jung, 2014). In 2006, the enlightenment of psychological cognition to English vocabulary acquisition was adopted (Wang & Burton, 2013). In 2012, the basic theory of mental vocabulary and vocabulary from cognitive psychology was proposed (Svoboda & Passmore, 2013). In 2016, the basic theory of cognitive psychology was adopted in English education, which was conducive to a comprehensive understanding of the interrelationship between these two disciplines so as to better serve English teaching activities (Shupe, 2013). It is necessary to explore the cognitive law of students in reading activities, apply the principles of modern cognitive psychology to guide their learning, and seek effective ways to improve English reading ability and efficiency (Dickes & Sengupta, 2013). The learner-centered learning method based on problems has been widely used in English teaching in western countries and highly appraised by language teachers. Because the unstructured problem-based learning can also improve students' practical application ability, the learning strategies will also have a better development and promotion effect in the teaching methods of sending seeds and using them as the educational objectives (Raes, Decuyper, Lismont et al., 2013; Churchill, 2014; Eckhardt, Urhahne, Conrad et al., 2013). Cognitive psychology holds that learning is the result of the interaction between individuals and their environment, and learners do not passively accept external influences and external information (Dabson, Magin, Heading et al., 2014). From the perspective of English teaching, the trend of contemporary teaching psychology research is based on the theory and method of cognitive psychology (Crippen, Archambault, & Kern, 2013). By exploring the variation law of learners' cognitive structure, the author explores the psychological mechanism of language knowledge and cognitive skills acquisition, and reveals the interaction between English teaching and cognitive development (Delany, Miller, El-Ansary, 2015). Traditional English teaching is mostly based on teaching language, but it is not flexible in practical use. Therefore, this teaching method can no longer meet the needs of social development, especially for English teaching in higher vocational colleges whose purpose is to cultivate talents (Kösem & Özdemir, 2014). Therefore, English teaching reform must be carried out. How can non-English majors in Colleges and universities effectively carry out English learning, and make the most use of limited English teaching resources to cultivate the practical English ability that matches students' professional ability, so as to improve the students' English level and the strategy level of English learning (Filz & Gurung, 2013; Soysa, Dunn, Dottolo et al., 2013; Hughes, Lyddy, & Kaplan, 2013). It is evident that the proper choice of English learning strategies is the teaching objective to be accomplished in higher education at the present stage so as to combine students' major with English learning. When students are interested in English, they will show initiative and self-consciousness (Madson, Schumacher, Noble et al., 2013). We can examine the three aspects of students, namely attention state, emotional state and consciousness state. If students pay attention to listening, reading, and problems raised by teachers, it indicates that they are actively thinking. In the process of completing learning tasks, it should be examined whether students have enthusiasm and positive emotional state (Pearson & Richardson, 2013).
MATERIALS AND METHODS

We analyze the effects of cognitive features on the short-term memory of individuals. "Psychologists call the words in permanent memory as psychological dictionary." The vocabulary memory of the human brain is like a dictionary containing many entries, each of which includes pronunciation, spelling, semantics, grammatical functions, and pragmatics. Identifying a word input by sensory information is the process by which the feature of the word activates the corresponding term in the psychological dictionary. It is a psychological process of studying humans’ cognition of things. By regarding the advanced psychological reaction processes such as attention, memory, language, and perception as the research content and object, the recognition capability of human beings is studied by means of acquiring, modifying, processing and storing information. The inner reaction mechanism in the process is understood and its psychological reaction activities and behavioral language are explained. With a good foundation and conditions of English education (such as the areas or schools where English courses have been offered since the first grade), the requirement of corresponding grades can be properly raised without increasing the burden on students. To a certain extent, the burden of English teaching in primary schools at the beginning of the first grade is relatively lighter, but the teaching difficulty of children in the lower grade whose cognitive ability is relatively weak is increased, which is more prominent in grammar teaching. Reading is a complex cognitive activity for individuals to process visual information. Firstly, reading includes five basic cognitive activities: visual information input, information processing, information storage, information extraction and information output. Secondly, cognitive psychology research finds that students’ attention is another important psychological factor affecting their reading efficiency. The core of meaningful learning theory is assimilation, that is, the assimilation of original cognitive structure to new knowledge, and the result of the assimilation of new knowledge develops the original cognitive structure. Logically meaningful new materials must be incorporated into the proper parts of students’ original cognitive structure. Only after the interaction between old and new concepts can new materials acquire meaning. Therefore, the essential content and its organizational characteristics of students' original cognitive structure are the most important factors affecting new meaningful learning. The effects of different cognitive characteristics on the short-term memory of individuals are shown in Table 1 and Figure 1. A survey of the application of English learning strategies in 4 grades is shown in Table 2 and Figure 2.

Table 1. Effects of different cognitive characteristics on short term memory of individuals

|                  | Accuracy of vocabulary test | Accuracy of effective answer |
|------------------|----------------------------|-----------------------------|
| Purposeful extract | 83%                        | 86%                         |
| Disorderly search for answers | 53%                        | 58%                         |

Figure 1. Effects of different cognitive characteristics on short term memory of individuals

Figure 2. A survey of the application of English learning strategies
Table 2. A survey of the application of English learning strategies

| Class     | Memory strategy | Cognitive survey |
|-----------|-----------------|------------------|
| Class one | 2.68±0.65       | 5.98±0.77        |
| Class two | 2.42±0.63       | 2.92±0.67        |
| Class three| 2.52±0.54       | 5.87±0.53        |
| Class four| 2.66±0.84       | 2.86±0.68        |

This paper focuses on information processing theory, language processing and language acquisition, and processes them according to language input. The flow of language output is completed. The purpose of speaking and writing is to achieve training and strengthen language materials based on the language output information that they are learning. For task-based teaching, the main emphasis is on learning language in practice, which requires actual tasks and certain meaning as well, that is, to unify language learning and application. The actual learning is to create scenes of daily life and to develop corresponding tasks so that students have the ability to complete tasks. Before the formal teaching, we must do a good job of ideology mobilization and teaching aids, and explain the significance of implementing the teaching strategy experiment to all students. First of all, there is a problem of time-consuming and poor effectiveness in the teaching of foreign language vocabulary. The main reason is that because there is no emphasis on the individual differences of students and the learning process of students in the teaching, and the cognitive characteristics of students are not analyzed, so they are not able to teach students in accordance of their aptitude. Therefore, teachers can only find a suitable and effective foreign language vocabulary teaching path according to the students' cognitive rules and the study of the nature of foreign language acquisition. In addition, students should be organized to study English teaching methodology and cognitive psychology theory carefully after school, and different forms such as lectures, oral questions and answers, written answers and papers can be adopted so that students can have a profound understanding and experience of cognitive psychology. Under the guidance of active learning theory, teachers should strengthen their self-cultivation and coordinate the relationship between teachers and students. Teachers are organizers of the teaching process, guides to achieve teaching objectives, and play a leading role in the teaching process. The results of student assessment of problem-based learning in English are shown in Table 3 and Figure 3. The results of English test for 4 grades are shown in Table 4 and Figure 4.

Table 3. Survey results of student assessment of problem-based learning in professional English

| In English, ask questions about your specialization | Search English materials to help professional learning |
|---------------------------------------------------|------------------------------------------------------|
| Often                                             | 12%                                                  |
| Sometimes                                         | 40%                                                  |
| Very seldom                                       | 48%                                                  |

Figure 3. Survey results of student assessment of problem-based learning in professional English

Figure 4. Comparison of English test results between 4 classes
This paper studies various language units in language learning, namely phonemes, syllables, words, phrases/phrases, sentences, and discourse. These units exist at different levels and constitute various complex hierarchical organizational structures. The automatic function of knowledge is mainly reflected in the following three ways: firstly, knowledge plays its role by word meaning, and the meaning of words has its association or causal background. The activation of the meaning of words is equivalent to activating a set of meanings or knowledge. Secondly, sentence understanding requires the construction of sentence proposition structures through real words and various non-verbal knowledge. Thirdly, the understanding of the local structure in the discourse requires many knowledge-based psychological strategies, such as the matching of old and new information, old information resetting, and common topics. Whether we are learning a native language or a foreign language, the first thing we hear is the pronunciation and phoneme structure of the word, so the voice leaves a sound memory in the sensory memory. Sound image memory provides voice data for the extraction of the word in the future. The duration of sound image memory is eight times that of image memory. Therefore, in order to prolong the function time of words in sensory memory, it is better to combine listening with reading. The basic unit of short-term storage is chunking. According to the theory of chunking cognition, when learning new words, we should not memorize letters by letters, but take the words we have learned as a memory unit. In this way, the short-term storage load can be reduced and the memory efficiency can be improved. Learning is the process of cognitive behavior in organizing information and processing the acquired information. Knowledge is formed through the interaction between objective things, teaching and learning, and the integration of psychological structure, experience and knowledge concept. Many complex and dull grammatical phenomena, such as tense and voice, change of part-of-speech, and other types of regular verbs in different tenses, are different from the linguistic phenomena of Chinese grammatical features.

The results of the parameter setting and the fitness function values are compared by simulation analysis, as shown in Table 5 and Figure 5.

**Table 5. Comparison of parameter setting results and fitness function values of simulation analysis**

| Tense voice | Class shift | Other classes of regular verbs |
|-------------|-------------|------------------------------|
| Result value | 12.35 | 14.59 | 17.21 |
| Function value | 14.11 | 16.54 | 18.77 |

The predictive methods is conducive to understanding in English reading. For example, sentences can be understood from the prediction and recognition of real words. When recognizing the components of a sentence, it is also necessary to find a meaningful word that is appropriate for that component. Taking noun phrases as an example, after identifying a qualifier or a number, it can be predicted that the end of a noun is a noun phrase. The constructivist teaching mode emphasizes that the learning content should include the learner’s needs and the various sounds, images, words, animations and other information stored in the existing knowledge structure. It should also include the individual’s own knowledge
structure and thinking mode in the learning group. The full use of the existing information resources and learning content is conducive to the learner’s meaningful construction of learning. According to the simulation analysis research: some students have pre-planned in the study, but they still lack the self-adjustment and management awareness in the actual operation, such as: the proportion of “Review and use them often consciously”, “often forget to review and consolidate”, “pre-assault”, “adjustment strategy”, “summary results”, “summary errors”, “regular review”, and “regular inspections” is very low. In addition, they rarely consciously expand their vocabulary through extracurricular reading, and 86% of students use textbooks as the main way to learn vocabulary. Most students tend to cope with the lesson. When the teacher says something in class, he will "read" it and follows the teacher’s rhythm. In addition, some students have the habit of reviewing vocabulary before the exam and they seldom review and check their vocabulary learning regularly. Such a method may help them to pass the exam, but it is not conducive to the long-term improvement of vocabulary level. Therefore, it is a good attempt to understand and apply the characteristics of cognitive psychology to task-based English teaching, and it is of strong operability. The comparison between traditional teaching mode and cognitive psychology vocabulary teaching mode is shown in Table 6 and Figure 6.

Table 6. Comparison of vocabulary teaching modes between traditional teaching mode and cognitive psychology

| Vocabulary teaching mode of cognitive psychology | Accuracy of vocabulary test | Accuracy of effective answer |
|-------------------------------------------------|----------------------------|-----------------------------|
| Traditional teaching mode                        | 61%                        | 65%                         |

RESULT ANALYSIS AND DISCUSSION

According to the prototype theory, there is one most basic and core meaning of all relevant meanings of a word and this meaning is the prototype of other meanings. Other meanings are based on a semantic prototype, further extended or radiated, thus forming the radiation category of the meaning of the word. In addition, the degree of abstraction of the meaning of the word is also continuously improved. Therefore, when the teacher explains the meaning of the word, he needs to find out the relationship between the meaning of the prototype and other meanings, and understand the meaning in the specific context. According to the structure of the pre-mission phase, the ring phase, and the language focus phase, the implementation steps can be as follows: first, the pre-stage, which mainly introduces the task and activates the cognition existing in student’s mind to stimulate their interest and enthusiasm. The second intermediate link is task initiation, which is an important stage. It creates opportunities for students to express language as much as possible. Through mutual communication, they understand and consolidate the language knowledge they have learned. English teaching method should follow its relevant English teaching principles: student-centered English teaching. Emphasis is laid on in-depth study and practice on the premise of understanding language and mastering language rules. Your mother tongue should be used to learn, analyze and correct erroneous understanding. All kinds of cognitive activities are around us in real life, which constantly interact with tools and others. However, because the object of information processing research is the inner world of the brain and the process of its activities, the interaction with the external world is often
neglected. And when we look at the behaviour of everyday life, we can immediately understand that it is ridiculous to think with the isolation from the outside. The teaching evaluation table of the new teaching mode of students is shown in Table 7 and Figure 7.

Table 7. Student learning assessment form

| Vocabulary teaching mode of cognitive psychology | Experience of autonomous learning | Experience of cooperative learning |
|-------------------------------------------------|--------------------------------|----------------------------------|
|                                                  |                                | 46%                              |
|                                                  |                                | 54%                              |

Figure 7. Student learning assessment form

In order to improve the efficiency of English learning and the quality of English teaching, this paper believe that it is necessary to change the teaching mode. That is to say, the teacher-centered teaching should be transformed to the "student-centered" model, which is the change of traditional teaching methods. In accordance with the outline requirements, students' non-intellectual factors are cultivated from a psychological perspective. When students participate in these activities themselves, they realize that problem-based learning is more sustainable than professional knowledge in books. In addition, students will solve problems creatively, which also bring more intellectual stimulation to students. Therefore, the score of these two strategies will increase corresponding strategic competence with the deepening understanding of students for problem-based learning. During the reading process, once a functional word is encountered, the beginning of a sentence component can be predicted. The articles a, an and the indicate the beginning of a noun phrase, (such as student). The prepositions in, at, on, etc. indicate the beginning of a participle phrase. Functional words, as a syntactic strategy, provide useful information for people to understand discourse. Therefore, with the prediction of the function of functional words and the subsequent simulation and analysis, especially the training of the different usage of multi-functional words, the reading speed and the correctness of understanding of students can be effectively improved. Suppose that a name can be extended to refer to the same kind of things rather than naming new things with the subject relation. After teaching the personal pronouns of the lower grade children, the change of the third person singular predicate verbs will inevitably be involved in the teaching. It is inevitable that many teachers make such mistakes when they explain the language point while consolidating their previous knowledge and we should focus on the promotion of the concept of cognitive objective things. For cognitive psychology, the significance lies in promoting students' English learning from a conceptual perspective rather than just a process of data and information processing. Only when students can fully understand that the concept of learning is active learning from the heart, to discover the meaning of learning, such English teaching is a reasonable and effective way. A survey of the interest of students in learning English among 4 classes is shown in Table 8 and Figure 8.

Figure 8. A survey of interest in learning English among 4 classes of students
Table 8. A survey of interest in learning English among 4 classes of students

| Class       | Uninterested | Be interested |
|-------------|--------------|---------------|
| Class one   | 15%          | 53%           |
| Class two   | 16%          | 41%           |
| Class three | 16%          | 38%           |
| Class four  | 17%          | 33%           |

In order to make the algorithm have better dynamic performance, and to achieve optimal cooperation between the global and local search spaces to better serve the evolution process, the simulation method is used to obtain the below formula:

\[ n = W^*P + b \]  

Adaptive inertia weight factor can be adaptively changed:

\[ f(x) = \frac{1}{1 + e^{-x}} \]  

At this time, the velocity formula of the particle should be a formula containing the inertia factor:

\[ v_i = f \left( \sum w_i x_i - \theta_i \right) \]  

At the end of the operation, the new generation of offspring is replaced by another new generation of offspring to ensure the consistency of the population size. The position of the new individual is calculated by the below formula:

\[ y_i = f \left( \sum w_i x_i - \theta_i \right) \]  

Take the random vector of interval value and the formula for the speed of descendants is:

\[ O_i = f \left( \sum T_i - \theta_i \right) \]  

The discrete sampling time and algebraic sum are used instead of the corresponding continuous quantity, the control can be approximately rewritten as follows:

\[ Y(s) = \frac{G(s)C(s)}{R(s) + G(s)C(s)H(s)} \]  

Discrete variables can be obtained after the substitution of discrete transformation:

\[ Y(s) = \frac{G_p(s)G(s)}{N(s) + C(s)H(s)} \]  

Variant function. That is the transfer function is as follows:

\[ f(x) = \sum_{j=1}^{\infty} \alpha_j N\left( \mu, \sigma_j^2 \right) \]  

The amount of computation caused by total output is too large. The recursive model of incremental principle is shown below:

\[ I(s) = \frac{Js + b}{JLs^2 + (bL + JR)x + bR + K^2} \]  

\[ N(\mu, \sigma_j^2) = \frac{1}{(2\pi)^{\frac{1}{2}}} \frac{1}{\sigma_j} e^{-\frac{1}{2} \left( \frac{x - \mu}{\sigma_j} \right)^2} \]  

The square entry of system input is introduced to avoid fluctuation of control energy. The formula for the optimization of parameters is:

\[ Mu = f(x) = Mu_{\text{max}} \left( 1 - \frac{x}{x_{\text{max}}} \right) \]  

If overshoot is used as an indicator of optimization evaluation, the simulation function becomes:

\[ p_a(f) = C \sum_{i=1}^{n} K \left( \frac{z_i - \theta_i}{h} \right) \delta[b(z_i) - u] \]  

The typical two order transfer function is used as the controlled object, and the parameters are optimized and simulated:

\[ BH(p, q) = \sum_{u=1}^{\infty} p_u(f)q_u \]
\[ E(x, y, z) = \frac{xL_{LED}A_{LED}}{\left[(x-x_0)^2 + (y-y_0)^2 + (z-z_0)^2\right]^{3/2}} \] (14)

According to the constructivism theory, it is comprehensively and systematically applied to the study of English and Chinese passive sentences. In addition, a complete translation should begin when the author finally translates the reader, that is, the author, the source text, the source text reader, the translator and the target text reader. The constructivism theory should be used in the main or part of the situation described above to explore a certain link involved in the translation process. However, there are few studies on the application of the analytic theory system to comprehensively explore various translation links. For a carrier that expresses a certain meaning, the meaning is initially a whole. Without understanding the whole, the meaning will be distorted. Although the overall linguistic material expresses a holistic idea, as a whole, it must have its own parts and the structure, function and implicit factors of the connected parts. Therefore, understanding the whole not only divides the perceptual perception and cultivates the sense of language, but also grasps the internal connection of the language material, so as to grasp the whole. Students' autonomic learning ability is inseparable from the spirit of cooperative learning. According to the spirit of reform, the focus of college English teaching has changed from reading comprehension to listening, speaking and writing, and comprehensively improving students' comprehensive English proficiency. And the improvement of the ability of using cannot be separated from the student-centered "listening", "speaking" and "writing". The realization of this link requires multi-directional and multi-dimensional interaction and information exchange between teachers and students, students and students. Therefore, the cultivation of students' autonomic learning ability cannot be separated from the intervention of cooperation. The problems in professional English teaching should match students' English proficiency on the basis of conforming to the characteristics of discipline and specialty. Teachers can design problems according to the unit theme of the selected textbooks, or on the basis of students' needs, combined with the textbooks for extracurricular extended learning. In practice, combined with students' English reading ability, English expression ability and autonomous learning ability, the design and expression of the problem content should be suitable for students' English ability level. It is necessary to combine problem-based learning with existing teaching facilities and conditions. Designing the teaching experiment, the paper verifies whether the cognitive psychology-based vocabulary teaching method can effectively improve students' English vocabulary proficiency through the pre-test and post-test of computational simulation analysis, as shown in Figure 9.

**Figure 9. Confirm the vocabulary teaching index map based on cognitive psychology through pretest and posttest.**

Research psychology focuses on how thoughts, events, and things are stored and formed in the mind. Cognition refers to the process by which human beings understand objective things and acquire knowledge, including psychological processes such as perception, memory, speech, thinking and problem solving. While teaching the language knowledge, if the content of the cultural knowledge appears in the content of the textbook, teachers should interpret and explain the cultural differences between these two countries, which can not only arouse students' interest in learning English, but also enable students to learn the cultural knowledge of English, thus expanding their knowledge. Only when students are eager to learn can they receive good learning effect. The overall language teaching model of English requires...
teachers to use all favorable conditions to create a variety of situations, provide multilingual materials, organize novel in-class and out-of-class activities, and stimulate students’ enthusiasm and initiative in learning. The passive learning should be transformed to active learning, so that students will be willing to use English and the purpose of English communication can be achieved. The ultimate goal of learning language is to create conditions for lifelong learning in the future. To realize the connection between English learning and professional learning, and to enhance students’ initiative to promote the interaction between new potentially meaningful knowledge and old knowledge in students’ original knowledge structure, English learning strategies are needed. Through the involvement of science majors in professional English problem-based learning, we can guide students to connect their professional knowledge with English knowledge, old knowledge with new knowledge, and the re-integration of knowledge in the process of problem definition, autonomous learning, cooperative learning and evaluation.

**Figure 10. The relationship between input and output of language materials**

Finally, their ability to express professional knowledge in English is formed and their individual thinking ability can be cultivated. The problem of reading thinking is reflected in the fact that reading thinking always begins with questions and skips problems. In the process of English teaching, the relationship among listening, speaking, reading and writing, that is, the relationship between input and output of language materials, is shown in Figure 10.

**CONCLUSION**

The rational design of the problem is the first step in the success of problem-based learning. The problem must contain the principle of scientific knowledge, and this principle should be hidden in the complex and real life, and expressed in English. According to cognitive psychology, a type of problem only requires the reader to repeat or identify certain information presented during teaching. Such problems are called knowledge, facts or literal problems, which involves simple memorization in the cognitive process and is a low level issue. Another type of problem requires students to reorganize the information obtained in the mind to create an answer, or to logically infer the evidence to support the answer. Such problems are called high-level questions. We should strengthen phonetics teaching and word formation teaching, pay attention to guiding students to discover the rules of memorizing and using words themselves, stimulate students' interest in learning, and enable students to find effective ways to learn vocabulary for themselves. To improve their autonomous learning ability, it is more important to exercise their ability of English application. This paper introduces cognitive psychology into English teaching and pays attention to students' enthusiasm and initiative in the process of language learning, which should become a new trend of current English teaching reform. The optimization of teachers' English teaching and the improvement of classroom efficiency should be based on the principle of student-centered.

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