摘　要

词汇是语言最基本的构成要素之一，词汇教学是高中英语教学的重要组成部分，它直接影响学生英语学习能力的发展。然而，当前高中英语词汇教学的现状不容乐观。因此，如何通过有效的词汇教学，提高高中学生灵活运用词汇的能力，从而提高学生的综合语言运用能力就成为当务之急。

针对目前高中英语词汇教学的重要性及教学现状，本研究试图将主题式内容依托教学（CBI）应用于高中英语词汇教学，以内容为本，将学科话题内容和语言形式相结合，改变传统词汇教学中重语言形式而轻语言意义的现象。主要围绕以下三个研究问题进行探讨：第一，高中英语词汇教学的现状如何？第二，在高中英语词汇教学中采用 CBI 能取得什么应用效果？第三，基于 CBI 的词汇教学对高中英语词汇教学有哪些启示？

在可理解性输入理论和建构主义学习理论的指导下，本研究以天水市第一中学高一（1）班 57 名学生为研究对象，进行了为期一学期的教学实践。在教学实践前期，通过问卷、测试等研究方法分析学生英语词汇学习中存在的主要问题以及词汇学习的水平。在教学实践过程中，以 CBI 教学理念为指导，精心设计教学案例和课堂教学活动，让学生学会在特定话题中使用词汇。一段时间后通过访谈及时发现问题、分析问题、并作出相应的调整，继续进行基于 CBI 的高中英语词汇教学以提高词汇教学的效果。在教学实践结束后，通过调查问卷、测试、访谈等研究方法对教学实践前后所收集的数据进行对比分析，探究 CBI 在高中英语词汇教学中的有效性。

研究结果表明，基于 CBI 的高中英语词汇教学有助于提高学生词汇学习的兴趣和动机，进而提高学生的词汇学习能力和学习效果。同时，在高中英语教学中，教师必须重视词汇教学，坚持以学生为本，根据学生的兴趣和需要，围绕特定话题，设计课堂教学活动，加强学习能力指导，帮助学生在语言产出活动中积极主动地运用所学词汇，从而提高词汇学习的效率。

关键词： 内容依托教学；英语词汇教学；教学效果

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List of Abbreviations

CBI	Content-Based Instruction
ELT	English Language Teaching
LSP	Language for Specific Purposes
6T	Theme, Text, Topic, Thread, Task, Thread, Transition
PEP	Peoples' Education Press
SPSS	Statistic Package for Social Science
S-D	Standard Deviation

1. Introduction

Vocabulary is one of the basic elements of language in second language learning. The famous British linguist Wilkins (1967) states that *"without grammar, people can express very few things; without vocabulary, people can' t express anything."* Therefore, it is indispensable to master an adequate amount of vocabulary for learners to acquire a language successfully. In order to help students master vocabulary effectively, teachers have to guide students to learn vocabulary through a variety of efficient strategies, which means that the guidance of teachers and learning strategies about learning vocabulary are quite significant for language learners.

1.1 Research Background

The English Curriculum Standard for senior high schools (2017) propose that English vocabulary teaching in senior high schools has to cultivate students' lexical awareness in context. Lexical awareness can help students expand their vocabulary through extensive reading and can help them improve the ability to understand vocabulary so as to express meaning accurately. From the perspective of students, vocabulary learning is not simply memorizing words and expressions, but it is a comprehensive language practice activity combining thematic content with specific context. Students get across the meaning of related topics through listening, speaking, reading, writing and viewing. Meanwhile, they also use words to transfer information and express meaning of related topics. As for teachers, in specific teaching, teachers should guide students to understand vocabulary meaning by the structure of words and context of text. In daily teaching activities, teachers should continually present related vocabulary combing with thematic context (including classroom expressions of teachers; dialogue; group work).

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However, the present situation of vocabulary teaching is not optimistic as it is expected. Plenty of existing problems related to English vocabulary teaching can be found in the process of practical teaching. Firstly, from the perspective of teachers, they often teach words in isolation by word-list rather than by designing some effective classroom activities. They often don't integrate language form with language content and neglect vocabulary usage in context. Therefore, they should build the bridge between practical teaching and requirements by *The English Curriculum Standards for Senior High Schools (2017)*. For students, they learn words by reciting words-list rather than by acquiring vocabulary in context, only focusing on mechanical language input but not participating in special content and context so that vocabulary teaching is time-consuming and inefficient (Wang Dexiu, 2010).

CBI is a teaching philosophy, which integrates language teaching into thematic content to accelerate students to improve the target language in authentic context. CBI classes should take students' precious language experience and present knowledge into account, and should guide students to understand vocabulary in sentences and discourses. Therefore, this paper attempts to construct classroom instructional design based on theme-based model in the light of CBI. And then, CBI is applied to vocabulary teaching to check its application effect so as to acquire some teaching implication on how to apply theme-based model of CBI to English vocabulary teaching in senior high schools. To achieve the research objectives above, the following questions are explored: 1)The present situation of English vocabulary teaching in senior high schools; 2)The application effect of English vocabulary teaching based on CBI in senior high schools; 3) Some implications on how to apply CBI to English vocabulary teaching in senior high schools.

1.2 Research Purpose and Significance

As it is previously mentioned, vocabulary is one of the most crucial parts in English learning, but there are many issues that give rise to students' negative attitude in English learning. There is no doubt that it is very vital to solve present problems in English vocabulary by an effective teaching method. This research applies

theme-based model of CBI to vocabulary teaching in order to exploit the application effect in English vocabulary teaching and how to make students more interested and motivated in English vocabulary learning. The second one is to check whether CBI can help students improve their vocabulary proficiency. And the last one is to provide some useful implication for teachers in the course of English vocabulary teaching.

In present research, CBI is an effective teaching philosophy and it possesses the practical significance in English vocabulary teaching. First and foremost, CBI can help teachers develop awareness to construct student-centered class from the perspective of integrating relevant topics content into English vocabulary teaching and it can offer some reference for English teachers in the course of English teaching. In the second place, this research shows that teachers can help students improve their vocabulary learning proficiency by applying CBI to English vocabulary teaching. Besides, CBI can help students arouse their learning interest together with motivation and establish their self-confidence in English vocabulary learning. In CBI vocabulary classes, English learners can participate in various classroom activities and learn relevant words in a relatively pleasant and relaxing atmosphere. Last but not least, CBI can help students' promote their autonomous learning ability. In CBI vocabulary classes, various classroom activities are designed by listening, speaking, reading, writing to improve students' comprehensive language application.

In this research, CBI is to be applied to English vocabulary teaching in senior high schools, which can make students learn vocabulary in a real context and fully grasp vocabulary by understanding meaning and content of language. It can help students correctly express their thoughts, viewpoints and achieve the purpose of successful communication so as to improve students' comprehensive language application.

1.3 Framework of the Thesis

The thesis is made up of six parts altogether:

Part one is the introduction of the thesis. Firstly, the research background is presented in this part. And then it explains the purpose and significance of the thesis.

Lastly, it gives the framework of the research.

Part two is the related literature review of CBI and English vocabulary teaching. In this part, it mainly shows some related research abroad and at home.

Part three is the theoretical basis. In this part, it makes a brief explanation about theory foundation(Krashen's comprehensive input hypothesis; constuctivism Learning theory). And then this part demonstrates how each theory guides this research.

Part four mainly includes research design. In this part, it presents the following contents: research questions, research subjects, research methods and instruments, research procedure and an instructional design case of vocabulary teaching and procedures of implementation based on CBI, and data collection along with analysis.

Part five is the description of results and discussion. In this part, the application and test results obtained from practical teaching prove that constructing a teaching model based on CBI is very effective in improving students' vocabulary understanding and motivating students' interest of vocabulary learning.

Part six is the conclusion of this thesis, which offers the implication about applying CBI to English vocabulary teaching and presents some limitation and suggestions of the research.

2. Literature Review

As it is presented in part one, the aim of this research is to explore the effect of applying CBI to English vocabulary teaching. This research aims at constructing a mode based on CBI in English vocabulary teaching. In this part, previous researches about CBI and English vocabulary teaching are presented. The purpose of these literature reviews is to find a research gap between previous researches and current research, which is preparation for the next research.

2.1 Previous Studies of CBI

The CBI philosophy is originated from Canada. Since the 1960s, educators have been exploring how to combine meaningful subject content with language learning for the sake of learners' learning interest. In 1965, St. Lambert (Lambert & Tueker, 1972) organizes an "immersive education" teaching experiment class. In the teaching experiment, teachers explain some knowledge of natural science, mathematics, history and other disciplines through learning French so that students can have a better mastery of French and improve their language application ability based on the subjects content (Dai Qingning, Lv Ye, 2004). Later, these kinds of similar experiments are carried out in Western countries such as Canada and the United States. And then CBI is introduced into China by linguists and it has been received widely in language teaching.

2.1.1 Previous Studies of CBI Abroad

CBI refers to "content-based instruction". It undergoes a perennial progress from language form to language content. CBI has been generally understood as an integrative approach focusing on language and content. However, a diversity of definitions of CBI have been proposed by researchers and educators from different aspects.

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Widdowson (1968, 1978) is the first man who puts forward a view that both language and content should be integrated into English Language Teaching (ELT), and that foreign language can be acquired through other subjects. Krashen (1982) considers that students can acquire content (culture, custom, religion etc.) and can develop their language skills with the support of comprehensible input. Besides, content material can be anything that students are interested in. Briton (1989:7) defines CBI as "the concurrent study of language and subject matter with the form and sequence of language presentation dictated by content material (Guo Yanling, 2012)." In other words, the effective teaching method is to put the language learning into a specific content. CBI refers to an approach to acquire second language by content study of language and subject matter dictated by content material (Li Qian, 2017). Gene (1994) regards content as an interesting or important topic, theme, or non-language issue to the learners, which can motivate students' learning interest.

From the perspective of theoretical research about CBI. In the late 1970s, the UK developed LSP (Language for Specific Purposes), which advocates that students learn English mainly for the purpose of a certain occupation or other learning purposes (such as serving as a police officer or airport dispatch), thus which makes English in a subordinate position. Therefore, CBI is developed on the basis of theory and practice. In 1975, the British government proposes that language teaching should be taken as an important part in the process of teaching other courses. Later, this movement affects theory and practice of foreign languages teaching (Wang Shixian, 1994: 27). In the 1980s, Baker and Jones (1998) acknowledge that CBI has been developed from the immersion programs that have been used for teaching methodology of Canadian French over 30 years(Guo Yanling, 2012: 29).

Brinton (1989) points out that CBI actually belongs to communicative language teaching. These scholars further systematically classify CBI into four models according to CBI philosophy: the Theme-based model, the Adjunct model, the Sheltered model and the Alternative model. In order to apply CBI to practical teaching more directly and effectively, Stroller (1997:78) proposes the operation method of "6T", which represents theme (Theme), text (Text), topic (Topic), clues (Thread), Task (Task) and Transition (Transition). This mode is mainly undertaken by foreign language teachers. This model has lower requirements for learners' language level and it is suitable for language teaching in the initial stage. The purpose of this model is to improve language ability of the target

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language as much as possible by means of relevant themes and topics(Cai Jian, 2000). Stryker and Leaver (1997) summarize four remarkable characteristics of CBI, including (1) subject matter core; (2)use of authentic materials, (3) appropriate to the specific needs of students, (4)learning of new information (Leaver & Stryker, 1989: 86).

From the perspective of practical application, some prominent examples of foreign empirical studies based on CBI are as follows: (1) The French Department of the University of Arizona uses CBI protection model to offer Greek culture classes to students who have a better mastery of French. The results show that these students improve their French basic abilities by learning about Greek culture, (2) Yale University in the United States has held two training sessions each summer since 1987. The CBI teaching model combines language learning with professional teaching, which has improved students' professional knowledge and English level.

As it is mentioned above, related studies of CBI abroad mainly focus on theory, development of CBI models, the characteristics of CBI and other theoretical aspects. There are relatively few practical researches about CBI. Through literature review about CBI above, it can be found that CBI is a special teaching philosophy with the characteristics of integrating language teaching into the thematic content or subject matters to accelerate students to develop target language or foreign language in authentic context. CBI classes should take students precious language experience, present knowledge into account. Consequently, Students can understand the content and master the vocabulary better under the guidance of teachers.

2.1.2 Previous Studies of CBI at Home

Since CBI pours into China in the 1990s, the researches about CBI have experienced a process increasingly from theoretical research to empirical research. CBI emphasizes that the second or foreign language teaching should be meaningful rather than simple meaningless presentation of language knowledge, including those in vocabularies, grammar and structures.

In terms of theoretical researches, the research of CBI starts late in China. Wang Shixian (1994), who first studies CBI theory in China, discusses the philosophy and model of CBI as well as the possibility of applying CBI to English teaching in China. He makes an overview of the possibilities of CBI application in China. Later on, some researches

about basic theories and models of CBI gradually spring up and CBI is applied to language teaching in some big cities (Guo Yanling). Wang Shixian believes that the theme-based teaching model is an effective method in terms of wide adaptability, textbook adaptation and teaching testing to conduct teaching activities and guarantee teaching effects. Liao Chunhong (2009) makes a corresponding review of "the CBI Model in Higher Education" and proposes that it should correctly treat students' English foundation in English teaching based on CBI. They believe that CBI model is applicable to different levels of student groups, so it is possible to be succeed in using many different teaching environments.

In terms of practical researches in college English teaching, Dai Qingning and Lv Ye (2004) state that CBI based on a particular subject or some topics aims to integrate language learning with subject learning completely. Students can acquire language competence through subject matter in the process of English learning. Chang Junyue (2008) selects students in 2007 and 2008 classes from Dalian Foreign University as subjects to make an empirical research. His research shows that the implementation of the CBI curriculum system has greatly promoted students' knowledge of a specific subject, and has a positive impact on their English language knowledge and skill-test. Yuan Pinghua (2008) inspects that content-based instruction in foreign language teaching has an effect on English proficiency of language learners in the context of college English teaching. It focuses on the development of students' English proficiency in foreign language teaching based on CBI. Xie Huaixin (2010) states that CBI is an efficient way in improving non-English majors' English reading ability, because students' motivation can be enhanced in the process of English learning. Zhao Xiuyan (2014) takes an sample of freshmen and sophists in order to investigate teaching effect of content-based teaching curriculum system in the basic stage of English majors. As a result, the experimental research shows that the implementation of content-based teaching curriculum system has greatly promoted students' academic knowledge competences.

Although there are abundant researches of CBI in colleges and universities in China, there are few studies on English teaching in junior and senior high schools and most of them are empirical studies. Chen Jie (2007) makes a case study applying CBI to junior high school English classes. The results show that CBI can be applied to junior high school classes and it can improve students' English learning interest and motivation, which can help students improve their English learning proficiency further. Zhang Shixin (2008)

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analyzes and summarizes that CBI is effective to improve interest and motivation of English learners so as to improve students' comprehensive language application ability. It is also proved that CBI can be effectively applied to English class in junior high schools. Ma Meihong (2011) studies the impact of CBI model on the improvement of English learning ability in rural senior high schools. It is found that CBI model can enhance students' English learning interest and motivation, reduce learning anxiety and help them develop their language communication ability.

From the perspective of English teaching, Gao Qiaoqiao (2013) makes an evaluation for the material of New senior English for China published by PEP. Finally, it comes into conclusion that teaching material matches with the criteria of evaluation based on CBI. Ma Shangmei (2013) finds that the principles of CBI can be effectively applied to English reading courses and it can improve students' reading ability in contextual English teaching. When some requirements are satisfied in senior English reading courses, CBI displays its advantages in helping students develop their English reading ability in primary and senior high schools.

In terms of English vocabulary teaching based on CBI, it is found that there are two researchers through consulting CNKI. Hu Wei (2005) discusses that CBI can promote students' memory of vocabulary in English teaching classrooms and it also can effectively help students to acquire vocabulary in context. Sun Yajun (2012) makes a research based on the principles of constructivism and content-based teaching model in English majors for three months. The results of this research show that it is an effective way to apply CBI to English vocabulary teaching in University English major.

2.2 Previous Studies on Vocabulary Teaching

2.2.1 Previous Studies on Vocabulary Teaching Abroad

Vocabulary teaching is an important part of language teaching. People hold different opinions on theories and methods of vocabulary teaching in different stages of language teaching. The vocabulary teaching method mainly experiences the following phases in foreign countries: (1)The most primitive vocabulary teaching method is Grammar Translation Method. People only pay attention to the explanation of the meaning and form

of words. Meanwhile, they ignore the lexical meaning and contextual meaning in practical application. (2) Situational teaching method is prevalent in the United Kingdom in the 1920s. Situational teaching method can arouse students' imagination and creativity in the content of teaching materials. (3) In the 1940s, The Audio-lingual Method emphasizes too much mechanical drills and it ignores the meaning and content of language, which is not beneficial to foster students' language application proficiency and communication skills. (4)The Communicative Language Teaching emerges into Europe in the 1970s. The Communicative Language Teaching uses functional ideas as the key points to develop communicative competence through verbal communication activities and uses words correctly in the different context.

Since vocabulary studies have been neglected in other fields of linguistics, so the study of vocabulary teaching has not been attracted people's attention to. It doesn't begin to pay attention to vocabulary teaching until the 1970s. Wilkins (1976) states that " *without grammar, people can express very few things; without vocabulary, people can't express anything* ". He proposes that people should pay attention to the semantic problems in language teaching. Wilkins makes an important contribution to vocabulary teaching. However, he doesn't adequately understand the connotation of vocabulary teaching. In the 1970s, Brown raises the issue of collocations and Richards puts forward what students should learn and gives a brief overview of vocabulary competence: (1) expansion of vocabulary; (2) mastery of lexical recurrence rates and word collocation; (3) mastery of the functional and contextual aspects of words; (4) mastery of syntactic effects on words ; (5) mastering the roots and derived words; (6) understanding the polysemy of words. Richards' s overview of vocabulary competence reveals the true meaning of vocabulary learning.

How to teach vocabulary efficiently has been debated ever lastingly among vocabulary researchers. Huckin &Coady (1999) points that there are two typical methods in vocabulary teaching: implicit teaching and explicit teaching. On the one hand, implicit teaching states that large amount of vocabulary are taught in different contexts and discourses. It should be payed more attention to some language activities rather than vocabulary learning itself in English vocabulary teaching. On the other hand, explicit teaching states that students should directly attach importance to vocabulary itself. For example, words formation, words pronunciation and teaching word in context (Nation & Newton, 2001; Nation, 2004).

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Therefore, it is meaningless to study vocabulary without topic context, cultural background, cross-cultural and subject content. Lexicology and linguistics are also closely linked to independent disciplines and their research areas may inevitably become more expanded. As the basic link of English teaching, English vocabulary teaching has always been valued by teachers. Vocabulary learning should not only pay attention to students' understanding of vocabulary and memorizing ability, but also should pay more attention to students' practical application ability of vocabulary. In summary, scholars abroad have made great contributions to the development of vocabulary teaching in theory and in practice. Vocabulary plays an imperative role in English language teaching and it has drawn more attention to researchers.

2.2.2 Previous Studies on Vocabulary Teaching at Home

The approaches and methods in western countries have a great influence on Chinese English teaching. It is acknowledged that it is very vital to acquire English vocabulary in the process of language learning. Many scholars and English teachers who are engaged in researches about language teaching. Although vocabulary, pronunciation and grammar are three major elements of constituting a language, people can convey their thoughts and feelings only when they master larger amount of vocabularies.

From the perspective of theological researches, Hu Chundong (1990) believes that vocabulary teaching is the most important part of the whole English teaching in a broad sense, and the vocabulary teaching is diverse. He also penetrates into various kinds of teaching activities and promotes vocabulary teaching from the perspectives of language teaching and cultural teaching. Some different views begin to emerge in the vocabulary teaching theory, and then people begin to pay attention to vocabulary teaching.

From the perspective of practical research, Li Yang, the founder of Crazy English, advocates that students should learn words in sentences, quotes and conversations. Sentences are made up of some words and provide a rich language environment for memorizing words. Memorizing words in sentences is interesting, which can improve students' English learning. Lu Qiaoling (2001) puts forward that Learning new words in context is an important mean of classroom vocabulary teaching and it is also the main way of vocabulary natural acquisition. It is significant for learners to pay more attention to context in vocabulary teaching. From the perspective of "communication" , Liu Xiaoling

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(2000) who holds that it is not effective to memorize words passively. Vocabulary teaching should guide students to learn and use vocabulary in a relaxing atmosphere or context. In the process of conversation, students enhance their understanding of new words through recollection and thinking. They also promote the connection between new words with vocabulary that have been mastered in real life.

Lv Daoli (2004) proposes that teachers should combine vocabulary, grammar and discourse teaching and should pay attention to cultivate students' pragmatic competence in English vocabulary learning; Zhu Yafu (2005) sums up two views combining the examples of English and Chinese. Firstly, English vocabulary teaching should pay attention to some words which are non-correspondence between English meaning and Chinese meaning. Secondly, English vocabulary teaching should be conducted according to social and cultural background knowledge.

In summary, these studies about vocabulary teaching at home provide plentiful and useful references for subsequent English vocabulary teaching in the field of practical application of CBI. For teachers, the ultimate aim is to help students master words rather than how to teach words. In the process of actual teaching, teachers should teach vocabulary systematically and choose appropriate language content to make students be involved in vocabulary learning on one's own. Furthermore, teachers should combine cultural background knowledge with vocabulary teaching in special context. It is also put forward that relaxing and pleasant atmosphere is relatively important for students to learn English vocabulary.

2.3 Summary

According to the literature review above, although the research based on CBI is introduced to China in the 1990s, its development is very rapid and it is involved in various fields and levels. However, looking through the current situation of CBI research after 2005, it is found that there are some problems in the field of the research. The first is that research perspective is relatively simple. CBI mainly focuses on higher education at home. Wu Puyun (2015) makes some statistics, 50% of the researches of CBI mainly focus on English majors in higher education. However, there are relatively few studies on the implementation researches of CBI in primary and secondary schools and that it mainly

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focuses on the researches of reading teaching. There are much less researches of vocabulary teaching based on CBI. There still exits a big gap to be explored for the following aspects of English in senior high schools according to the previous studies. So it is essential to perform some studies about English vocabulary teaching by using CBI. Therefore, this paper is going to try to explore the effect of applying a theme-based mode based on CBI to English vocabulary teaching in senior high schools. The purpose of this research aims at providing an effective vocabulary instructional way for teachers to improve students' efficiency of English vocabulary acquisition and then to achieve students' comprehensive language application, which is in accordance with the *English Curriculum Standard for senior high schools(2017)*.

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3.Theoretical Basis

In this part, Comprehensible Input Hypothesis and Constructivism Learning Theory are applied to conduct effectively vocabulary teaching based on CBI in senior high schools. It mainly makes a brief introduction to the two theories respectively and then talks how the two theories guide the teaching process of English vocabulary based on CBI in the research.

3.1 Krashen's Comprehensible Input Hypothesis

In 1985, Krashen proposes "Comprehensible Input Hypothesis", which becomes the core content of second language acquisition and it provides a solid theoretical basis of language learning. First of all, he emphasizes that the only way to acquire language is "comprehensible input" (Ellis,1999; Larsen-Freeman, 2000). Krashen also points out that "comprehensible language" does not mean the comprehensibility of linguistic form, rather than focusing on the comprehensibility of linguistic content. The key to ensure learners to move from the current level to the next level is that input content can be understood by learners. Therefore, Krashen (1985) argues that " *the successful acquisition of a second language depends on meaningful teaching content, an understandable language input that is slightly higher than the learner's current level, and depends on sufficient and meaningful meaning.*"

In addition, according to Krashen's Comprehensible Input Hypothesis, language acquisition occurs only when language "input" is beyond one's current language competence. Krashen defines " comprehensible input " as " i+1","i"(i means the learner's current proficiency; "+1" (a little beyond his/her current proficiency). Thus, acquisition may take place when learners understand language containing 'i+1', it will automatically occur when communication is successful. To achieve the transition from stage "i" to stage "i+1", students need to make certain language input (Ellis, 1999; Larsen-Freeman, 2000). Meanwhile, he emphasizes that the input language

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materials must also be closely related to student's life so that students can have strong interest and motivation in learning materials, , which can make students unknowingly acquire a new language and also promote classroom teaching interaction ability (Ma Meihong, 2001).

Krashen's comprehensible input hypothesis is the most important theoretical basis of CBI and it reflects the essence and core of CBI. Comprehensible input hypothesis has great influence and significant guidance for English classroom teaching in China. Therefore, in this research, comprehensible language input is used to guide vocabulary teaching and language content learning, which makes students acquire vocabulary more effectively through subject content knowledge in a positive and pleasant atmosphere. Teachers provide students with real language materials and subject knowledge so as to let students understand thematic content to achieve "i+1", which requires students to learn vocabulary autonomously and actively rather than learn vocabulary mechanically.

English vocabulary teaching not only includes conscious teaching, but also it requires students to learn vocabulary in a natural and comfortable language environment. And according to students' actual level and needs, it is should be set appropriate vocabulary teaching objectives. At the same time, students can improve communicative language environments so as to help them learn English vocabulary better in actual context. Teachers also should pay attention to students' emotional factors and should cultivate students' interest in English vocabulary learning so as to improve students' vocabulary proficiency.

3.2 Constructivism Learning Theory

The Swish philosopher and psychologist Jean Piaget (1972), who firstly proposes constructivism, puts forward that cognition is an active construction based on the knowledge and experience of a certain subject. The constructivism learning theory pours into the world in 1990s and it stresses that initiative, positivity, interactivity and situationality are essential in the process of learning.

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Firstly, the constructivism learning theory advocates students-centered learning under the guidance of teachers. Teachers are only organizers, coordinators and helpers in English learning. The nature of learning is that students should actively construct the connection between new knowledge and some contents that they have learned by creating relevant context. Learning is not a process of passively receiving information but a process of active construction. In teaching activities, teachers should promote students to combine new knowledge with their previous experiences to deepen their understanding of new knowledge when new knowledge is demonstrated. In a word, learning is an active process of construction.

Secondly, interaction between students and teachers is very significant in the process of learning. Constructivism learning theory states that knowledge is not taught by teachers but it is constructed initiatively by learners in contextual interaction environment. In other words, learning is a process of constructing meaning in a certain context under social and cultural background. Therefore, It is believed that teachers should strive to create learning environment in which students can construct their own knowledge and they can communicate with each other in the process of learning. It is required that students should share with various learning resources to complete relevant learning tasks in English learning.

Finally, it is believed that it is of great importance to carry out meaning construction in a realistic scenario. Students can learn language by precious relevant experience and knowledge in content-based instructional environment. Learning environment should include four aspects: situation, cooperation, communication and meaning construction. The teacher-centered situation creation and student-centered cooperative learning emphasize that the situation in the learning environment must be conducive to the construction of learner meaning, which can enable learners to enter the immersive situation. Therefore, it is significant to stimulate students' thinking and establish connections between previous and new knowledge, which can make students to actively participate in teaching activities (Dong Baogang, 2014).

3.3 Summary

As it is discussed above, it can be found that theories including comprehensible input hypothesis and constructivism learning theory can be used to support English vocabulary teaching based on CBI in this research. The essences of CBI can be totally known and it can be applied into practical teaching appropriately. In detail, in terms of comprehensible input hypothesis, it is believed that vocabulary teaching should focus on comprehensible language meaning and thematic content rather than language form. Students can acquire language in a relaxing and pleasant atmosphere. Constructivism learning theory concentrates on interaction and learners' previous content schema, which requires that some learning activities related to learners' daily life should be designed when teachers make instructional design. In addition, vocabulary teaching should also be conducted in a meaningful situation. Teachers are not initiators of knowledge but they are the promoters of meaningful construction. Students are also supposed to become independent learners and to construct meaningful content schema by themselves.

4.Research Design

In this part, it mainly includes descriptions of research questions, research subjects, methods, instruments, and the instructional design about applying CBI to English vocabulary teaching.

4.1 Research Questions

The research questions which have been put forward are on the foundation of the current situation in English vocabulary teaching. This research aims at exploring an effective teaching model based on CBI and then puts it into practice in order to check the effect of applying CBI to English vocabulary teaching in senior high schools. This research is mainly conducted around the following three research questions:

1) What is the present situation of English vocabulary teaching in senior high schools?

2) What effects can be obtained to apply CBI to English vocabulary teaching in senior high schools?

3) What implications can be drawn from English vocabulary teaching based on CBI?

4.2 Research Subjects

The subjects in this research are 57 students from Class 1, Grade 1 in Tianshui No.1 Senior high school. It is acknowledged that Tianshui No. 1 senior high school is the only key senior high school in Tianshui City and the overall level of students is relatively high. The learning ability of students is great and the students' initiative is also high. Their ages range from 14-16 years old and nearly most of students come

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from rural areas. most of them learn English for the purpose of dealing with English examinations and requirements of their English teachers but not for interest. Therefore, they are weak in practical language application. Especially, their listening and speaking skills are very poor. So do their English vocabulary learning. 57 students from the class are tested and questionnaires are delivered to before they are taught. The practical teaching based on CBI lasts for sixteen weeks to check its application effect and to acquire some implication according to the syllabus in senior high schools.

4.3 Research methods

In order to make sure that the research is more effective and reliable, questionnaires, tests and interviews are used to prove whether these ways can improve students' situation of vocabulary learning and to explore the effectiveness for English vocabulary teaching. And then it gives some teaching guidance about how to facilitate and improve English teaching.

4.3.1 Pre-questionnaire

The research intends to make a questionnaire for 57 students in the class. The questionnaires are conducted twice. The pre-questionnaire is carried out at the beginning of the semester. The pre-questionnaire (Appendix III) is used in the research to collect efficient informants on students' attitudes to show present situation in English vocabulary teaching. The questionnaires are asked to finish anonymously. The questionnaires is presented in Chinese in order that students understand related questions easily. The pre-questionnaire from students is adopted in this research contains 15 multiple choice questions. The 15 items are modified a little based on Hao Yue's and Zheng Yuxi's Yuxi' questionnaire from students. The following three aspects are presented: 1)students' interest and expectation for English vocabulary learning; 2) students' attitudes and current situation for English vocabulary learning; 3) students' problems for English vocabulary learning. The questionnaire is mainly used

for investigating present situation of senior high school students for vocabulary learning views and attitudes towards vocabulary learning.

4.3.2 Post-questionaire

After the implementation of practical teaching, the post-questionnaire (Appendix IV) from students is conducted to survey the students' interest and attitude towards classroom instructional design based on CBI and to figure out the effectiveness of applying CBI to English vocabulary teaching in senior high schools. The 14 items are modified a little based on Zhen Yuxi' questionnaire from students. The post-questionnaire from students has a good consistency and reliability with three aspects: (1) students' interest for vocabulary learning based on CBI; (2) students' attitude towards vocabulary learning based on CBI; (3) students' proficiency and effectiveness for vocabulary learning based on CBI. 57 questionnaires are delivered and 57 pieces of them are reliable based on the description above.

4.3.3 Pre-test

The pre-test is carried out in order to test students' English vocabulary level. To guarantee the validity and reliability of the test, the research is required to survey the vocabulary level by getting 57 students' scores through the pre-test (Appendix Ⅲ). The test paper contains 50 items and needs to be finished in 40 minutes. The test paper is given out to every students by the teachers before they apply CBI to vocabulary teaching.

There are 50 questions and the total score is 50 points, it contains the following three parts: 1) Choosing the best answer according to the following sentences. It aims at testing whether students can fill in proper words according to sentence context, which is included in 50 single choice questions, 1 point for each; 2) Close filling-blank, It aims at examining the application ability of the vocabulary in context ,which contains 20 items, 1 point for each; 3) Free filling-blank, completing the passage with the proper words that they have learned. It aims at testing the vocabulary application in context, which includes 10 items, 1 point for each).

4.3.4 Post-test

At the end of practical teaching, the post-test is conducted under the teachers' supervision to test students' vocabulary proficiency after one-long-semester vocabulary teaching based on CBI. The test paper contains 50 items and 50 points in total, and it needs to be finished in 40 minutes. The test paper is given out to every students after applying CBI to English vocabulary teaching. The question types of both test papers are the same as the difficulty of the two test papers. The types of questions include filling-blank based on special context, cloze blank-filling and discourse blank-filling. Students carefully complete the items within limited time and all test papers are collected.

4.3.5 Interview

There are two interviews in the research.

The first one is carried out after ten weeks to investigate the changes of students' vocabulary learning strategies and their attitudes towards CBI. The interview is conducted for the purpose of gaining the feedback from students in time and for making an improvement for the further teaching. The interview is written in Chinese to collect the data conveniently. Moreover, some students in different levels are taken as interviewees to learn about their authentic ideas by face-to-face interview randomly. There are four interview questions in total (Appendix V).

The second one is carried out at the end of practical teaching. In order to make up for information that cannot be obtained by the post-questionnaire and post-test, this research interviews 10 students to know students' changes and attitudes towards new teaching activities based on CBI and the interview is written in Chinese. The instructional design based on CBI have an positive effect on students' learning interest, attitude and comprehensive language application. From the perspective of qualitative research, it is used to understand the effectiveness of the teaching activity design. There are five interview questions (Appendix VI).

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4.4 Research Procedure

The research is carried out in Class 1, Grade 1 in Tianshui No.1 senior high school. The research is conducted for one semester (from Sept. 15, 2018 to Jan. 15, 2019). The whole research procedure includes the following three stages:

1）The First Stage: Preparation Stage

At the beginning of the semester, students are not familiar to everything around them, and they have to acclimatize themselves to the new environment. Therefore, the implementation of practical teaching based on CBI is not feasible at this time. The whole purpose of the stage is to lay the foundation of vocabulary teaching in the next stage. The pre-questionnaire (Appendix III) is conducted to investigate the situation of students' vocabulary learning at the beginning of the semester, and then the pre-test paper of vocabulary is taken to test the present level of vocabulary in the class (Excel 2010 is used to collect the data of the pre-test and the data of the pre-questionnaire.)

2）The Second Stage: Practical Teaching Stage

In this stage, it mainly constructs theme-based instructional designs based on CBI and that it is applied to English vocabulary teaching in each class. The total time of the practical teaching lasts 16 weeks. During the practical teaching, core vocabulary in each unit is taught in the class, all of students follow the same syllabus and use the same textbook. At the same time, an application case is demonstrated to show the teaching procedures based on CBI. After implementation of practical teaching for ten weeks, it is supposed to check the application effect and changes of vocabulary teaching based on CBI for students. According to the data analysis from the interviews. And then the research makes a little adjustment for the vocabulary teaching in terms of the feedback of students. In the later practical teaching of ten weeks, the research continues to apply CBI to English vocabulary teaching. For example, it should make some adjustments for various classroom activities and change some strategies of vocabulary teaching.

3) The Third Stage: Post-practical Teaching Stage

The last stage is to put CBI philosophy into vocabulary practical teaching to test its application effect. Firstly, the post-test is used to find out whether there are significant differences on the subjects' scores before and after the practical teaching (Appendix II). And then all of the subjects are given the post-questionnaire (Appendix IV) to find out the changes on students' attitudes and views after the

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practical teaching. Subsequently, some students in the class are interviewed (Appendix V) to learn about students' changes and actual situation based on CBI.

4.5 Instructional Design

In this research, it adopts the theme-based model under the guidance of CBI in English vocabulary teaching. The teaching activities are set according to the related topics and themes. It integrates content teaching with the language teaching in the process of English vocabulary teaching so that students can actively acquire the language through understanding the content. In the classroom, teachers should use target language to explain thematic and topics content and students should try to use the target language for output expression. The following is the implementation process of vocabulary teaching based on CBI.

4.5.1 Teaching Materials

The teaching materials of the research are mainly derived from students' Books 1 and 2 published by the Peoples' Education Press (PEP). Gao Qiaoqiao (2013) has proved that the teaching materials published by the Peoples' Education Press (PEP) are suitable for CBI philosophy and theme-based model in the light of CBI. Besides, The selection criteria for these topics are: 1) Being related to the unit topic; 2) Being written by native English speakers; 3) Being suitable for the senior high school students' proficiency. The teaching materials of related topics are shown in Table 4.1.

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Table 4.1 Teaching Materials

Teaching Material	Unit	Key words and Expression
Book 1	Unit 1 Friendship	add up, ignore, concern, go through, set down, at dust, suffer, recover, get tired of, get along with, calm down, grateful etc.
	Unit 2 English around the World	base, command, request, recognize, frequent, because of, come up, at present, make use of command, request, gradually etc.
	Unit 3 Travel Journal	transport, prefer, flow, persuade, be fond of, schedule, organize, graduate, reliable, change one's mind, make up one's mind, ever since etc.
	Unit 4 Earthquakes	disaster, shake, burst, injure, rescue, trap, dam, shelter, shock, frightened, destroyed, in ruins, right away, rescues...from, dig out, a great number of etc.
	Unit5 Nelson Mandela - a Modern Hero	quality, active, devoted,vote, attack, violent, out of work, as a matter of fact, equal, in trouble, turn to, lose heart, escape, educate, come to power, set up ,be sentence to etc.
Book 2	Unit 1 Cultural Relics	survive, design, fancy, belong, remove, rare, amazing, decorated, explode, sink in search of, belong to, in return, at war, less than, take apart, think highly of etc.
	Unit2 The Olympic Games	compete, magic, regular, admit, replace, deserve, responsibility, advertise, stand for, bargain, charge, responsibility etc.
	Unit3 Computers	solve,calculator,simplify, as a result, revolution, logical, explore, anyhow, artificial, intelligence, human race, in a way, arise,electronic,deal with, etc.
	Unit4 Wildlife Protection	die out, hunt, in peace, in danger, in relief, burst into laughter, contain, affect, pay attention to, appreciate, succeed, employ, come into being, inspect
	Unit5 Music	dream of, to be honest, perform, in cash, break up, in addition, sort out, above all, pretend, attach...to, play jokes on, get familiar with,attractive, sensitive etc.

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CBI is adopted in English vocabulary teaching. This research is carried out by making different instructional designs in terms of different topics. In this part, a teaching case of vocabulary teaching based on CBI is given in the research.

4.5.2 Teaching Schedule

1) The total time of vocabulary teaching based on CBI lasts 16 weeks. Each unit adopts CBI in the process of practical teaching, and each unit lasts a week and a half. During the research, students of the class follow the same syllabus and use the same textbook. However, different instructional design about vocabulary teaching is used in English vocabulary class. The following table shows the schedule of teaching in this research (Table 4.2).

Table 4.2 Schedule of Teaching
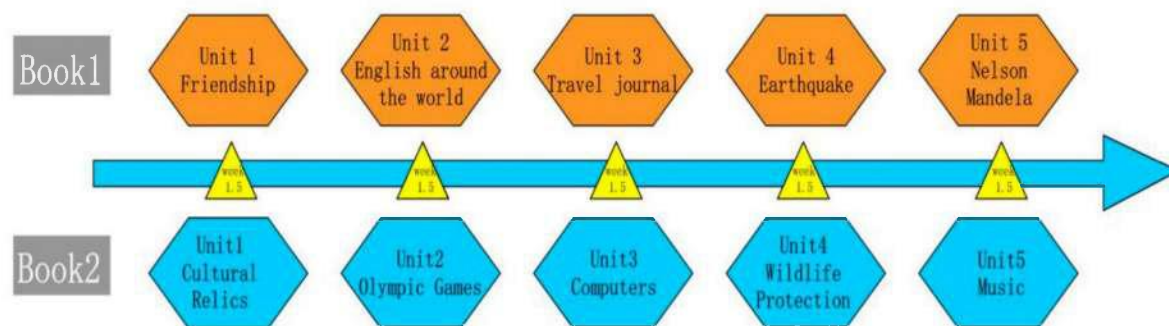
2) In the course of practical teaching, the instructional design is adopted PPP (3P) model to guide vocabulary teaching based on CBI in this part. There are five steps of this instructional design in all (including Leading in, Input the vocabulary; Practice and speaking; Making up a story; Consolidation and Assimilation). In this instructional design, listening, speaking, reading and writing are all involved to improve learner's comprehension language application ability. A short video named "*San Andreas*" containing words about "Earthquake" is adopted at the beginning of this instructional design. In the process of practical teaching, it mainly includes five steps:

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Step 1: Leading in

The teacher plays a video named *"San Andreas"* related topic (Earthquake) of the unit. Students watch the video and listen to the content carefully and try to write down some key words related topic of Earthquake by themselves. This step requires students to comprehend the related vocabulary in actual context. It can also make students familiar with the teaching materials and background to make a preparation for the following teaching activities. Besides, brainstorming game firstly is presented at the beginning of new lessons, which can be used to broaden students' thinking and let students feel the scene of earthquake to arouse students' desire of thinking and speaking about this topic.

Step 2: Input the Vocabulary

The teacher presents a question "Earthquakes are disasters to everyone. Can we foretell earthquakes? And then let's think and describe what strange things may happen before a big earthquake." Later, the teacher lets students answer it and presents some key words. Besides, the teacher shows students some key words to learn, which helps them understand the meaning in different contexts.

Step 3: Practicing and Speaking

In this step, owing to students' capability of vocabulary comprehension, it is difficult for them to conduct language output. Therefore, firstly, the teacher asks students to guess the words' meaning according to different sentences and contexts. And then teacher provides some different language situation and asks students to make sentences by using related topic words in order to make students understand it better in context. At last, the teacher gives an short prose *"Father and Son in An Earthquake"* to make students be familiar with vocabulary better before learning the text in the unit. The intention of this step is that students can learn new words and phrases in context to have a better mastery of the usage of words.

Step 4: Making up a Story

This is the most important procedure in the course of teaching. Firstly, the teacher presents some key words of the unit and tells students to make up a short story or passage based on these words. The step is the most important procedure in the process of teaching and it is an important stage to achieve a comprehensive language application. All of the former procedures are to make preparation for the vocabulary usage effectively. The activity aims at checking students' situation of vocabulary

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application by making up a short stories based on what they just learned words and phrases, so as to develop students' vocabulary learning proficiency through special content and context.

Step 5: Consolidation and Assimilation

The teacher asks students to complete a short story or passage in the discussion above after class. The intention of this step is to help students to have a better mastery of English vocabulary related to the topic of this unit through supplementing the contents of the passage and topics in discussion above.

4.5.3 A Case of Instructional Design

This research applies theme-based model in light of CBI to English vocabulary Teaching. Several different teaching activities are designed in vocabulary teaching based on CBI. The following is a teaching case of vocabulary instructional design of Unit 4 from Book 1 about CBI .

Teaching Case

Topic：Earthquake	Types of subject: Geography
Teaching time: 1 period (40 minutes)	Subjects：57 students in Class 1，Grade 1

Analysis of teaching material

This period is taken from Unit 4, Book 1 published by PEP. The topic of this unit is " earthquake". The material of this unit belongs to geography subject, and the topic content is closed to real life. Because this unit presents a lot of new words related with topics of "earthquake", the teacher should deal with some key words and phrases in order not to make students feel much difficult while they are reading. This period pays more attention to vocabulary application and usage of vocabulary learning strategies.

Analysis of academic situation

Students have learned a certain number of vocabularies about this topic, and have known some basic knowledge about the "earthquake", and have mastered some simple learning strategies and skills in junior middle school. However, some of them still lack of interest and motivation to learn vocabulary and most of them dare not

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speak English confidently. Therefore, in order to activate their learning motivation and create chances for them to overcome their existing problems, it is of great importance to set plausible learning situation and group activities to expand the vocabulary of related topics and to learn how to use the vocabulary what they have learned in this class.

Teaching objectives

By the end of the class,

1. Students must be able to master some important topic words and key expressions(disaster, shake, burst, injure, rescue, trap, dam, shelter, shock, frightened, destroyed, right away, in ruins, rescues...from, dig out, a great number of etc.).

2.Students must be able to understand the meaning and content of the words and use new the newly learned words and phrases correctly in special context.

Key points and difficult points

Key points

To understand and master the new words and phrases better in special context.

To use some key words and phrases to make dialogues and stories.

Difficult points

To understand and use some key words correctly in the certain context properly.

Teaching tools: text book, PPT, blackboard and chalks

Teaching procedures:

Step 1 Warming up (6mins)

1.The teacher plays a video named *"San Andreas"* related topic (Earthquake) of the Unit, and then ask students to watch the video carefully at first and then lets them try to write down some key words related to earthquake by themselves.

2. The teacher guides students to brainstorm and presents a question "what kind of natural disasters do you know?" (S1: Volcano   S2: Sandstorm   S3: Earthquake)

volcano	fire	sandstorm

typhoon	hailstone	thunderstorm

flood	hurricane	earthquake
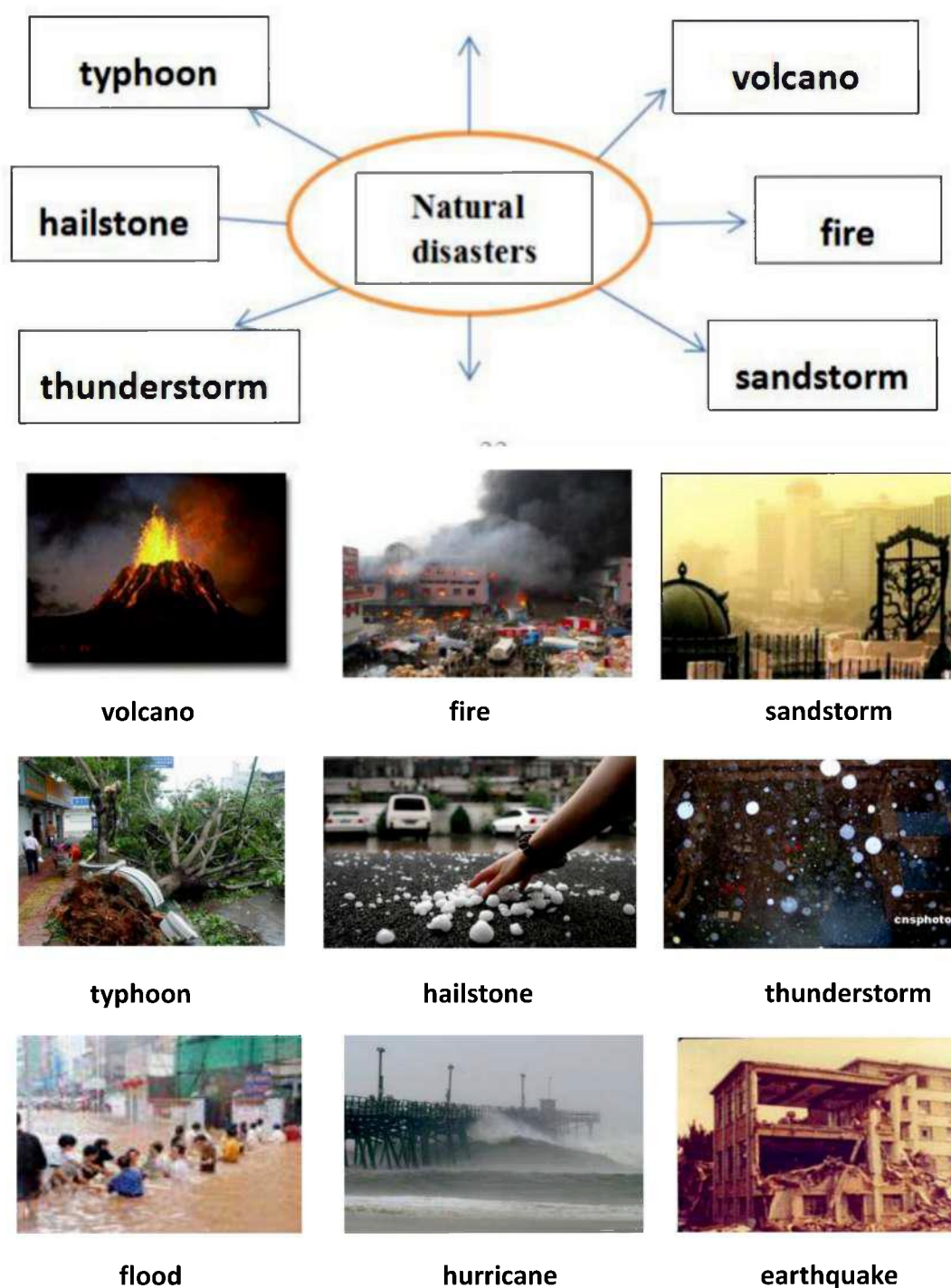
3.Then teacher presents a question "Have you ever experienced an earthquake? Can you describe how terrible an earthquake is?"

S1 :The earth shakes;   S2: All the buildings will fall down and be destroyed;

S3: Many people will be injured or die;   S4: Many children will become orphans.
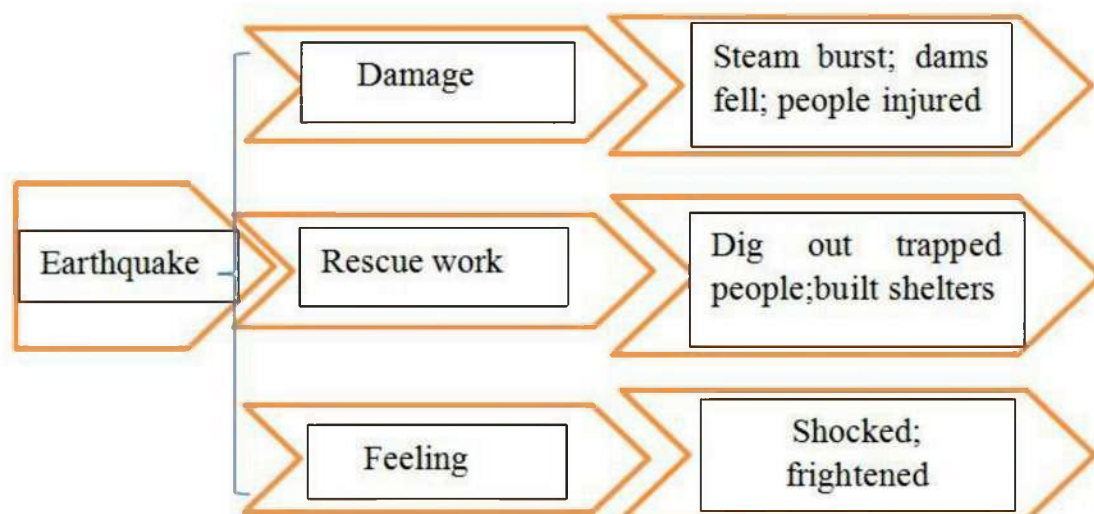
(**Intention**: To introduce new lessons by brainstorming can broaden students' thinking, and can let students feel the scene of earthquake to arouse students' desire of thinking and speaking about the topic.)

Step 2 Presentation(14 minutes)

1. The teacher presents a question "Earthquakes are disasters to everyone. Can we foretell earthquakes? Now let's think and decide what strange things may happen before a big earthquake." (**Activity 1**)

S1: There is often a great sound.   S2: Animals too nervous to eat.

S3: There are bright lights in the sky.   S4: A smelly gas may come out of the well.

S5: Water pipes may crack or burst.

2. The teacher shows students some sentences to help them understand the meaning of different contexts, and shows students some key words to learn them one by one, which helps them understand the meaning in different contexts.

(1) rescue

    1) The government has rescued the firm from bankruptcy by giving them a grant.

    2) Police rescued the hostages.

    3) All of fireman do their best to rescue the injured person from the big fire.

(2)destroy

    1) We want to nurture the new project, not destroy it.

    2) The new law operates to destroy our advantages.

    3) Please don't destroy the environment we live in.

(3) shock

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1) Anyone touching that wire could get badly shocked.

2) The violence and bad language in the program shocked many of the viewers.

3) He is shocked to hear his child swearing.

Step 3 Practice (8minutes)(Activity 2)

1. The teacher provides related different sentences or dialogues based on different context so as to make students understand better contents of this unit.

2. The teacher gives students a short prose to read in three minutes in order to make students thoroughly familiar with vocabulary in authentic context before learning better the text (Appendix Ⅶ).

3. The teacher asks students to make sentences or dialogues by using related topics words.

(**Intention:** This step can lead students understand the usage of the key words in the context and develop students' speaking skill.)

Step 4 Production(10 minutes) (Activity 3)

1. The teacher divides students into 8 groups, and lets them make up a short story or a short passage about earthquake by using words related to the topic of this unit. Finally, group leader expresses their story in class (earthquake, destroyed, in ruins, trapped, injured, shocked, bury, frightening, villages, burst, cracked etc.). Some typical examples are presented as follows:

Group 1: *(In 1976, An <u>earthquake</u> happened in Tangshan, Hebei province, everyone is shocked when hearing this news. How <u>frightening</u> we are! All of cities and <u>villages</u> are trapped in ruins. A number of buildings fell down and <u>destroyed,</u> and thousands people are trapped <u>in ruins</u>. Unfortunately, so many people are <u>injured</u> in this incident. Even many of them is died and buried in the end. After this earthquake <u>burst,</u> which brought huge disaster in our lives. But fortunately, all people and government took action to decrease damage.)*

Group 3: *(May 12th is a <u>frightening</u> day, in 2008, a shocking earthquake destroyed all if things around us, Large numbers of building are <u>in ruins,</u> and thousands of people are <u>injured</u> even died. And many <u>villages</u> are <u>buried in ruins</u>. It seems as if the world are coming to an end. All of people were homeless and hopeless. These unexpected things make people be trapped in difficult position. However, the government take measures to try their best to make people get out of trouble, which can make people*

overcome the damage of the earthquake to rebuild their homeland and face future life.

(**Intention**: Students make up a short story by using words and phrases related to earthquake to develop their learning vocabulary in special content and context, which can achieve the development of students' language application ability.)

Step 5 Homework (2 minutes)

The teacher assigns homework to students and asks them to complete the short story in the discussion above.

(**Intention**: To supplement the contents of the passage and topics of discussion can help students to master the vocabulary of the unit better.)

Reflection

First, contents about earthquake are presented in warming-up under the guidance of CBI during the process of teaching, which can not only activate students' existing knowledge about this topic but also arouse their learning interest. Moreover, in the whole process of teaching, the teacher pays much attention to the students' activities and involvement, which can contribute to developing their learning motivation, cooperation ability and communication skill. However, there are still some shortcomings in vocabulary teaching. Due to the limited time and abundant tasks, some students may fail to digest all content completely. Some key words and expressions can not be classified clearly or left out so the teacher had better improve instructional design subsequently according to the reflection.

4.6 Data Collection and Analysis

4.6.1 Data Collection

Before the practical teaching, a pre-questionnaire is firstly conducted to learn about students' attitudes and views of English vocabulary learning. The data of questionnaires are obtained after students finish them in time. Before questionnaires are issued, the teachers should explain the purpose of the questionnaire to the students and let them know that the results of the questionnaires can not affect them. The students are required to complete them seriously and carefully. It takes students 25 minutes to finish it from questionnaire issuance to questionnaire returned and the

original data is collected in the form of an Excel 2010. 57 copies of the questionnaire are used in the class before and after the practical teaching and they are completely collected. All of 57 copies of questionnaires are valid before and after the practical teaching.

Subsequently, a vocabulary pre-test is conducted to all the subjects in order to know about the students' English vocabulary level before the practical teaching. The subjects take part in the pre-test before the practical teaching and 57 test papers are valid. The post-test paper is conducted on the 57 subjects at the end of practical teaching for sixteen weeks. Two tests are designed to investigate whether applying theme-based of CBI can improve senior high students' vocabulary performance. It is proved that CBI can improve students' English vocabulary proficiency compared with vocabulary scores in the pre-test. Subsequently, a post-questionnaire is carried out to test the effect of vocabulary teaching and the students' attitude towards vocabulary teaching based on CBI. The interview (Appendix Ⅵ) is conducted to make up for information after the implementation of practical teaching.

4.6.2. Data Analysis

All the data from questionnaires are collected and they are put into Excel 2010 for further analyzing after practical teaching. The special situation in two questionnaires are analyzed. The results of questionnaire are analyzed (by Excel 2010) before and after practical teaching to find out the students' interest, effectiveness and attitude towards English vocabulary learning based on CBI. Through the analysis of the post-questionnaire, it can be found out that the English vocabulary teaching based on CBI can activate students' vocabulary learning interest and motivation, and promote students' vocabulary proficiency in the course of English vocabulary teaching.

The Pre-test and post-test are chosen to analyze the data by SPSS 23.0, and then the results of tests' scores are made a comparative analysis before and after practical teaching. In addition, the results of interviews are recorded and analyzed by a recording pen and then written down on a notebook.

5. Results and Discussion

This part mainly analyzes results and discusses all of the data collected during practical teaching including results of questionnaires, the pre-test and post-test, and interviews. Meanwhile, it analyzes and discusses the present situation in senior high school English vocabulary teaching and discusses the application effect of vocabulary teaching based on CBI.

5.1 Results of the Research

5.1.1 Results of the Pre-questionnaire

The pre-questionnaire is conducted to investigate the situation of students' vocabulary learning in the initial stage of the semester and it contains fifteen items. The first 15 items are closed questions in the form of multiple choice. 15 items can be classified into three categories, the following items are intended to know through the questionnaire for students: (1) students' learning interest and expectation of vocabulary learning; (2) students' attitudes and strategies of vocabulary learning; (3) students' problems in English vocabulary learning.

In Tianshui No.1 Senior School, 57 students from Class 1, Grade 1 are investigated. And for questionnaires delivered to the students, the valid questionnaires are 57 copies, accounting up to 100 % of the total sample. The following Table 5.1 is the analysis of the collected data. The detailed presentation of the collection data are as follows based on the original data (AppendixⅦ).

Table 5.1 Students' Interest and Expectation for English Vocabulary Learning

Items	Choices	Percentage (%)
Q1. I like learning English words.	A.Strongly agree	8.77
	B.Agree	29.82
	C.Uncertain	28.07
	D.Disagree	21.05
	E.Strongly Disagree	12.28
Q2. It is difficult to learn vocabulary in English learning.	A.Strongly agree	28.07
	B.Agree	38.59
	C.Uncertain	12.28
	D.Disagree	15.79
	E.Strongly Disagree	5.26
Q3. I believe that learning vocabulary well is the key to learn English well .	A.Strongly agree	36.84
	B.Agree	52.63
	C.Uncertain	10.53
	D.Disagree	0
	E.Strongly Disagree	0
Q5. I have confidence in English vocabulary learning.	A.Strongly agree	15.26
	B.Agree	21.05
	C.Uncertain	31.57
	D.Disagree	21.62
	E.Strongly Disagree	10.5
Q8. Do you hope to combine your English vocabulary learning with the topics you are interested in?	A. Very hopeful	36.84
	B. Hopeful	61.40
	C. Just a little	1.75
	D. No hope	0
	E. Others	0

As for students' interest and expectation of vocabulary learning, it can be seen from Table 5.1, from Question 1, only 8.77% of the students choose "Strongly Agree", so only a few students like learning English words very much. Furthermore, 33.33% (21.05%+12.28%) of the students are not interested in learning English vocabulary completely. For Question 2, 66.66% (28.07%+38.59%) of the students believe that it is very difficult for them to learn English, and while 21.05% of the students think that it is not difficult to learn vocabulary. In addition, for Question 3 "I believe that learning vocabulary well is the key to learning English." It can be seen that 89.47% of the students

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believe that it is key point for them to learn English vocabulary in the course of the English learning. And from the perceptive of Question 5, almost more than half of students have no confidence in learning vocabulary. From Question 8, it can be indicated obviously that 36.4% of the students would like to combine English vocabulary with the topics they are interested in, 61.40 % of the students significantly hope to combine English vocabulary with the topics they are interested in. It can be seen clearly that students are highly expecting to combine English vocabulary with the topics they are interested in, and most of students would like to combine some interesting topics with their English learning. Therefore, from the data above, it can be seen clearly that students have low interest, confidence and personal motivation in English vocabulary learning at present. What's more, the reasons are very different but the main ones are related to teachers' teaching mode, which can not help students form a good habit of learning it actively for a long time.

Table 5. 2 Students' Attitudes and Strategies for Vocabulary Learning

Items	Choices	Percentage(%)
Q4. I can learn to remember words actively and imitatively after class.	A. Strongly agree	15.7
	B. Agree	56.1
	C. Uncertain	22.8
	D. Disagree	3.5
	E. Strongly Disagree	1.75
Q9. English vocabulary class have great effect on the cultivation of listening, speaking, reading, and writing.	A.Strongly agree	45.61
	B. Agree	54.39
	C. Uncertain	0
	D. Disagree	0
	E. Strongly Disagree	0
Q10. What are the sources of your English vocabulary?	A. Textbook, exercise book	84.2
	B. Vocabulary book	45.6
	C. English original work	12.28
	D. English films	19.28
	E. English songs	26.31
Q11. What do you do when you encounter a new word in the course of English learning?	A. Look up the dictionary	28.07
	B. Ask the teacher and classmates	21.05
	C. Guess the meaning of the word	43.85

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	D. Leave it alone	35.8
	E. Others	0
Q14. In real life, I am used to combining with objects, I will take English sign into my mind uncousiously when I am shopping in supermarket.	A.Very consistent	5.26
	B. Basically consistent	21.05
	C. Rarely consistent	56.14
	D. Not consistent	17.54
	E. Not very consistent	0

It can be found from Table 5.2, Question 4, 9, 10, 11, 14 are put forward in the pre-questionnaire in order to have a good knowledge of students' attitude towards vocabulary learning in junior middle schools, which mainly contains the following aspects:

For Question 4, it can be seen that 71.8% (15.7%+56.1%) of the students can learn to remember words actively and imitatively after class but majority of students can not remember vocabulary initiatively after class. So students' learning initiative is relatively low. About question 9, all of students believe that English vocabulary class has great effect on the development of listening, speaking, reading and writing. Thereby,. it is most basic element and key to master a large amount of words for learning English well. From Question 10, 85.2% of the students learn words by textbooks and exercise books, while some of them have a good knowledge of vocabulary by watching English movies and listening English songs. So it is concluded that students learn words in a textbook and in a mechanical way. For Question 11, only 38.59% of the students can look up dictionary when they encounter a new word in the process of English learning, 43.85% of the students can ask their teachers and classmates for help, but only 8.7% of students leave it alone when they come across some new words. In real life, only 5.26% of the students are used to taking English sign into their mind unconsciously when shopping in supermarket. That is to say, few students can learn vocabulary combining with objects in real life.

Table 5.3 Students' Problems and Present Situation of English Vocabulary Learning

Items	Choices	Percentage(%)
Q6. I often communicate with my classmates in English in English vocabulary class.	A. Always	0
	B.Often	5.26
	C.Now and then	54.39
	D.Hardly	28.07
	E.Never	12.28
Q7. Does your teacher often only impart vocabulary knowledge with the learning contents in English vocabulary class?	A. Yes	53.1
	B. Not	0
	C. Both	43.85
	D. Not clearly	3.5
	E. Others	0
Q12.What do you encounter difficulties in the process of learning English?	A. Large amount of words	36.8
	B. Confusing words	28.07
	C. Pronunciation and spelling	22.8
	D. Even if you know, you will not use	71.9
	E. Being easy to forget	63.15
Q13. Which way do you usually adopt to learn vocabulary?	A. Listen to the teacher to explain the word	61.4
	B. Recite the word list	88.7
	C.Remember words by reading and writing	50.87
	D. Reading , but not writing	64.9
	E. Learning words by some example sentence	33.3
Q15. What do you think is the vocabulary teaching method commonly used by teachers?	A. Word pronunciation and meaning in the word list	22.81
	B. Explaining their usage when encountering new words in the text	73.68
	C. Picking out the new words in the text and explaining them one by one.	3.51
	D. Improving vocabulary recurrence and application by setting group activities	0
	E. Do not pay attention to the application of topic vocabulary content	0

Judging from the data in Table 5.3, from Question 6, 54.39% of the students communicate with their classmates in English occasionally, but only 5.26% of the students often communicate with their classmates in English class. In addition, 12.28% of the students never communicate with their classmates in English in the process of English learning, which is relevant to their education environment and their family environment. Because majority of the students are from the suburban area. As a whole, they are not willing to communicate with their classmates and they are shamed to speak English in English learning. In terms of Question 7, 53.1% of the students believe that most of the teachers pay more attention to vocabulary knowledge, rather than draw attention to related language content. 43.85% of the students state that it is very significant for their English vocabulary learning and it should be drawn more attention to some topics content in real life. But only 3.5% of the students think that they don't make clear that their teachers only impart vocabulary knowledge but ignores the learning contents in English vocabulary class. That is to say, nearly all of students (53.1%+43.85%) believe that learning vocabulary well is significantly helpful for English learners in senior high school, which should integrate content with language to learn English well.

It can be clearly seen that the most difficult part for students is how to master vocabulary by some efficient ways. As for Question 12, it can be shown clearly that most of students have much difficulty in learning English and they think that English vocabulary learning is the most key point and basic part in English learning. What's more, many students believe that they have much trouble in learning English vocabulary. For example, it is very difficult for students to remember large numbers of vocabulary; secondly, they also don't apply these vocabulary to practical learning even if they have a knowledge of these words. They are always worried about making mistakes. At last, it is easy to forget for them to learn English vocabulary. As for Question 13, it is found that 88.7% of the students learn words and enlarge the volume of vocabulary by reciting word-list. Only 17.5% of the students learn words by some examples sentences or contexts. Meanwhile, from Question 15, large numbers of students believe that their teachers should teach words by explaining usage rather than by picking out the new words in the text and explain them one by one when they encounter some new words in texts.

In the past, vocabulary teaching pays much attention to language form, while the contents of language are ignored. Students and teachers do not make communication with

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others in English in the course of English vocabulary learning, but pay more attention to language content and meaning. Therefore, English learners must have large numbers of comprehensive input of contents to reach language output.

5.1.2 Results of the Tests

Before the practical teaching, the pre-test has been conducted for all of test subjects at the beginning of the semester without telling them in advance (Appendix I). After the implementation of practical teaching, the post-test is conducted (Appendix II). Furthermore, the forms of the papers for the two tests are similar, and the difficulty of papers are consistent, including 3 kinds of question types: multiple choice question; cloze blank-filling; discourse blank-filling. Each small question is 1 point, with a total score of 50 points. Then scores of vocabulary test (Appendix VIII) are collected and analyzed, The purpose of the pre-test is to analyze whether there exist problems in their previous English vocabulary learning. The purpose of the post-test is to analyze whether CBI can improve students' vocabulary level of the class in English vocabulary teaching. It is conducted that statistical analysis for the pre-test and post-test (by Excel 2010 and SPSS 23.0) and some results of the statistic data are presented in the Table 5.4.

Table 5.4 Results of the Pre-test and the Post-test

Result of Test		Above 40	30-40 points	20-30points	10-20 points	Under 10 points
Pre-test	N	1	7	40	7	2
	P	1.75%	12.28%	70.18%	12. 28%	3.51%
Post-test	N	2	15	30	6	1
	P	3.51%	26.32%	52.63%	10.57%	1.75%
Pre-test	A	25. 09				
Post-test	A	28. 25				

(Note: N=number; P=percentage; A= average)

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