The effect of etymological elaboration on L2 idiom acquisition and retention in an online environment (WebCT)

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The effect of etymological elaboration on L2 idiom acquisition and retention in an online environment (WebCT)

by

Lei Zhang

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF ARTS

Major: Teaching English as a Second Language/Applied Linguistics (Computer-assisted Language Learning)

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Iowa State University
Ames, Iowa
2009

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ABSTRACT

Although research on the effect of etymological elaboration (provision of information about a word’s origin and background in instruction) on L2 idiom acquisition has showed that it is a useful mnemonic approach that can help L2 learners retain target idioms (Boers, Demecheleer, Eyckmans, 2000, 2004, 2007), most previous studies were conducted in a pencil and paper based situation and few made use of computer technology and internet as a vehicle to deliver such an instructional approach. With a wide use of web-based learning tools (Moodle, WebCT, etc) in American universities, Research data on the online application of etymological elaboration and its effect are far from sufficient compared with those from classroom experiments. Therefore, a study on the actual effect of etymological elaboration in an online learning environment is necessary to supplement previous studies by providing more information about the effect of such an instructional approach in different media.

This current study, grounded on cognitive learning theories and web-based learning framework, was designed in an online, autonomous learning manner. Specifically, it intended to measure L2 learners’ acquisition and retention of target idioms through two different instructional approaches, etymological elaboration and traditional rote learning, in an online learning management system (LMS), WebCT. Three research questions were addressed in the study: 1) Can online learning contribute to students’ L2 idiom acquisition? 2) Can an etymological elaboration approach be effective in facilitating students’ L2 idiom retention in an online environment? 3) What are the
strengths and drawbacks of learning idioms online according to learners’ learning experience? Seventy Chinese sophomores in Anhui university, China, participated in the study and their productive and receptive knowledge of target idioms were measured through data collected from pretests, post-tests, delayed post-tests. In addition, an online questionnaire survey was distributed to the participants to look into their actual online learning experience.

Results of the study indicated that while online learning was an effective way to facilitate L2 idiom acquisition for both instructional approaches, etymological elaboration did not produce an overall significant effect on the retention of target idioms over traditional rote learning approach except in the retention test of productive knowledge of target idioms.
CHAPTER 1.  INTRODUCTION

The Study

This study aims to investigate the effectiveness of etymological elaboration in second language idiom acquisition in an online environment. Specifically, the study divides subjects into experimental and control groups and compares their learning outcomes in an online Learning Management System (LMS), WebCT, at Iowa State University (ISU). During the process of online learning, the two groups are given the same learning material but with different instructional approaches. The experimental group is treated with an etymological elaboration approach, which helps raise their awareness of metaphors in target idioms by tracing back to the literal or original usages of idioms, while the control group is treated with a traditional learning approach in which they are provided directly with figurative meaning of idioms without alluding to their origins. All learning activities in the study are conducted via WebCT. This study tries to seek answers to three questions: a) Can online learning contribute to students’ L2 idiom acquisition? b) Can an etymological elaboration approach be effective in facilitating students’ L2 idiom retention in an online environment? c) What are the strengths and drawbacks of learning idioms online according to learners’ learning experience?

Research rationale

The rationale of this study is based on the following research. First, L2 idiom learning constitutes a difficult part in second language acquisition because idioms are
word collocations with figurative meanings that cannot be easily predicted from the literal meanings of their constituent parts. This presents a difficulty to L2 learners of lower language proficiency (Cooper, 1999). Second, statistics show that “most English speakers utter about 10 million novel metaphors per lifetime and 20 million idioms per lifetime.” (Cooper, p. 233), which indicate that idioms are commonly used among native speakers and that L2 idiom instruction should be paid much attention to in classrooms. Third, idioms contain rich, unique features of the language and culture. Many are culture or language-specific. Learning these idioms provides L2 learners with good opportunities to understand and acquire information about L2 cultural beliefs and customs as well as the linguistics features of the language (Liu, 2008). Fourth, research shows that the extent of an L2 learners’ mastery of idioms is a good indicator of his or her language proficiency level (Yorio, 1989) and the number of idioms acquired is positively correlated with the degree of success on communicative tasks (Duquette, 1995; Schmitt, 2004). To help L2 learners acquire idioms effectively and retain them for a longer time, studies from cognitive linguistics have focused on using etymological elaboration as a mnemonic approach to facilitate learners’ L2 idiom retention, a method that helps L2 learners to comprehend and remember figurative idioms by raising their awareness of the literal origins or source domains of those idioms. Such an approach has been proved effective in various paper-and pencil experiments (Boers, Demecheleer, Eyckmans, 2004). However, one deficiency of previous research is that most studies were conducted in a classroom setting and few took the advantage of computer technology and the internet. So far the only large-scale online experiment documented in literature is one conducted by Boers, et
al. (2004). They designed an online software package, *Idiom Teacher*, and used it for their students. The software contains 400 hundred English idioms with relevant exercises that arouse learners’ awareness of the origin and source domain of each idiom. Their research results reveal that “information about the origin of an idiom often enables learners to figure out their idiomatic meaning independently” (Boers, et al. 2004, p.53) in accordance with previous paper-based experiments. Be that as it may, similar online research is scarce and far from enough to give a concrete picture of the effect of etymologically-enhanced instruction on L2 idiom comprehension and retention in an online environment.

Moreover, with the advent of computer technology in fast development, online CALL applications for language learning have been taking various forms (i.e. a software package, a website, a virtual classroom, an add-on component in LMS, etc). Therefore, the dearth of etymological elaboration experiments conducted via different online CALL applications makes it necessary to test the effect of etymological elaboration in web-based tools other than software packages. In this study, research focuses on the effect of an etymological instruction approach in WebCT, a learning management system. An online platform was undertaken for this study because of its accessibility on campus at Iowa State University and at many other institutions world-wide. Teachers at ISU usually deliver course syllabi, handouts, assignments and tests through WebCT, making it a useful complement for classroom instruction. WebCT is also a potentially powerful tool for language learning and assessment and its usefulness has been explored by many researchers (Godwin-Jones, 2002; Chapelle & Douglas, 2006; Chen, 2004). Therefore, an investigation of the differential effects of idiom instruction in WebCT can provide more
information on the effect of etymological elaboration in various web-based learning environments.

Based on the aforementioned rationale, this study looks specifically into differential effects of etymological elaboration and rote learning on idiom comprehension and retention in an online environment and the effect of internet-based computer technology on L2 learners’ learning outcome. During the study, a WebCT course was set up for data collection through Information Technology Services at ISU. The online course includes several learning and assessment units: a pretest, two learning units in different instructional approaches, a set of post-tests, and a set of delayed post-tests. Specifically, the purpose of the pretest unit is to test subjects' prior idiom knowledge before undergoing the instructional treatment in the study. The learning units contain 15 of the least known idioms by subjects, based on the pretest, that are elaborated differently. The unit for the experimental group includes etymological information of each idiom for deeper comprehension, whereas the unit for the control group only includes the direct figurative meaning of each idiom for subjects to memorize as much as they can. To ensure that all elaborations used in the learning units fit subjects’ reading proficiency in English so as not to be a factor that affects their comprehension of the idioms, a pilot study was carried out first with five students of the same English proficiency level as the other participants, along with a survey questionnaire regarding comprehension difficulty of the texts in the learning units and the assessments. After that, with minor modification, the entirety of learning activities were distributed to all subjects in the study for testing and data collection. The process of data collection took three steps (pre-test, post-test and
delayed post-test) and subjects’ performance in each of these steps was analyzed to help draw conclusions for the study. A detailed questionnaire survey regarding personal learning experience was also administrated to subjects to help elicit more information for the study. The data gathered in the study underwent both qualitative and quantitative analysis and conclusions were drawn based on obtained results.

**Structure of thesis**

This thesis is organized into five chapters. Chapter 2 provides a comprehensive literature review of relevant theories and studies related to the current study. Chapter 3 describes in detail the methodology and data collection process of the study. Chapter 4 gives analysis of collected data and draws conclusions with respect to the three primary research questions. Chapter 5 concludes with a summary of the results, some limitations of the study and implications for the teaching and learning of idioms, the use of CALL for idiom instruction, and suggestions for future research.
CHAPTER 2. LITERATURE REVIEW

The purpose of this chapter is to provide a theoretical background for current study by reviewing relevant literature on idiom comprehension and acquisition, cognitive approach to idiom instruction, and WebCT as an online learning tool in L2 acquisition.

Importance of Idiom Acquisition in SLA

Idioms are a type of multiple word units that have both literal and figurative meanings. In most cases, the figurative meaning of an idiom cannot be readily derived from the literal meaning of the individual constituent in the unit. Frequently cited examples are *kick the bucket* and *bite the dust*, whose figurative meaning is *to die*. However, most L2 learners would make no sense of the idiom if only decoding based on the literal meaning of its lexical units (i.e. *kick* and *the bucket*). Because the figurative meaning of an idiom is difficult to predict from its literal meaning, idiom processing and comprehension presents “special difficulty to L2 learners, as well as a never-ending challenge for ESL teachers” (Cooper, 1999, p.233).

Apart from difficulties in comprehension, idioms are frequently used by native English speakers and appear everywhere in written and spoken texts. According to a study by Pollio, Barlow, Fine, and Pollio (1977), in which they analyzed political debates, psychology texts, novels, and psychotherapy sessions, “Most English speakers utter about 10 million novel metaphors per lifetime and 20 million idioms per lifetime” (p. 140). Cooper (1999) points out, “Indeed, mastery of an L2 may depend in part on how well learners comprehend initially and produce eventually the idioms encountered in everyday
language” (p234). Idiom acquisition has become an important constituent in L2 vocabulary acquisition and the necessity of research on it is well-grounded.

Liu (2008) lists six main reasons why L2 learners should spend time and effort in the area of idiom acquisition:

First, according to Sinclair (1987), language use is governed by two operating principles: the open choice principle and the idiom choice principle, and the two principles are complementary in ensuring successful language production. Specifically, the open choice principle posits that once a unit is completed (a morpheme, a word, a phrase), a large range of grammatical choices opens up to combine that unit with other units to build up the text. The idiom choice principle holds that word choices or combinations are not random, and speakers use a large number of pre-constructed phrases including idioms in their communication. Idioms are an important class of pre-constructed phrase and therefore play an essential part in language development.

Second, research indicates that because of their vividness and appeal to the senses and imagination, idioms are especially useful and effective in performing informative and evaluative functions and can sometimes help speakers convey their messages in a way non-idiom expressions can not (Fernando, 1996; Moon, 1998).

Third, formulaic expressions, especially figurative idioms, can not only help L2 learners communicate more effectively but assist L2 learning by offering learners language input that can be segmented and analyzed (Bardovi-Harlig, 2002; D. Wood, 2002; Wray, 2000).

Fourth, many idioms are culture- or language-specific. Learning these idioms
provides L2 learners with a good opportunity to understand and acquire information about
L2 culture beliefs and customs as well as linguistic features of the second language. A
common example of such culture-specific idioms is the abundance of many sports-related
idiomatic expressions in American English, such as off base and touch base, which
reflects Americans’ enthusiasm for baseball.

Fifth, colloquial idioms are used very frequently in casual conversations between
friends or peers. Encouraging L2 learners to learn and use such expressions helps create
more language practice opportunities to communicate with native speakers.

Sixth, as some researchers point out, the extent of an L2 learner’s mastery of
idioms is a good indicator of his or her L2 proficiency level (Yorio, 1989). Moreover,
research indicates that the number of idioms acquired is positively correlated with the
degree of success on communicative tasks, suggesting a close connection between idiom
acquisition and communicative ability (Duquette, 1995; Schmitt 2004).

Criteria for Defining Idioms

Idioms are one type of multi-word units (MWUs). However, over the years,
although linguists and lexicographers tried to define and classify idioms, their work
returned no consensus or classification criteria. Cowie (1998, p.218) notes this problem
and comments, “Differences between word combinations such as free phrases, restricted
collocations and idioms – all crucial to the foreign learner – are neither presented
consistently nor explained adequately in reference works.” In their recent effort to
re-define idioms based on previous criteria, Lynn and Laurie (2004, p.44) argue that the
criteria established by previous linguists “have often been general so as to apply to the wide-ranging MWUs found in this category, and have been a description of them rather than a definition.” They therefore proposed a more restrictive definition to narrow-down traditional definitions. Specifically, they suggest three categories of idiomatic expressions: core idioms (non-compositional MWUs, the meaning of which cannot be predicted from the meaning of their constituent parts, for example, *shoot the breeze*), figuratives (MWUs with metaphors) and ONCEs (one non-compositional element). By examining previous studies on idiom definition, Lynn and Laurie (2004) conclude that the key criterion to define an idiom from MWUs is its non-compositionality. They proposed a three-step test (see Table 2.1) to classify MWUs into the above three categories and applied the test to MWUs in two major idiom dictionaries. They found that none of the selected idioms in the two dictionaries passed their test and fit into three categories, which indicated that the previous “blurred boundaries” between idioms and non-idioms allowed a much greater inclusion of fixed expressions in current idiom dictionaries. In conclusion, Lynn and Laurie’s (2004) attempt to re-define idioms provides linguists and ESL teachers with more insight into the characteristics of idiomatic expressions and at the same time help suggest appropriate pedagogical approaches in teaching idioms. For example, one suggestion they made for the teaching of figuratives is to introduce conceptual metaphors to L2 learners. This suggestion will be further elaborated in the following sections of the literature review on the metaphorical nature of figurative idioms.
Table 2.1 A three-step test to determine a core idiom (adapted from Lynn and Laurie, 2004, p 52).

<table>
<thead>
<tr>
<th>Step 1. Is the meaning of the MWU retained if you replace each lexical word in the MWU with its own definition?</th>
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<tr>
<td>Y=compositional        N=non-compositional</td>
</tr>
<tr>
<td>Step 2. Is it possible to understand the meaning of the MWU by recognizing the untruth and pragmatically reinterpreting it in a way that correctly explains the MWU?</td>
</tr>
<tr>
<td>Y=figurative           N=non-figurative</td>
</tr>
<tr>
<td>Step 3. Is there only one word in the MWU which is either not literal or non-compositional?</td>
</tr>
<tr>
<td>Y=ONCE (one non-compositional element)</td>
</tr>
<tr>
<td>N=more than one element is non-compositional</td>
</tr>
</tbody>
</table>

- If all the three answers are NO, the MWU is a ‘core idiom’.
- If any of the three answers is YES, the MWU is a not a ‘core idiom’ (may be a figurative, or a ONCE).

Idiom Processing and Comprehension

Research on idiom acquisition has focused on both L1 and L2 learners. Specifically, in L1 idiom comprehension, five models were proposed by researchers. In the area of L2 idiom processing, much effort has been placed on the effect of L1 transfer on L2 idiom acquisition. This section will review these studies briefly.

Models of L1 Idiom Processing and Comprehension

Previous research on L1 idiom processing has resulted in many different hypotheses, which can be boiled down to five models: 1) the idiom list hypothesis, 2) the lexical representation hypothesis. 3) the direct access hypothesis, 4) the compositional analysis, and 5) the dual idiom representation model. In particular, Glucksberg (1993) classified the first four models into two types of approaches. The first type, called direct
look-up, treats idioms as expressions that have meanings that are stipulated arbitrarily. According to this type of models, idioms are comprehended by retrieving their meanings as a whole. For example, the idiom kick the bucket is often accessed directly with its figurative meaning to die. Glucksberg (1993) gave the name compositional, to another type of model that deals with the processing of non-arbitrary idioms. Take carrying coals to Newcastle as an example, the relation of coals to Newcastle is a matter of historical fact, and the literal act of carrying coals to the coal-mining center of Newcastle is a useless and redundant action. Therefore, according to this type of model, idioms are normally comprehended by ordinary linguistic processing combined with pragmatic interpretation in discourse contexts.

There are three models in the category direct look-up. Bobrow and Bell (1973) proposed the first model, the idiom list hypothesis. According to this model, idioms are presented in a mental idiom list that parallels with other lexicon lists in a person’s mind. When a native speaker first encounters an idiom, s/he would try to interpret it literally. However, if his/her linguistic analysis fails, s/he would refer to a mental idiom list (pre-stored idioms that the native speaker already knew) to search for the figurative meaning of that idiom. However, this model was rejected later by findings that idioms are understood at least as quickly as comparable literal expressions (Gibbs, 1980). The reason is that in timed idiom comprehension experiments, if subjects had to compute the literal meaning of the expression first, it may take them longer time to access the figurative meaning of an idiom: however, results showed that they never understood the literal meanings more quickly than they understood the figurative ones (Glucksberg, 1993).
A second model of idiom comprehension was proposed by Swinney and Cutler (1979), called the *lexical representation hypothesis*. In this model, idioms are considered to be long words that are stored in the mental lexicon along with all other words. A native speaker who encounters an idiom processes both the literal and the figurative meanings of the expression simultaneously, which results in a "horse race" in which the context determines the more fitting interpretation (Cooper, 1999). As Glucksberg (1993, p.5) points out, this hypothesis “accounts nicely for the relative ease of understanding familiar idioms” because if an idiom looks familiar, the comprehension process will be completed more quickly since “it does not require the lexical, syntactic, and semantic processing required for full linguistic analysis.”

Gibbs (1984) extended the *lexical representation hypothesis* to a third model, the *direct access hypothesis*, and argues that a common idiomatic expression that is familiar to native speakers can be accessed directly to its figurative meaning without any prior reference to its literal meaning. The hypothesis was considered as an extreme version of the previous *lexical representation hypothesis* model by Glucksberg (1993) and supported by the fact that in experiments subjects chose the figurative meaning of familiar idiomatic expressions much faster than the literal meaning, which led researchers to assume that native speakers do not process the literal meaning of familiar idioms by default; instead, they access the figurative meaning directly. In short, all these three models of idiom processing share a common assumption that figurative meanings are comprehended by direct memory retrieval and therefore belong to class of *direct look-up*.

The second type of idiom comprehension contains the fourth model, the
compositional analysis. This model was proposed by Gibbs, Nayak, and Cutting (1989), who discovered that in a series of timed experiments, subjects needed significantly less time to process decomposable idioms than to process non-decomposable idioms. The decomposable idioms are idioms whose figurative and literal meanings are close to each other (e.g., pop the question), while the non-decomposable idioms are idioms whose literal meaning offers no clue for the construction on the figurative meaning (e.g., kick the bucket). According to Gibbs (1984), "These data suggest that people attempt to do some decompositional analysis when understanding idiomatic phrases. When an idiom is decomposable, readers can assign independent meanings to its individual parts and will quickly recognize how these meaningful parts combine to form the overall figurative interpretation of the phrase" (p. 285). Therefore, this model states that people do not shut down their normal linguistic processing mode when they encounter an idiomatic phrase; instead, they automatically analyze the grammatical structure of the words and phrases they hear or read; the lexical processor accesses the lexical items in the mental lexicon and assigns a meaning to them; and a semantic analysis is undertaken on the basis of the grammatical structure and the meaning of the lexical items of the phrase (Flores d'Arcais, 1993). In this way, idioms are processed as any phrase or sentence is, and the meanings of the individual words of the idiom contribute to an overall figurative interpretation of the phrase. However, researchers also realized that this model cannot work alone during the idiom comprehension process and often occurs in parallel with direct look-up models. Specifically, when an idiom is recognized as a unitary expression and cannot be decomposed to retrieve its meaning from constituent parts, a direct look-up model starts
to work (Glucksberg, 1993).

The fifth model, the dual idiom representation model, is the most recent theory and is regarded by some researchers to offer a more complete picture of idiom processing (Liu, 2008). Proposed by Titone and Connine (1994, 1999) and later enhanced by Abel (2003), the model is built on all four earlier hypotheses and posits that idiom comprehension involves both normal linguistic processing (the essence of the compositional analysis hypothesis) and direct memory retrieval (the gist of all the first three hypotheses). In particular, the model agrees with the compositional analysis hypothesis that idiom comprehension involves normal linguistics processing where both literal and figurative meanings may be activated but it also believes that during the comprehension process, retrieval of pre-stored idiom lexicon may ensue depending on whether the idiom is decomposable or non-decomposable. Therefore, when the dual idiom representation model is applied to idiom comprehension, normal linguistic processing competes with direct memory retrieval from idiom entries, and which of the two is activated depends on the decomposability and familiarity of the idiom.

L2 Idiom Processing and Comprehension

Compared with an enormous amount of research on L1 idiom processing, the number of studies on L2 idiom comprehension has been rather small. In general, research on L2 idiom comprehension has not attempted to identify specific L2 idiom comprehension models; rather, much effort has been put into the investigation of comprehension strategies involved in L2 idiom processing. Major comprehension
strategies include use of contextual information and use of L1 in L2 idiom comprehension.

In terms of using contextual information in L2 idiom comprehension, studies have found that guessing from contextual information is the most frequently used and also the most effective strategy. One such strategy was conducted by Cooper (1999). Specifically, he used the think-aloud research method in an attempt to investigate strategies L2 learners of English used when they encounter unfamiliar idioms. Overall, eight strategies were identified from Cooper’s data: guessing from context (28%), discussing and analyzing the idiom (24%), using the literal meaning of the idiom (19%), requesting information (8%), repeating or paraphrasing the idiom (7%), using background knowledge (7%), referring to L1 idioms (5%), and other strategies (2%). Among these, guessing from context, discussing and analyzing the idiom, and using the literal meaning of the idiom were the three most frequently used strategies. However, as to strategies that led to correct comprehension of idioms, guessing from context (57%), using the literal meaning of the idiom (22%), and using background knowledge (12%) were the most successful ones.

Research on the use of L1 in L2 idiom processing tends to focus on L1 transfer in L2 idiom comprehension and whether such a transfer aids or interferes with comprehension. In her experiment, Irujo (1986) asked Spanish learners of English to recognize and give the meanings of three groups of English idioms. The idioms in the first group were identical to Spanish idioms, the idioms in the second group were similar to Spanish idioms, and the idioms in the last group were very different from Spanish idioms. The data obtained from this study showed that subjects easily comprehended and
produced the idioms that were identical to Spanish idioms. Similarly, Kellerman (1983) conducted a study addressing a relationship between L1 knowledge and interpretation of the figurative meaning of L2 vocabulary. In his study, Kellerman (1979) first asked native Dutch speakers to sort 17 sentences containing *breken* (break) into groups by similarities in meaning. A semantic analysis divided those sentences into two dimensions of semantics with regard to the use of *breken*, core (*He broke his leg*) and noncore (*Some workers have broken the strike*). Kellerman then asked 81 Dutch students to say which of the 17 Dutch sentences with embedded *breken* they would translate into corresponding English sentences with *break*. His results showed that a greater percentage of Dutch students (81%) accepted as translatable the English sentences corresponding to the core meaning of the Dutch verb *breken* than the English sentences corresponding to peripheral meanings. For example, *breken* was acceptable for a core semantic use in the English sentence, *He broke his leg*, but not for the sentences with noncore or peripheral use, *Some workers have broken the strike*.

Research indicates that the comprehension of many idioms, especially those based on metaphors, can be motivated by the human conceptual system (Boers et al, 2001; Boers et al, 2004; Kovecses and Szabo, 1996). These idioms are made meaningful by the conceptual structures underlying them. For example, the meaning “achieved a great success in something” can be derived from an American baseball idiom *hit a home run* though a conceptual (metaphorical) structure of “LIFE/WORK IS SPORT”. Gibbs and other researchers conducted a series of studies on the function of conceptual knowledge in the comprehension of metaphorical idioms (Gibbs, 1990, 1995; Nayak and Gibbs, 1990
Their findings demonstrate that an individual's "understanding of idioms is often constrained by their conceptual knowledge of the domains to which idioms refer" (Nayak and Gibbs, 1990, p. 328), and it is this conceptual knowledge of the metaphorical connection between the source and target domains that makes comprehension of metaphorical idioms possible (Liu, 2008). In addition, researchers found that conceptual knowledge is often culture-specific since some conceptual metaphoric links have been shaped by specific cultures (Boers and Demecheleer, 1997, 2001). Boers and Demecheleer's corpus research (1997) reveals that sailing is a relatively dominant source of metaphorical idioms in English while food and cooking are a more productive source in French. Liu (2002) conducted an extensive comparison between dominant American and Chinese metaphorical idioms and his finding also indicates that the knowledge of some of conceptual and metaphorical links is culture-specific. For example, in many cases, Americans use sports and business metaphorical idioms, but Chinese employ eating and family metaphors in expressing the same meaning. On the other hand, lack of culture-specific conceptual knowledge has been found to cause problems in L2 idiom comprehension. Boers and Demecheleer (2001) conducted a study that involved French ESL college students guessing the meaning of metaphorical idioms in English that had no equivalents in French. The sources of those idioms also varied: some of the source domains were prominent in French and some were not. Their results showed that the students had significantly more difficulty in guessing the meaning of English idioms whose source domains were not frequent in French.

Returning to Cooper's (1999) study, in terms of the extent that the L1
comprehension models of idiom apply to the comprehension of idioms by L2 learners of English, Cooper concluded that the models are “each too limited in scope to account for the wide variety of strategies employed by subjects in the present study” (pp.255). Instead, he discovered that L2 subjects in his study tended to employ “a heuristic approach in solving the linguistic problem of finding the meaning of the idioms”(p.256), through a trial and error effort to seek for figurative meaning of L2 idioms, by applying a variety of strategies, including guessing, using pragmatic knowledge and experimentation. Cooper’s conclusion is later supported by Bulut and Celik-Yazici’s (2004) study of the idiom processing strategies employed by 18 Turkish teachers of English. Their results show that the subjects, like those in Cooper’s study, also used a heuristic approach in their interpretation of figurative idioms.

In summary, research on both L1 and L2 idiom comprehension reveals the complexity of idiom processing. Although native speakers and L2 learners employ multiple models and strategies to figure out the meanings of idioms, many factors may interfere with their comprehension, including familiarity, transparency in meaning and semantic analyzability, context of use, learners’ age and cognitive styles, etc (Liu, 2008). On the other hand, difficulty in idiom comprehension has brought up pedagogical challenges to psycholinguists and ESL teachers. How to teach idioms effectively to L2 learners has become a focus of recent pedagogical research on idiom acquisition. The following sections will shift to a discussion of effective pedagogical approaches to L2 idiom acquisition.
Teaching of Figurative Idioms

This section first reviews three cognitive theories that are believed to contribute to the teaching and comprehension of figurative idioms: conceptual metaphor, the dual coding theory, and the levels of processing theory, and then explains how previous studies applied these three theories to etymological elaboration as an effective instructional approach to L2 idiom learning.

Teaching of Figurative Idioms: A View From Cognitive Semantics

Research in cognitive semantics has shed new light on the comprehension of figurative expressions and suggested new approaches to teaching idioms. Traditionally, it is held that one of the criteria to classify an idiom is its non-compositional nature (Fernando and Flavell, 1981). If an expression is said to be non-compositional, its meaning cannot be derived by simply adding up the meaning of its constituents. Therefore, the meaning of idioms is believed to be quite arbitrary. Because of this alleged arbitrary nature of the semantics of idioms, the figurative meaning of many idioms has been considered as “dead” metaphors, metaphors that have been used so long and so commonly that their users do not even know the original significance of their figurative meanings. And in ESL/EFL education, it has been taken for granted that learners could only resort to contextual clues to interpret idioms and acquire idiomatic expressions through memorization and rote-learning (Cooper, 1999). However, cognitive semantic studies of figurative language (Gibbs, 1994; Kövecses, 1990; Lakoff, 1987) have revealed that there are quite a few idioms that are not completely arbitrary. Instead, they are
“motivated”, which means that, while their figurative meaning cannot be fully predicted from a literal reading and comprehension of their constituents, the derivation from that literal meaning can be explained and a connection between their figurative and literal meanings can be established eventually. Such a connection can be motivated through general conceptual metaphors. For example, there is a saying in English, “You are what you eat.” The conceptual metaphor associated with expressions like a couch potato, a big cheese, the cream of the crop can be PEOPLE ARE FOOD. The characteristics we associate with food are therefore associated with idioms that describe people. In his seminal work, Metaphors We Live By, Lakoff (1980) points out that people’s conceptual systems are largely metaphorical and what people think, experiment, and do everyday is very much a matter of metaphor. Such a fact exits pervasively in language. Again with an example, under a conceptual metaphor, IDEAS ARE PLANTS, the following expressions can be identified:

His ideas have finally come to fruition.

That idea died on the vine.

That’s a budding theory.

It will take years for that idea to come to full flower.

The seeds of his great ideas were planted in his youth.

She has a fertile imagination.

He has a barren mind.

Lakoff’s (1980) theory of conceptual metaphor has been accepted by many psycholinguists and experimented with in recent years. One extension of the theory is to
add more details to a generic metaphor and map them to more specific source domains, which is believed to contribute to the comprehension of figurative expressions because “…they map our experience of more specific source domains onto an understanding of abstract phenomena” (Boers et al., 2004, p.56). For example, the expression *a shot in the arm*, instantiates metaphor, but it can be motivated by its original usage in a source domain of health and medicine, in which a doctor gives a patient an injection of a drug or medicine to stimulate her/him. Another example is *a race against time*, although it reflects the metaphor, TIME IS A MOVING OBJECT, it is also motivated by the imagery in a source domain of sports, a racing contest. Boers et al. (2004) point out, unlike general physical experience, specific experiential domains are more likely to be culture-dependent and thus to vary from place to place. Therefore, “a particular domain may not be (equally) available for metaphorical mapping in all cultures” (Boers et al, pp56). For example, a type of source domain in English idioms that is culture-dependent is sports, since cultures differ in their preferences for types of sports; baseball, for example, is evidently much more popular in the U.S. than in Europe. Consequently, American English has produced many baseball-based figurative expressions, such as, *touch base*, or *get to first base*. Such an awareness of culture and metaphor connection can be beneficial for language learners since historical and cultural knowledge behind a particular figurative expression offers opportunity for comprehension in depth.

Apart from the theory of conceptual metaphors, two other cognitive theories are believed to help predict the effectiveness of etymological elaboration as a mnemonic technique in L2 idiom acquisition: *the dual coding theory* (Paivio, 1991) and *the levels of
The dual coding theory by Paivio (1991) is a general theory which accounts for both verbal and nonverbal cognition. It has been advanced recently as a theory of literacy. Simply put, the theory claims that language is usually processed mentally through verbal and nonverbal decoding. The verbal code involves all forms of spoken and written language and the nonverbal code deals with the representation of nonverbal objects, events, and situations. Imagery is a major form of nonverbal code. The process of decoding verbal and nonverbal codes can happen simultaneously. A word can be understood successfully if its learners are able to access both verbal and nonverbal codes. However, learners will have less access to abstract language than to concrete language because for the former, it is hard to come up with a concrete image and thus the decoding of nonverbal codes is not successful. This accounts for the reason why a concrete word like tree can be better memorized by learners than an abstract word true. When this theory is applied to idiom comprehension, etymological elaboration is likely to help learners call up a mental image by activating the literal or original usage of a figurative idiom in specific source domain or context. The verbal information of the idiom is therefore encoded in a dual fashion, and with the help of a mental image learners are believed to recall the figurative meaning more easily.

On the other hand, since etymological elaboration provides learners with more information for comprehension, it takes a longer time as well as several steps for learners to process received information. The benefits of multi-step processing are supported by the levels of processing theory. In general, the theory stresses the following main points:
1. The early stages of processing are “shallow” and involve coding the stimulus in terms of its physical characteristics (e.g. the visual characteristics of the letters and typeface in which a word is printed, or the acoustic features of a sound). “Deep” processing involves coding the stimulus more abstractly in terms of its meaning.

2. Rehearsing material by simple rote repetition is classified as shallow processing. Rehearsing material by exploring its meaning and linking it to semantically associated words is classified as deep processing.

3. Retention of an item is dependent on the depth or level of processing carried out on to-be remembered material. Superficial processing leads only to shallow, short-term retention; deep processing leads to efficient, durable retention.

With etymological elaboration, the processing of a figurative idiom can take place at several levels. For example, learners will first have a shallow processing of the idiom by accessing its figurative meaning roughly from context; then, they will be given etymological information of the idiom through an activation of its literal use or origins. Meanwhile, they are likely to come up with a mental image of the figurative idiom and store it with other verbal clues. Thus, a figurative idiom is likely to be remembered more deeply through this multi-level processing.

**Etymological Elaboration As A Pedagogical Approach for Learning Figurative Idioms**

Etymology is briefly defined as the scientific study of the origins and history of the changing meanings and forms of words (Ross, 1969). Application of etymology to L2 vocabulary learning has long been embraced by ESL specialists. Pierson (1989) proposed
a pedagogy with etymology instruction at the Chinese University of Hong Kong. In particular, he tried to encourage meaningful vocabulary learning in ESL by incorporating knowledge of words’ origins. Two examples are noteworthy in his work. The first example is concerned with active learning of new words in reading materials. Typically, Pierson’s students at the Chinese University of Hong Kong were dictionary-dependent and prone to consult dictionaries instinctively whenever they encountered new words in reading. Therefore, Pierson proposed to them a learning strategy that whenever possible, try to use an advanced learner dictionary and find out the origins of the words, not just to simply get their meanings. In one reading he presented as an example, his students had to find out the origins of three new words: fascinate, precludes, and cranial. Their consulting results revealed that fascinate and precludes are from a Latin origin and cranial has a Greek antecedent. Then, students were required to go back to the reading and analyze the contexts of those three words with reference to their origins. In such a way, Pierson’s students were able to acquire vocabulary through a deeper level of comprehension during their process of examining word origins. In his second example, Pierson tried to help his science students establish connections between abstract technical vocabulary in English and material origins. Specifically, when examined etymologically, the word calculus can be traced back to its Latin antecedent calx/calcis, which means pebble and was used as a unit of measurement. Such an etymological insight helped Pierson’s student understand the relationship between pebble and calculus and make more inferences when learning related words as calculate, calculation, and incalculable.

Although Pierson’s (1989) examples came with no empirical data in support of the
effectiveness of etymology on vocabulary acquisition, his pedagogical proposal has been accepted and further developed in experiments by other researchers. Boers et al (2001, 2004) conducted a series of large scale empirical studies on the application of etymological elaboration to L2 idioms comprehension and retention. The rationale for these studies is mainly based on the research on conceptual metaphor and the concept of mapping abstract figurative meaning to concrete source domains. As many cognitive linguists have discovered, there is a class of figurative idioms that can be derived from rather specific experiential domains that are associated with historical and cultural origins. Therefore, helping learners understand the metaphoric nature of such idioms can be achieved by reactivating the literal sense of the expression or by tracing back to idioms’ original use in contexts. Such a pedagogical approach is called by Boers (2004) etymological elaboration, which serves as a more specific application of a combination of conceptual metaphor and semantic elaboration strategies.

Etymological elaboration as a pedagogical approach in L2 idiom instruction has been of particular interest in SLA research, and its effectiveness has been examined by Boers, et al. (2000, 2004) with several large-scale studies. One study involved two groups, of which one experimental group was told the literal, original usage of the target idioms while a control group from the same population served as a comparison one who was not given access to the etymological information of the same material. The experimental group was informed, for example, that the idiomatic usage of on the ropes is derived from its literal usage in the context of boxing matches. A post-test and a delayed post-test were administered to measure the effects of the treatment. Scores revealed that
the subjects who had been familiar with the etymological information acquired significantly more idioms than the subjects in control group. From 1998 to 2004, Boers, et al. have conducted a series of experiments on the effects of etymological elaboration on idiom acquisition and their results generally support the assumption that helping learners gain access to literal and original usage of target idioms can effectively contribute to their comprehension and retention of idioms. One thing noteworthy about Boers’ experiments is that they applied CALL (computer-assisted language learning) tools to their most recent studies on etymological elaboration and opened a new dimension for further research that will focus on the effect of etymological elaboration in different internet media.

**Web-based Learning**

This section first reviews the rationale and theoretical framework of web-based learning from previous studies, and then focuses on a discussion of assessment in one of the frequently used web-based learning tools, WebCT. Finally, it mentions the differences between the current study and the previous studies.

**Web-based Learning And WebCT (Web Course Tools)**

The rapid advancement of computer technology has expanded the scope and variety of CALL applications. One of the most recent evolutions is internet-based CALL, which integrates a number of functions that had been separate from each other into one coherent learning environment. WebCT (Web Course Tools) is an online course management application that allows for the integration of course organization,
communication, content, and assessment (Siekmann, 1998). It was developed at the University of British Columbia and first released with a beta version in 1996. Since then, it has been updated and used by educational institutions in many countries and served millions of students. Without installing any software, all a teacher needs to use WebCT is a web browser (i.e., Internet Explorer) that can access the WebCT server. Moreover, to setup and design an online course in WebCT, a teacher and designer does not need to have any advanced computer knowledge on programming but only basic computer literacy like net surfing, sending emails, and file uploading, which has made WebCT very convenient and easy to use for most teachers.

WebCT offers a whole suite of tools that can be customized to the needs of the instructor. It is designed in a way that promotes the feeling of a coherent integrated learning environment. Siekmann (1998) grouped the main tools in WebCT in four categories that are essential to teaching in general and teaching a foreign language in particular. The following table briefly shows specific tools in categories.

Table 2.2 Categories of tools in WebCT

<table>
<thead>
<tr>
<th>Contents</th>
<th>Communication</th>
<th>Testing/Exercises</th>
<th>Course management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Path: a sequence of hierarchically ordered pages of content that are linked to additional tools</td>
<td>Bulletin Board: forums for asynchronous, public, threaded discussion</td>
<td>Quizzes: graded exercises and tests, as well as anonymous surveys</td>
<td>Calendar: identify the chronological order of the course, eg. due dates, HW, etc.</td>
</tr>
<tr>
<td>Links: outside links can be used to integrate current information</td>
<td>E-mail: asynchronous private communication</td>
<td>Test: ungraded review questions with immediate feedback</td>
<td>Student management: keeps students’ record for the instructor</td>
</tr>
</tbody>
</table>
Rationale for Learning Via WebCT

WebCT has many strengths for learning a language online. With integrated tools and applications, it helps language teachers create a favorable learning environment online. According to the literature (Basanta, 2004; Roever, 2001; Siekmann, 1998; Lu, Yu, and Liu, 2003), WebCT can be adapted to language learning for the following reasons. First, it provides students with more opportunities of communication in a target language through three channels: email, bulletin boards, and chat rooms. One common problem in ESL/EFL classrooms is that students do not have enough face-to-face communication opportunities in class. Using communication tools in WebCT to carry out specifically designed tasks for practice of language skills can be a useful complement to class instruction. Second, the abundant availability of tools in WebCT helps learners to learn autonomously. Students can control their own learning activities anywhere and anytime, regardless of geographical limitations. In this regard, WebCT as a powerful tool for distance education has been adopted by many educational institutions. Third, though it is true that WebCT can never replace language teachers in classrooms, it can be designed to provide effective feedback and comments on students’ overall performance and assess their achievements efficiently. In autonomous learning, students can check their learning
outcomes by quizzes and tests in WebCT and make constant improvement. They can also check their learning progress via tracking information in WebCT. These distinctive features have made WebCT a preferable tool for internet-based language instruction as well as a research focus in ESL education.

Basanta’s (2004) research on web-based instruction focuses on aspects of pedagogical design of an online course for the development of lexical competence, Project ADELEX. The purpose of the study was to develop an online course to help improve vocabulary levels of students. To fulfill this purpose, the course underwent a careful design process of goals analysis, variables analysis, content design, and implementation. Learner autonomy, effective feedback, and course evaluation are major objectives and considerations in the process of design. The course was implemented in WebCT as a distance learning module with some on-campus sessions. Although quantitative and qualitative data had not been collected to further examine the effect of the online course at the time the paper was published, the pedagogical goals of the course were all met with the aid of tools in WebCT and the project was highly acclaimed and supported by European researchers.

Another noteworthy study on learning outcomes in a WebCT environment was conducted by Lu, Yu, and Liu (2003). In particular, they examined factors that may affect learning outcomes in an online environment like WebCT. Variables like learning styles, learning patterns, and demographic factors, were analyzed in their study. Results showed that except for the factor of ethnic groups, none of the above-mentioned variables contributed to a significant impact on students’ performance, which suggested WebCT is a
favorable learning environment in which students of different learning styles, patterns and demographic background can perform equally well.

Advantages and disadvantages of web-based learning were also examined to some extent in previous research. Campbell (2004) conducted a study on the feasibility of delivering an online translation course via VLE (Virtual Learning Environment) and at the same time investigated the strengths and drawbacks of virtual learning. Specifically, the classroom-based course was moved to WebCT with corresponding modification in order to accommodate certain challenges in online delivery. Results showed that the application of a color-comments system designed to promote reflection on the translation process is flexible enough to be used in another medium and maintain most of advantageous features in face-to-face delivery. Meanwhile, the strengths and drawbacks of WebCT as a course delivery medium were examined and analyzed. Advantages of online delivery includes, high quality of feedback to the students, reflection on the translation process promoted, record of work done available to current students, the cumulative value of support materials, valuable resources for future students, etc., while disadvantages include technical problems for students, slow interaction in online sessions, inflexible compared to classroom delivery, impersonal, and time-consuming correction.

In short, WebCT offers a number of tools to create a favorable online language learning environment. Major strengths of using the WebCT in language learning can be summarized as: provision of multiple channels for communication between learners, assistance of learner autonomy, easy self-assessment, and provision of feedback.
Theoretical Framework and Course Design in WBI (Web-based Instruction)

Research on web-based learning suggests that to achieve effective learning outcomes online, online courses need to be carefully designed under the guidance of both pedagogical goals and theoretical frameworks. Jung (2001) examined a number of studies on web-based instruction and argued that there is little linkage in examined studies to established pedagogical theory in general or to distance education theory in particular (Jung, 2001). She therefore proposed a theoretical framework of web-based instruction in the context of distance education. The framework was based on a modification of previously existing transactional distance theory, which describes pedagogical relationships in a distance education environment. The theory outlines three key constituent elements that define distance education: dialogue, structure, and learner autonomy. The interplay of these three elements is the focus of designing a distance education course. However, the theory first appeared as early as in 1972 and needs to be updated with changes of delivery technologies. Based on a literature review of journal articles on web-based instruction, Jung (2001) generalized distinctive pedagogical features of web-based instruction, including a student-centered learning environment, full of multimedia resources, expanded interactivity, and adaptability to different student characteristics. She then incorporated these features into a transactional distance theory and proposed a theoretical framework for pedagogical features of web-based instruction.
Figure 2.1  Jung’s (2001) theoretical framework of web-based instruction

Jung’s (2001) theoretical framework offers useful guidance for web-based course design by stressing the importance of grounding online courses on relevant theories and specific pedagogical goals in the process of design. Practically, the design of the learning units in the current study was based on the two variables in the framework to meet its research goals. Specifically, learner autonomy is one focus of the learning unit since all the participants were in China and they needed to finish all online learning activities on their own. Clear instructions and online learning tools, such as online dictionaries were paid much attention in learning unit design to help the participants successfully fulfill their tasks. Content adaptability was another variable applied to the current study. With the same target idioms, two different learning units were designed for experimental and control groups respectively to meet the research goal of investigating the effect of different instructional approaches in an online learning environment.
Assessment in WebCT

One of the most essential components in WebCT is the assessment module, in which there are various tools to evaluate students’ learning outcomes. For example, different types of quizzes (ie. multiple-choices, cloze, sentence completion, etc.) can measure both students’ productive and receptive knowledge. The survey questionnaire helps collect information on students’ learning experience in online courses. Moreover, feedback and comments can be added to each assessment item by course designers to help students examine their achievements autonomously.

Although assessment tools in WebCT can realize most specifications in pencil-and-paper tests and computer-based tests (CBT), they don’t require much more resources to develop. In fact, web-based tests (WBT) are believed to be the best low-tech assessments that are most appropriate in low-stake testing situations (Roever, 2001), which renders them a favorite of language teachers for easy classrooms assessment. In addition, low-tech WBTs offer advantages over traditional CBTs with regard to their practicality, logistics, design, cost, and convenience (Roever, 2001). On the other hand, however, assessment tools chosen for WBTs do need to be suitable for the tests purpose to ensure test validity and reliability. Chapelle and Douglas (2006) point out that the ideal tools required for test development depend on the purpose of the assessment and practical issues. To administer valid online assessments to students, a designer and teacher should have a clear idea about the purpose of his/her assessments when constructing specific tests. A good example can be cited from Basanta’s (2001) study on designing of an online lexical development course. She developed an assessment package that serves her
purpose of measuring students’ lexical gains. The package includes three sets of tests: 1) vocabulary level tests to detect lexical size; 2) tests of depth of knowledge to analyze different traits of lexical knowledge; and 3) developmental tests to identify different stages in word knowledge.

Although most web-based tests are low-stakes, some factors that affect test validity and reliability cannot be ignored. Roever (2001) points out that computer familiarity, typing speed, delivery failures and speededness, and loading time deserve great attention during the design process. Meanwhile, web-based test developers should also take heed of limitations of online assessment, such as cheating and item exposure, data storage, server failure, and browser incompatibility.

Considering aforementioned advantages of web-based assessment, the assessment tool in WebCT was used as a major means to check participants’ learning outcomes in the current study. This is mainly because the study was conducted using only WebCT in a form of distance learning and participants had to do all learning tasks autonomously. The assessment part in the WebCT contains many useful functions ranging from automatic scoring to provision of useful feedback and analysis of test results, thus becoming a powerful tool that participants could rely on to self-check their achievements in the study.

The Current Study

Based on the literature review of the effect of etymological elaboration on L2 idiom acquisition and the potential of web-based instruction, this study aims to associate two applications with each other and examine the learning outcome of such a
combination. Specifically, the effect of etymological elaboration as a mnemonic approach on L2 idiom acquisition and retention in WebCT is the focus of investigation. Although built on the same theoretical background of previous studies by Boers et al. (2004) and Guo (2008), the current study differs in its design and research goals. It is designed as an online distant course and conducted completely in WebCT. Components of the study in the WebCT include pretests, learning units, two post tests, and questionnaires. One particular aspect of the study is its intention to measure both productive and receptive knowledge of target idioms in terms of acquisition and retention. Therefore, each test in the study contains two quizzes that measure productive and receptive knowledge respectively, which is absent in the assessment of previous studies.

The study intends to address three research questions.

Research question #1: Does online learning in WebCT facilitate L2 learners’ idiom acquisition?

Research question #2: Does the use of the etymological elaboration approach in online idiom instruction effectively facilitate L2 idiom acquisition and retention?

Research question #3: What are the strengths and weaknesses of learning idioms in an online environment like WebCT according to L2 learners’ learning experience?
CHAPTER 3. METHODOLOGY

This chapter includes information about participants, material selection, study design, data collection and analysis. The goal of the project described below is to create an online learning unit that can be used by participants for autonomous learning and self-assessment. Two instructional approaches, etymological elaboration and traditional rote learning, are incorporated into learning units for experimental and control groups respectively. Qualitative and quantitative data are collected during participants’ learning process and analyzed to answer the research questions.

Participants

The participants for the study are 70 Chinese sophomores at Anhui University, Hefei, China, among which are 42 males and 28 females (see Appendix for profile). They all had passed a nation-wide English proficiency test, the College English Test Band 4 (CET-4), at the end of their first semester as sophomores and therefore were placed at the same level of English proficiency. CET-4 is a high-stakes English proficiency test required for all college students in China and believed by Chinese ESL researchers (Cai, 2005; Fu, 2005; Yang, 2009; Zhu & Zhu, 2007) as a fairly valid and reliable test for assessment of English proficiency at college level. The reasons for selecting students in the same country where English is a foreign language are, first, to make sure those students have little prior knowledge of target idioms in the study since most selected idioms are of relatively high frequency in a corpus of contemporary American English, and a non-native speaker who lives in an English-speaking country may already knew the
figurative meaning of most chosen idioms. Second, since one focus of the study is to use the etymological elaboration approach to help participants trace back to origins of each idiom to enhance comprehension and many idioms have origins that are English culture-related, participants from a homogeneous non-native background may reduce possible cultural and racial bias in data collection. The 70 participants were volunteers recruited from classes of the same proficiency level at Anhui University, and they were from 30 different majors. The participants were then divided into experimental and control groups randomly, with approximately 35 people in each group. Each participant was assigned a netID and a password to login to the WebCT system housed at Iowa State University. However, since their participation was totally on a voluntary basis, WebCT tracking records showed that some of the participants did not carry out the online tasks at all and some others only finished part of the tasks and could not provide complete data for analysis. Data from those participants were therefore invalid and excluded from analysis. The data collection process ended up with 55 valid sets of data, with 29 in the experimental group and 26 in the control group. Those data were used in analysis to draw conclusions to the research questions.

**Materials and Design**

Because online learning is one focus of this study, all learning materials, assessments, and questionnaires were delivered online in WebCT. Specifically, learning materials were designed in WebCT as online learning units including fifteen least known idioms to participants that were chosen from the pretest based on participants’ test
performances. The online learning units were designed in two versions that were used for experimental and control groups respectively. For the experimental group, the learning unit included a short paragraph of etymological information on the origin of each idiom, followed with an example sentence taken from dictionaries or corpus to provide a context in which the idiom is used.

**Table 3.1** An example of etymological elaboration with origin

<table>
<thead>
<tr>
<th><strong>On the back burner</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Origin:</strong> A stove top usually have four burners, two in front and two in back. The food you are currently working on is usually on a front burner, so you can reach it easily. The food that does not demand immediate attention is put on a back burner and receives low priority.</td>
</tr>
<tr>
<td><strong>Example:</strong> With other important homework due next Monday, I had to put my statistics project on the back burner for a while.</td>
</tr>
</tbody>
</table>

By comparison, the learning unit for control group didn’t have an etymological elaboration part, but only a brief explanation for each idiom, telling participants directly the figurative meaning of the idiom. However, more example sentences were provided to participants to figure out the context in which the idiom is properly used, which was more of a traditional idiom learning pattern.

**Table 3.2** An example of rote learning with direct definition

<table>
<thead>
<tr>
<th><strong>On the back burner</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition:</strong> Having low priority, not be paid attention to</td>
</tr>
</tbody>
</table>
| **Example:** a) With other important homework due next Monday, I had to put...
my statistics project on the back burner for a while.

b) I want a lot out of life, and I don't intend to put my goals on the back burner. I just need to figure out how to say no to things I don't want to do and stick with it after I say it.

Assessments contained three tests that were required to be done at three periods. The pretest (see Appendix) was an idiom size test and given to participants at the time they first logged in to WebCT to check their prior knowledge of idioms to be used in the study. The pretest contained thirty idioms that were chosen from *The Oxford Dictionary of Idioms* (Siefring, 2004) with rich etymological origins. Immediately after the pretest, participants’ answers on each idiom were tallied, and idioms with the lowest correct answer percentage were selected and put into learning unit. The second test participants needed to complete was post-test (see Appendix), which was given to them immediately after they finished browsing learning unit. The post-test included all fifteen target idioms in learning unit and was presented in two types of quizzes. The cloze quiz required participants to complete a sentence by putting a suitable idiom into a blank in the sentence, according to the context, and an explanation of the idiom in the parentheses. This quiz aimed to measure participants’ productive knowledge of target idioms since they needed to write the idioms out based on context clues and explanation hints. The second type of quiz was a multiple-choice, which asked participants to select a most suitable explanation of the idiom in a sentence from four choices below. This test was meant to measure a receptive knowledge of target idioms. A delayed post-test (see Appendix) was administrated to participants seven days after they were done with the
When designing learning units in WebCT, the researcher took reference of six tips/guidelines proposed by Chapelle and Jamieson (2008) on how to design a CALL material on learning of vocabulary. Specifically, the six tips are:

1. Select CALL materials that teach appropriate vocabulary
2. Choose CALL materials that explicitly teach English vocabulary
3. Provide learners with opportunities for interaction with the computer
4. Let the vocabulary tasks spark interaction among learners.
5. Include regular evaluations of answers and summaries of performance.
6. Help learners develop strategies for explicit online vocabulary learning through the use of online dictionaries and concordances. (p.12)

The study tried to cover most of the guidelines in its design process. Specifically, the researcher paid much attention to idiom selection, difficulty of the text in the learning unit, provision of effective feedback, and use of online dictionary as an assistant. However, interactive vocabulary tasks were not incorporated by the researcher into online learning tasks because the major purpose of the study is to investigate the effect of etymological elaboration on L2 idiom acquisition and retention and introducing tasks that stimulate learner interaction may add variables to the actual effect of idiom acquisition and affect the study's data analysis. For the same reason, the study also eliminated all visual and audio means of elaboration in WebCT and only focused on the use of text.

Selection of idioms was one of the key processes of the study. A review of previous studies reveals that researchers used different criteria in their selection. For the source of idioms, most researchers selected idioms from major idiom dictionaries such as, *The Oxford Dictionary of Idioms* (Siefring, 2005), *Collins Cobuild Dictionary of Idioms* (2002), *A Dictionary of American Idioms* (Makki, 2003), and *Dictionary of Idioms and Their Origins* (Flavell, 2000). Some other researchers used textbooks as their sources. Criteria used to select idioms also varied from study to study. Some researchers selected idioms they believed to be unfamiliar to subjects based on their intuition and ESL teaching experience (Guo, 2008). Some others chose idioms from dictionaries first and used a word frequency band to determine the appropriateness of target idioms (Boers et al.2004), which seems more scientific. Based on prior criteria, this study used the
following criteria in its idiom selection. First, the *Oxford Dictionary of Idioms* (Siefring, 2004) was chosen as a major idiom source because it had been used by a number of researchers in their studies (Boers, et al. 2007, Guo, 2008). Second, all idioms in the dictionary were reviewed by the researcher and only those with rich historical and cultural origins were selected for further screening. Third, selected idioms were subjected to a frequency check in Corpus of Contemporary American English (Davies, 1990-2008) and the top 30 highly frequent idioms were kept for study use (see Appendix F. for an idiom frequency list). The rationale to check idiom frequency in corpus came from Liu’s (2007) research on the most frequently used American English idioms. According to him, “Most teaching and reference materials on English idioms are primarily intuition based. As such, they often include seldom-used idioms and incorrect descriptions of the meaning and use of some idioms, hence limiting their usefulness to ESOL students (p671).” Based on aforementioned criteria, idioms selected for the study were highly frequent idiomatic expressions in American English with rich etymological information and therefore fit the purpose of the study.

The difficulty of text in the etymological elaboration and the direct definition of idioms was greatly considered to make sure it was appropriate for the reading proficiency of most participants and wouldn’t be a variable that affected their comprehension of idioms other than different instruction approaches. Therefore, the etymological elaboration paragraphs for the experimental group and direct explanation of idioms for control group were chosen from sources with relatively lower difficulty and some texts were rephrased by the researcher. In addition, all texts in the learning materials were
examined for appropriateness of difficulty in a pilot study before the main study.

Provision of effective feedback was realized through functions in assessment by WebCT. Participants were able to check scores, correct answers, and statistics of their tests after their submissions.

Links to online dictionaries were also added in the learning units to help participants with learning. Two online dictionaries were used: one is DICT.com, an English-Chinese online dictionary, and Merriam Webster Online.com, an English-English online dictionary. Participants were advised to choose either of them for assistance when encountering unfamiliar lexical items.

Setting

The study was carried out in campus computer labs at Anhui University, Hefei, China. Participants were given a detailed schedule when study began and required to follow the schedule to complete all learning activities online. Their English teachers, who were the researcher’s former colleagues, served as supervisors and helped remind them to finish all online activities on time.

Pilot study

Before the main study and bulk data collection, a pilot study was administered to check the appropriateness of target idioms, clarity of instructions and questions, time restraint, appropriateness of text difficulty and assessment difficulty. Participants of the pilot study were five students of the same English proficiency level with students who
attended the main study. A major problem found in the pilot study was that the internet speed was slow when participants logged in to WebCT at ISU from computer labs in China. And they had to wait for quite a while for all test items to be downloaded and displayed on screens. Considering the fact that it is hard to make changes to internet speed and hardware equipment at Anhui University, the researcher decided to increase test time to make sure most students could finish the timed assessment, based on an average time participants spent on tests in the pilot study.

**Procedures**

Before the study, the researcher sent out informed consent forms to his former colleagues at Anhui University to ask for help with recruitment of participants. His colleagues printed out information sheets of the study, time schedules, and consent forms and distributed them in class. Students who were interested in participating in the study signed up for it. They were then each assigned a NetID with a password to log-in to the WebCT system. They were randomly assigned to two groups. In total, all participants were required to log into WebCT three times to conduct all learning activities. Specifically, the first time they logged-in to WebCT was to do a pre-test to check their prior knowledge about target idioms. Their test results were analyzed quickly by the researcher and the least known idioms in the pre-test were selected for the learning units. Approximately two days after the pre-test, participants logged-in to WebCT a second time and browsed learning units with different instructional approaches. Immediately after that, they were required to take a post-test to check their comprehension of idioms in
learning units. Approximately seven days later, participants were required to log-in to WebCT a third time to do a delayed post-test and a questionnaire. After that, they were done with all the learning tasks in the study.

**Data collection**

There were three sets of quantitative data and one set of qualitative data collected in the study. Specifically, participants’ pretest scores were collected to determine a selection of least known idioms for ensuing learning activities. Post-test scores were used to determine the degree in the online learning environment. Delayed post-test scores were compared with post-test scores and their difference was subjected to a statistical t-test and conclusions were drawn on the significance in the difference between etymological elaboration and traditional instruction. Participants’ responses to the questionnaires were used as qualitative data and tallied into different categories of feedback.

**Process of data analysis**

Both qualitative and quantitative data were collected and analyzed to draw conclusions to three research questions in the study. In particular, participants’ pretest, post-test, and delayed post-test scores were calculated and analyzed to answer the first two research questions. Results from the post-test questionnaire were analyzed to answer the third research question. A paired t-test was conducted to look for significant differences between learning outcomes of the experimental and control groups.

Research question#1
The first research question addressed participants’ learning of L2 idioms in an online environment and was answered through a t-test analysis of the significance between participants’ pretest means and post-test means for both types of instructional approaches (etymological elaboration and traditional definition). Specifically, paired t-test analysis was carried out on both groups individually to see if both groups had made significant improvements on their post-tests. A positive conclusion would be drawn if t-test analysis showed that both groups had made significant improvements on fifteen target idioms in post-tests no matter what kind of instructional approach they received.

Research question#2

The second research question addressed the differential effects of two instructional approaches in an online environment with respect to acquisition and retention. To answer the question, score gains between participants’ pretests and two post-tests were first calculated respectively for both the experimental and control groups. Then, a paired t-test analysis was performed to look for the significance of difference between score gains of the two groups. A conclusion was drawn based on an achieved p-value in the analysis in order to either accept or reject the null hypothesis that there is no significance between the performances of the two groups with different instruction approaches.

Research question#3

The third research question addressed participants’ learning experience of online idiom learning in both groups. The answer to this question was drawn from their responses to post-test questionnaires, and qualitative data were analyzed to make a conclusion.
CHAPTER 4. RESULTS AND DISCUSSION

This chapter gives a statistical analysis of data collected in the study. The SPSS (Statistics Program for Social Science) was used to process quantitative data to draw conclusions for the first and second research questions. Participants’ responses to questionnaires were used as qualitative data to infer answers to the third research question.

Research question #1

Research question #1 addresses participants’ achievements in L2 idiom learning in an online environment. To answer this question, participants’ average pretest and average posttest scores on fifteen target idioms were compared to look for a difference in scores. Since both the pretest and posttest consist of two quizzes that measure both productive and receptive knowledge of target idioms, an average score of the two quizzes was used in comparison. Table 4.1 shows descriptive statistics for pretest and posttest scores of two groups.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>2.72</td>
<td>29</td>
<td>1.62</td>
<td>.30</td>
</tr>
<tr>
<td>Control</td>
<td>2.58</td>
<td>26</td>
<td>1.75</td>
<td>.34</td>
</tr>
<tr>
<td>Posttest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>11.88</td>
<td>29</td>
<td>1.78</td>
<td>.32</td>
</tr>
<tr>
<td>Control</td>
<td>11.02</td>
<td>26</td>
<td>1.67</td>
<td>.32</td>
</tr>
</tbody>
</table>

Results in Table 4.1 show that both experimental and control groups have very close means in their pre- and posttests, with the experimental group scores being slightly higher. As for the difference between the pretests and posttests of the two groups, the
experimental group has an average mean of 2.72 in pretest and 11.88 in posttest and control group has an average mean of 2.58 in pretest and 11.02 in posttest. Both groups have higher average means in their posttests than in pretests. A paired t-test in SPSS was conducted to see if the mean difference is statistically significant. Table 4.2 shows the t-test results between the pretests and posttests of two groups respectively.

Table 4.2 Paired t-test of pre-and posttests of two groups

<table>
<thead>
<tr>
<th>Pretest - Posttest</th>
<th>Paired Differences</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Std. Error Mean</td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>-9.16</td>
<td>2.39</td>
<td>.44</td>
<td>-20.62</td>
</tr>
<tr>
<td>Control</td>
<td>-8.44</td>
<td>1.80</td>
<td>.35</td>
<td>-23.96</td>
</tr>
</tbody>
</table>

Note: p<0.05* at 95% confidence interval

As shown from Table 4.2, the mean difference between pre- and posttests for both groups is very significant. At a level of p<0.05, both experimental and control groups show a p-value of 0.00, rejecting the original hypothesis that there is no significant difference between means of pre- and posttests for both groups. Therefore, for both groups, it can be concluded that the posttest mean is significantly higher than pretest mean. Such a result was achieved after participants finished online learning activities. Moreover, for the control group, although they were instructed in a traditional way of idiom learning, they made significant improvements in posttests, which indicates their online learning was effective. Therefore, the answer to research question #1 is that online learning is an effective way to facilitate L2 idiom acquisition.
Research question #2

Research question #2 addresses the effect of etymological elaboration on L2 idiom retention in an online environment. To answer this question, the mean difference between pretest and delayed post-test of the two groups was calculated and compared to judge which instructional approach in the online environment is better. Since all tests have two quizzes for the measurement of productive and receptive knowledge of target idioms, the calculation was conducted respectively. Table 4.3 shows a descriptive statistics of mean difference among pretests, posttests, and delayed posttests for the two groups.

**Table 4.3** Descriptive statistics of mean difference among pretests, posttests, and delayed posttests of the two groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Posttest to Pretest Score Gains (Acquisition)</th>
<th>Delayed posttest to Pretest Score Gains (Retention)</th>
<th>Posttest to Delayed posttest (score gains)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cloze</td>
<td>Multiple-choice</td>
<td>Cloze</td>
</tr>
<tr>
<td>Exp.</td>
<td>Mean</td>
<td>10.38</td>
<td>10.59</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>2.87</td>
<td>2.44</td>
</tr>
<tr>
<td></td>
<td>Std. Error Mean</td>
<td>.53</td>
<td>.45</td>
</tr>
<tr>
<td>Con.</td>
<td>Mean</td>
<td>9.46</td>
<td>9.88</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>2.06</td>
<td>2.01</td>
</tr>
<tr>
<td></td>
<td>Std. Error Mean</td>
<td>.40</td>
<td>.39</td>
</tr>
</tbody>
</table>

**Note:** Cloze measures productive knowledge of target idiom
Multiple-choice measures receptive knowledge of target idiom

As shown from Table 4.3, in terms of the acquisition of target idioms (from posttest to pretest), the mean difference in productive knowledge (measured by the Cloze) of the experimental group and control group is 10.38 and 9.46 respectively. And in receptive knowledge (measured by the Multiple-choice), the mean difference of the experimental group is 10.59 and 9.88 for the control group. Overall, the experimental group achieved slightly a higher mean score than the control group. However, as shown
from Table 4.4, an independent samples t-test revealed that the mean difference between
the two groups in both productive and receptive quizzes was not statistically significant to
allow the researcher to conclude that the experimental group performed better than the
control group. Specifically, in productive acquisition, the p-value from the comparison of
the two groups is 0.18, which is greater than 0.05 to claim a statistical significance. In
receptive acquisition, the achieved p-value is 0.248 and is still too large to claim a
statistical significance. Such a result indicates that the etymological elaboration approach
didn’t produce a superior effect on participants’ idiom acquisition compared to the
traditional learning approach in WebCT although participants in the experimental group
scored slightly higher than those in the control group.

Table 4.4  Independent samples t-test of idiom acquisition of the two groups

<table>
<thead>
<tr>
<th>L2 Idiom Acquisition</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
</tr>
<tr>
<td>Productive. (Cloze)</td>
<td>1.37</td>
</tr>
<tr>
<td>Receptive. (Multiple-choices)</td>
<td>1.17</td>
</tr>
</tbody>
</table>

Note: *p<0.05, at 95% Confidence Interval of the Difference

Moving to an examination of the effect of etymological elaboration on idiom
retention, the descriptive statistics in Table 4.3 show that, from delayed posttest to pretest,
the experimental group has a mean difference of 8.17 in the productive test and 9.79 in
the receptive test, while the control group has a mean difference of 6.12 in the productive
test and 8.5000 in the receptive test. In general, the experimental group still scored higher
than the control group. After statistical analysis, the results in Table 4.5 reveal that, a
statistical significance of mean difference was found in productive test of the two groups.
The achieved p-value is 0.01 and is much less than p=0.05, which indicates that the experimental group performed better than the control group in WebCT in terms of productive knowledge of idiom retention. However, for the receptive test of idiom retention, no statistical significance was found between mean difference of the two groups because the achieved p-value is 0.06 and that is greater than p=0.05, which indicates that in terms of receptive knowledge in idiom retention, the two groups performed at the same level in WebCT.

<table>
<thead>
<tr>
<th>L2 Idiom Retention</th>
<th>t-test for Equality of Means</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
<td>df</td>
<td>Sig. (2-tailed)</td>
<td>Mean Difference</td>
<td>Std. Error Difference</td>
</tr>
<tr>
<td>Productive. (Cloze)</td>
<td>2.70</td>
<td>46.73</td>
<td>.01*</td>
<td>2.06</td>
<td>.76</td>
</tr>
<tr>
<td>Receptive. (Multiple-choices)</td>
<td>1.89</td>
<td>53</td>
<td>.06*</td>
<td>1.29</td>
<td>.68</td>
</tr>
</tbody>
</table>

Note: *p<0.05, at 95% Confidence Interval of the Difference

Therefore, the answer to the research question #2 can be concluded as follows. First, etymological elaboration didn’t produce a superior effect compared to the traditional learning approach in idiom acquisition in the online environment. Participants in the two groups have made the same achievement in both productive and receptive knowledge tests after receiving the treatment of the two instructional approaches. Second, the etymological approach did produce a better effect than the traditional approach on productive knowledge of idiom retention in an online environment. Participants in the experimental group have higher mean difference in scores than the control group and the difference is statistically significant. However, as for the receptive knowledge of idiom retention, etymological elaboration couldn’t help the experimental group make
significantly better achievements than the control group in WebCT.

**Research question #3**

Research question #3 addresses the participants’ feedback on learning idioms in an online environment, specifically, the strengths and drawbacks of online idiom learning from their personal experience. To answer this question, participants’ responses to questionnaires were examined in detail.

It is necessary to summarize participants’ questionnaire responses first to have a general idea of their views on learning English idioms and web-based language learning. Overall, in terms of L2 idiom learning, 63.9% of the participants in the two groups admitted that they have difficulty in most cases when encountering English idioms in their daily lives and 15.7% of the participants said they always have, which indicates that L2 idioms acquisition should always remain as a research focus in SLA. As for their interest in learning L2 idioms, 7.4% of the participants showed that they are extremely interested in idiom learning, 23.5% of the participants are very interested, and another 49.4% of the participants are interested. In terms of using etymology approach in L2 idiom learning, 9.8% of the participants admitted that they are extremely interested in learning the origins of new idioms that they don’t know, 23.2% of the participants are very interested in knowing an idiom’s etymology, and 46.3% of the participants are interested. Overall, nearly 80% of the participants are interested in knowing the etymology of an idiom, indicating etymological elaboration is a good approach to arouse learners’ interest and awareness of target idioms. Table 4.6 shows participants’ personal
estimate of how much they can remember and are able to use target idioms after finishing online learning.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much can you remember these idioms after browsing learning unit in WebCT?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;10%</td>
<td>3.0%</td>
<td>13.2%</td>
</tr>
<tr>
<td>&lt;30%</td>
<td>21.2%</td>
<td>28.9%</td>
</tr>
<tr>
<td>=50%</td>
<td>33.3%</td>
<td>28.9%</td>
</tr>
<tr>
<td>&gt;80%</td>
<td>42.4%</td>
<td>28.9%</td>
</tr>
<tr>
<td>&gt;95%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>How much are you able to use these idioms after learning them in WebCT?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;10%</td>
<td>2.9%</td>
<td>10.5%</td>
</tr>
<tr>
<td>&lt;30%</td>
<td>20.0%</td>
<td>23.7%</td>
</tr>
<tr>
<td>=50%</td>
<td>22.9%</td>
<td>28.9%</td>
</tr>
<tr>
<td>&gt;80%</td>
<td>48.6%</td>
<td>36.8%</td>
</tr>
<tr>
<td>&gt;95%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Table 4.6 shows that participants in the experimental group overall have a higher percent in remembering more target idioms than the control group. Specifically, 42.4% of the participants in the experimental group believed that they can remember over 80% of target idioms and 48.6% of the same group claimed that they were able to use over 80% of those idioms, while the corresponding statistics for the control group are only 28.9% and 36.8%. These statistics show that, in general, participants in the experimental group had more positive experiences than those in the control group with etymological elaboration in an online environment for memorization and acquisition of target idioms. However, since the statistics were totally based on participants’ personal estimate and belief, they need to be treated with caution and further investigation may be necessary on how participants’ estimates correspond to their actual performance in tests.

In terms of online learning experience, 54.8% of the participants in the two groups
admitted that they had experience of learning English online. However, few of them, only 7.9% of the participants said that they had similar experienced learning with an online system like WebCT. When asked if it is easy to navigate and conduct learning activities in WebCT, 33.3% of the participants agreed that it is very easy to get familiar with the system, and 58.7% of the participants said it only took them little time to get familiar with the system. Overall, 92% of the participants agreed that, given a little time, the online course management system is easy to use for language learning. Participants’ preferences for online learning of idioms or paper-and-pencil learning of idioms were also investigated in the questionnaire. The results reveal that 60.3% of the participants in the two groups preferred traditional paper-and-pencil language learning, and the rest 39.7% of the participants preferred online language learning. Based on the responses of participants’ survey questionnaires, Table 4.7 has summarized general reasons for the two preferences.

Table 4.7  Reasons for the two preferences of language learning environment

<table>
<thead>
<tr>
<th>Online language learning</th>
<th>Traditional classroom learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) provision of opportunities to conduct one’s own learning activities autonomously,</td>
<td>1) paper-and-pencil learning with textbooks has dominated the Chinese classroom for a long</td>
</tr>
<tr>
<td>regardless of restraints of place and time.</td>
<td>time and many students are accustomed to it.</td>
</tr>
<tr>
<td>2) online learning materials are more informative and can be selected according to</td>
<td>2) faster computers and higher internet speed are needed for online learning at Anhui</td>
</tr>
<tr>
<td>one’s interests.</td>
<td>University, which is not as convenient as textbook learning.</td>
</tr>
<tr>
<td>3) there are more freedom and diversity in online learning activities.</td>
<td>3) it is hard to control oneself and maintain high efficiency in online learning without the</td>
</tr>
<tr>
<td></td>
<td>supervision of classroom instructors.</td>
</tr>
<tr>
<td></td>
<td>4) online learning is less interactive than classroom learning.</td>
</tr>
<tr>
<td></td>
<td>5) the cost of traditional learning is cheaper.</td>
</tr>
<tr>
<td></td>
<td>6) it is uncomfortable to look at computer screens for a long time.</td>
</tr>
</tbody>
</table>
And finally, in terms of strengths and drawbacks of learning idioms online, a summary of participants’ feedbacks is presented in Table 4.7.

**Table 4.8** Strengths and drawbacks of online idiom learning from participants' feedback

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Percent</th>
<th>Drawbacks</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience, no time and place restraint</td>
<td>28.40%</td>
<td>Computer hardware and internet restraint</td>
<td>21.62%</td>
</tr>
<tr>
<td>Detailed information and broad coverage</td>
<td>22.22%</td>
<td>Time and place restraint</td>
<td>16.22%</td>
</tr>
<tr>
<td>Novelty in learning content that arouses learners’ interests</td>
<td>20.99%</td>
<td>Problems with learning management system and materials</td>
<td>16.22%</td>
</tr>
<tr>
<td>Learner autonomy</td>
<td>14.81%</td>
<td>Lack of teachers’ assistance and guidance</td>
<td>14.86%</td>
</tr>
<tr>
<td>Easy access to online dictionary tools</td>
<td>8.64%</td>
<td>Lack of supervision and self-control</td>
<td>10.81%</td>
</tr>
<tr>
<td>Interaction with other learners</td>
<td>4.94%</td>
<td>Lack of interaction</td>
<td>6.76%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lower learning efficiency compared with textbook learning</td>
<td>6.76%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of user-friendliness</td>
<td>4.05%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Too much information to choose</td>
<td>2.70%</td>
</tr>
</tbody>
</table>

The summary in Table 4.7 reveals that the major strengths of online learning of idioms are convenience of time and place (28.40%), detailed information and broad coverage (22.22%), novelty in learning content that arouses learners’ interests (20.99%), and learner autonomy (14.81%). Particularly, as for the convenience of time and place, participants mentioned that, “it’s very convenient to go online and learn at any time I wanted,” “I often go home at weekends, but I can still continue my English learning online,” “I don’t have to take a heavy book or dictionary with me when learning those idioms.” Detailed information is another aspect participants stressed with online learning. They mentioned that, “selected idioms haven’t been included in textbooks, but are closely
related to daily life and very useful,” “knowledge can be well expanded through learning origins of idioms,” “…there are diversity and many options in learning,” and “it’s easy to look for relevant information through internet when doing learning activities.” The learning content is also what participants paid much attention to. Many of them agreed that online idiom learning was novel to them and aroused their great interest in conducting learning activities. Finally, some participants mentioned the advantage of learner autonomy in online learning, stating that they can “… manage and control time in learning freely,” “… choose prime time to learn and achieve best efficiency,” and “… review learning content according to personal needs”.

There are also drawbacks in online idiom learning as mentioned by participants. Overall, the major ones are: computer hardware and internet restraints (21.62%), time and place restraints (16.22%), problems with the learning management system and materials (16.22%), lack of teachers’ assistance and guidance (14.86%), lack of supervision and self-control (10.81%). Specifically, computer hardware and internet speed were the most frequent complaints in the study. Although all participants had access to the internet, the connection speed to the WebCT server at ISU was relatively slow and that affected some participants’ enthusiasm and persistence in conducting all online learning activities. In addition, some participants mentioned that, although online learning can take place wherever internet access is available, not every student in Chinese universities can afford to have a personal computer and in most cases they still have to go to campus computer labs to do online learning activities with many school restraints, such as limited access to certain computer labs and short lab hours, which actually reduces the advantage of online
learning. For such a reason, a number of participants stressed that there were time and place constraints in online learning because of limited places to use computers to access the internet on campus. Therefore, they would still prefer to “…take a textbook at hand and read anytime.” Lack of teachers’ assistance and guidance was another major concern among participants. Since most Chinese students are accustomed to large size classroom instruction, they rely on teachers’ lecturing heavily. Therefore, some participants were expecting more assistance from WebCT. They believed that “…teachers’ instruction is more vivid, systematic, and easier to understand.” Due to an absence of real teachers’ supervision, participants mentioned that they tended to lose focus in doing online learning activities and resulting in low learning efficiency. For example, “…stopped learning halfway” and “…couldn’t fully focused on learning and tended to browse irrelevant web pages.” High expectations for the online language learning system led to another group of complaints. Participants mentioned that they could not save their learning progress in WebCT and were not able to review their learning anytime as they like. They also expected some oral practice of target idioms in the system as well as a more systemic learning unit and schedule which would help them progress gradually. Such problems in WebCT, though some of them are technical and can be solved easily, provided valuable suggestions for further design of online idiom courses.

Based on the aforementioned summary of participants’ questionnaires, the answer to the third research question is clear. The major advantages of online idiom learning for Chinese learners can be its convenience of time and place, detailed information, novelty in learning content that arouses learners’ interests, and learner autonomy. As for its
drawbacks, restraint of computer hardware and slow internet speed, lack of teacher assistance and guidance, problems in the learning management system and materials, and lack of supervision and self-control, were major disadvantages that may hinder effective learning.

**Note on Test Reliability**

The reliability of the pretest, posttest, and delayed posttest were calculated via the KR-21 formula to examine the usefulness of test statistics. One thing that needs to be noted is that the reliability of the pretest was expected to be very low because the pretest was meant to check participants’ idiom knowledge and designed to include idioms that most participants had not met before. Therefore, the actual average score of the pretest was very low and so is its reliability. The overall reliability of posttest and delayed posttest were 0.59 and 0.63, which were moderate considering the scope of the study and number of participants.
CHAPTER 5. CONCLUSION

Study Summary

This study investigated the effect of etymological elaboration on L2 idiom acquisition in an online environment. Specifically, the study included a series of learning activities and assessments and was presented via a learning management system, WebCT, on the ISU web server. Seventy Chinese sophomores at Anhui University in China were invited by the researcher to participate in the study. The data produced by participants during their conduction of online learning activities were collected and analyzed to answer three research questions: 1) Does learning idioms in an online environment facilitate learners’ idiom acquisition? 2) Is etymological elaboration an effective instructional approach in helping learners acquire and retain L2 idioms in an online environment like WebCT? and 3) What are some strengths and drawbacks of learning idioms online according to learners’ learning experience? The answers to the three questions are as follows: first, online learning can be an effective way to facilitate learners’ idiom acquisition. Second, compared with traditional idiom instruction, etymological elaboration achieved the same effect in L2 idiom acquisition as the traditional approach did in the online environment, but it made significant difference in helping learners retain productive knowledge of more target idioms. Third, the major strengths of learning idioms online are convenience of time and place, detailed information and input, novelty in learning content to arouse learners’ interests, and learner autonomy. In contrast, the major drawbacks included constraints of computer hardware
and internet speed, lack of teacher assistance and guidance, problems in using the learning management system and materials, and lack of supervision and self-control.

**Implications of the Study**

Apart from answering three research questions, results obtained from the study also helped produce some implications for future research with regard to L2 idiom instruction in an online environment.

First, the results showed that online learning did help participants acquire target idioms regardless of different instructional approaches since both groups achieved significantly higher scores in posttests than in pretests after the different treatments of learning activities in WebCT. However, to what extent online learning can contribute to idiom acquisition was not measured in the study and a comparison of the effect of different media (e.g., web-based learning vs. paper-and-pencil learning) on L2 idiom acquisition may be necessary for the future research.

Second, statistical analysis of the study revealed that only in the delayed posttest of productive knowledge of target idioms did participants treated with etymological elaboration significantly outperform their control group counterparts. In the immediate posttests and the delayed receptive knowledge test, both groups achieved similar learning outcomes. Such results are not in accord with results of most previous studies, in which etymologically treated groups outperformed control groups in both immediate and delayed posttests (Boers et al., 2004; Guo, 2008). However, one way this study is different from previous ones is that it tried to measure both productive and receptive knowledge of
target idioms respectively through two separate quizzes, instead of just measuring the receptive knowledge of target idioms as most previous studies did (Guo, 2008). Considering the difference, the researcher suggests that more replication studies regarding the effect of the etymological approach on productive and receptive knowledge respectively be conducted in the future to help update the results of this study.

Third, use of visual assistance was excluded in the study to reduce influence of variables. However, since one strength of an online learning system is its provision of various multimedia information in helping learners with dual coding and multiple-level processing, visual assistance like pictures may also contribute to learners’ idiom acquisition to some extent. Therefore, a future study on the effect of visual-aided etymological elaboration on idiom acquisition may help explore a most effective way of combining web-based learning and etymological instruction for L2 idiom acquisition.

Fourth, participants’ feedback suggested that the lack of teachers’ assistance and guidance is one major drawback of online learning. This suggests some important criteria for the design of web-based courses, which need to be more user-friendly and interactive. Therefore, in future studies, more interactive designs should be considered for the course and a more systemic learning unit is needed.

Fifth, considering the regional differences in English education in China and the accessibility of computers and internet in Chinese universities, the researcher suggests that future studies be conducted in different Chinese cities to increase the generalibility of the result from the current study. In the study, most participants from Anhui University indicated that they had not had any language learning experience in an LMS. This is
because a majority of students in Anhui University are from cities and areas where English is taught in secondary schools through a traditional instructional approach and students’ access to computers and internet is limited. Compared with students in big Chinese cities like Beijing and Shanghai, students from rural areas tend to have a relatively lower proficiency in their language skills.

Finally, another implication from participants’ questionnaires is to investigate the correspondence of participants’ preference for online learning or textbook learning and their actual performance in posttests. Some participants supported online learning in questionnaires because of its novelty. It would be interesting to examine whether their preferences match their actual learning outcome after they finished online learning.

**Limitations**

Several limitations of the study need to be mentioned for improvement in future studies. First, the computer hardware and internet speed became a major obstacle that affected data collection of the study. Because of the low internet speed, some participants did not finish all online activities and therefore were excluded from the data collection.

Although web-based language learning is a good way to help learners acquire language skills beyond the constraint of time and place, the computer hardware and internet speed are two critical factors that need to be considered for successful online learning. Therefore, the researcher suggests that a local network be used for future study to eliminate the negative effect of poor internet speed.

Second, the sample number of the study could be larger in future studies and onsite
teacher supervision may be needed to some extent. For this study, although 70 participants were recruited for data collection, only 55 sets of data were valid and could be used. Because of the small sample size, errors in statistical analysis might have occurred. In addition, since all the activities were conducted by participants autonomously during their spare time without teacher supervision, less self-disciplined participants may fail to finish the required learning tasks on time and appropriately, which will inevitably result in an increment of invalid data. Therefore, moderate teacher supervision in a local network would be an ideal setting for data collection in future research.

The third limitation of the study may be the short period between two posttests. Participants in the study only waited seven days before conducting their delayed posttest, which may not be long enough to test the real effect of etymological elaboration on idiom retention. In some previous studies, the treatment of etymological instruction had lasted for nearly one semester and a four-week time span existed between the two posttests (Guo, 2008). Results from this study showed that participants had relatively high retention of target idioms, which may partly be due to the short period between two posttests. Therefore, in the design of future studies, a longer learning period with correspondingly longer time intervals between two posttests may be necessary for participants to conduct their online learning activities in a more systemic way.

Fourth, the moderate reliability of the two posttests in the study suggests that the result of the study needs to be treated with some caution and the tests need to be further analyzed and improved. To make test data more dependable, future revisions of the study
will involve an item analysis of the tests, which will eliminate weak items in the tests and increase their reliability.

Finally, since all the participants in the study were from a Chinese university with the same cultural and educational backgrounds, whether or not the study results can be applied to learners from other ethnic groups and cultures is questionable. As culture plays an important role in second language learning and idiomatic expressions are especially culture specific and sensitive, replication of the study among learners from other countries with different cultural backgrounds is a must in the future to increase the generalibility of the study result.

**Conclusion and call for future research**

The area of idiom research provides a very interesting aspect of L2 acquisition. Different instructional approaches, media, and learning environments are all important factors that affect L2 learners’ acquisition and retention of idioms. With the wide application of internet-based learning tools on university campuses, this study aims to explore the effect of a special instructional approach, etymological elaboration, on L2 idiom learning in a learning management system, WebCT. The result of the study shows that using etymology in L2 idiom instruction is effective in the retention of productive knowledge of target idioms and that the learning management system creates a favorable online environment that helps contribute to learners’ L2 idiom acquisition. Because of a different study design and focus, the result of the current study is partially in accordance with previous research on using etymology in L2 idiom learning. However, many
implications from the study suggest ideas for future research. First, the study compared the differential effects of two instructional approaches, etymological elaboration and traditional instruction, in an online environment. However, since learning media (online or classroom) can be another major factor that affects learning outcome. Future research on the comparison of the effect of etymological elaboration in the online environment and the traditional classroom is necessary to provide more details to supplement the current study.

Second, visuals were not used in the current study to eliminate possible variables that may affect the effect of etymological elaboration. However, visual aids like pictures and videos in L2 idiom learning may help learners come up with concrete mental images more easily from abstract figurative meanings, thus contributing to a better understanding and longer retention. Therefore, studies on the supplementary effect of visuals to etymological elaboration are necessary to explore a way to fully incorporate strengths of internet-based learning of etymology in L2 idiom acquisition.

Third, although the questionnaire response showed that many participants favored learning idioms online, such a result was only based on their personal beliefs. Some participants mentioned that they supported online learning for its novelty. In this regard, whether or not participants’ preferences match their actual learning outcome in the study is an issue that needs to be further examined in future.

Fourth, since cultural differences can be a factor that affects language learning and all the participants in the study were Chinese, the study result may not be applicable to learners from other countries. Therefore, replication of the study among learners from
other countries and cultural backgrounds is a must for further research.
Appendix A.

Pretest

Quiz 1. Cloze

1. (Points: 1)  
I won't prepare a speech: I'll talk __________ (without preparation).

2. (Points: 1)  
After exposure of a sex scandal, his political career is __________, (in a state of near collapse or defeat)

3. (Points: 1)  
Let's __________ before our meeting with the boss. You can call me at home if you want. (to make contact or talk briefly with someone in order to know what to do next)

4. (Points: 1)  
He had learned as a boy that there is a time to stay and fight and a time to __________, (to make a speedy or sudden departure from an awkward or hazardous situation rather than confront or deal with it)

5. (Points: 1)  
Is he really angry with me or do you think he's just __________ (to play a good-humored joke)?

6. (Points: 1)  
Car drivers are __________ after another rise in petrol prices. (To show courage in facing a difficult or unpleasant situation)

7. (Points: 1)  
USB thumb drives may be __________ (commonly available and of no particular value), but they're endlessly useful.

8. (Points: 1)  
If the education reform is too expensive to implement, it's __________ for the committee. (to indicate that an idea or plan has been unsuccessful and a new one must be devised)

9. (Points: 1)  
He ________ (to say clearly what you think or feel although you may embarrass or offend someone) about his dissatisfaction with the service in the hotel.

10. (Points: 1)  
It was almost a miracle that after his bout with pneumonia, he was back __________ of health. (in very good health; in very good or excellent condition, physically and emotionally)

11. (Points: 1)  
Radio has been __________ to television for decades now. (take a subordinate role to someone or something)

12. (Points: 1)  
A shot rang out, and another cowboy
fell off his horse and _________ (to die).

13. (Points: 1)
I know that your family hates your idea of moving to Arizona, but you should _________ (refuse to compromise or change). It's easier to buy a house there.

14. (Points: 1)
Come on, Sandra, _________ (tell the secret). Who are you going to the dance with?

15. (Points: 1)
Atkinson ____________, though some members of his team were very upset by the criticism they received. (to endure or accept misfortune courageously)

16. (Points: 1)
After failing a math test, Tom had to go home and _________ . (to receive punishment of one's actions)

17. (Points: 1)
We were supposed to hand in our proposals on Friday, but Johnny _________ (to do something too soon, especially without thinking carefully about it) and handed his in on Thursday.

18. (Points: 1)
I'm ____________ with one of my students. He never does his homework and he's late to class every day. (At the limits of one's resources, abilities, endurance, or patience)

19. (Points: 1)
That new advertisement really hits _________ (not keeping up with the rules, unfair).

20. (Points: 1)
My uncle works for the police department. He _________ and got my parking ticket revoked, which saved me twenty-five dollars. (to use influence with someone to get something done).

21. (Points: 1)
I wonder what Dad said when he heard I tried to put myself _________ (to die) -- and failed. I should have put the gun to my head

22. (Points: 1)
Who would go _________ (do sth. in a risk, without much support) to help a child who was fighting for his life?

23. (Points: 1)
______________ in Washington DC, the senator took time out to talk to our reporter. (traveling to different places to speak to people in order to get their political support)

24. (Points: 1)
His latest novel was ____________ in literary circles and is on the best-seller list. (to attract a lot of public attention)

25. (Points: 1)
Don't worry, we can put this assignment _________ (having low priority) since it is due next month.

26. (Points: 1)
In this neighborhood,
has become an art form. (to try to have all the same things of your friends and neighbors in order to seem as good as them)

27. (Points: 1)
I spent an hour trying to program my VCR, but I failed. Now I have to start ________ (from beginning without much help and advantage).

28. (Points: 1)
All of the products left in the shop went ________ (sold very cheaply).

29. (Points: 1)
The critics may be right, and he may just be __________, too green to survive in a long campaign. (Someone or something that draws a lot of attention for a very short time)

30. (Points: 1)
He would have made a good pilot but his drinking habit was his _________. (a weak point or fault in a perfect and excellent person or something)

Quiz 2. Multiple-choice questions

1. When I bake a cake, I ________. I never use a cake mix in a box. (Points: 1)
   A. start from scratch
   B. stew in my own juices
   C. step up to the plate
   D. roll my sleeves up

2. On the ________ in North Dakota, Anderson took time out to give this interview to our reporter. (Points: 1)
   A. stump
   B. brick
   C. platform
   D. stool

3. Johnny is not going to college for three years, so let's put that on a ______ and think about how we're going to pay for this Mercedes today. (Points: 1)
   A. back seat
   B. backup
   C. back burner
   D. back shelf

4. I got this car for a ______, its owner sold it for only 1500 dollars because he was moving to a big city with a decent job. (Points: 1)
   A. penny
   B. dime
   C. song
   D. peanut

5. The shop is ________ and must surely have to close soon. (Points: 1)
   A. on the ropes
   B. off the cuff
   C. up against wall
   D. out on a limb

6. When his business started to fail, he decided to ________, rather than face financial ruin. (Points: 1)
   A. clear the decks
   B. cut and run
   C. go with the flow
   D. fly off the handle

7. They decided to __________ and pay the extra for the house they really wanted. (Points: 1)
   A. weather the storm
   B. pull strings
C. face the music
D. bite the bullet

8. You're just waiting until he's __________ so you can get his money. (Points: 1)
   A. six feet under
   B. off his trolley
   C. in seventh heaven
   D. from soup to nuts

9. Our proposal might not be accepted, in which case we'll have to __________. (Points: 1)
   A. start from scratch
   B. draw the short straw
   C. go back to the drawing board
   D. meet our Waterloo

10. He recovered completely from his surgery and has been in the __________ ever since. (Points: 1)
    A. yellow
    B. green
    C. pink
    D. red

11. We do not want to __________ by making a statement about what caused the explosion before the investigation is completed. (Points: 1)
    A. jump the gun
    B. sit on the fence
    C. speak of the devil
    D. shoot the breeze

12. It's no use to hide. He has __________. (Points: 1)
    A. entered the lists
    B. spilled the beans
    C. smelled a rat
    D. lost his shirt

13. I don't want to go out on __________. but I think we can afford to do it. (Points: 1)
    A. a limb
    B. a branch
    C. a rock
    D. a gamble

14. Tired of __________, she resigned and started her own company. (Points: 1)
    A. playing the second fiddle
    B. working like a charm
    C. clearing the decks
    D. putting the cart before the horse

15. You have to be able to stick to your __________ and don't let anybody talk you out of what you believe. (Points: 1)
    A. arms
    B. head
    C. religion
    D. guns

16. He was really arguably striking below the __________ against the Clintons talking about Bill Clinton's affair with Monica Lewinsky. (Points: 1)
    A. table
    B. bottom
    C. belt
    D. face

17. The cavalry commander predicted that many Sioux would bite the __________ if they attacked the fort. (Points: 1)
    A. dirt
    B. dust
    C. bullet
    D. ground

18. Mr. Yeltsin made no __________ about the fact that he doesn't want Mr. Gorbachev's job.
19. They laid some blunt criticism on him, but he took it on the ________.
A. nose
B. head
C. face
D. chin

20. Mary broke a dining-room window and had to ___________ when her father got home. (Points: 1)
A. clear the decks
B. eat crow
C. face the music
D. go for the burn

21. There are special players in this league, they don't come a ______ a dozen, and he's one of those. (Points: 1)
A. penny
B. cent
C. dime
D. quarter

22. You don't mean that. You're just ___________. (Points: 1)
A. pulling my leg
B. leaving me high and dry
C. driving me nuts
D. greasing my palm

23. Tommy and I __________ on this question yesterday, and we are in agreement. (Points: 1)
A. shot the breeze
B. touched base
C. crossed fingers
D. sat on the fence

24. These kids are driving me out of my mind. I'm at the end of my ________.

25. I could give an opinion off the ________, but I'd rather think about it.

26. I can get it done easily by pulling a few __________. (Points: 1)
A. cords
B. ropes
C. strings
D. lines

27. I'm afraid that my success as a painter was just ___________. (Points: 1)
A. a blank check
B. a labor of Hercules
C. a flash in the pan
D. a soft touch

28. I am tired of trying to ___________. Let's just move if we can't afford to live here. (Points: 1)
A. beat around the bush
B. keep up with the Joneses
C. feather our own nest
D. sit on the fence

29. The book wasn't a best-seller but it did make quite a ______ in American literary circles. (Points: 1)
A. notice
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<tr>
<td>B. splash</td>
<td>spiders was his __________. (Points: 1)</td>
</tr>
<tr>
<td>C. thunder</td>
<td>A. Achilles' heel</td>
</tr>
<tr>
<td>D. fame</td>
<td>B. last straw</td>
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30. He was very brave, but fear of

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<td></td>
<td>C. Pandora's box</td>
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<td>D. dead end</td>
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Appendix B.

Posttest

Quiz 1. Cloze

1. (Points: 1)
   I won't prepare a speech; I'll talk __________ (without preparation).

2. (Points: 1)
   Let's __________ (to make contact or talk briefly with someone in order to know what to do next) before our meeting with the boss. You can call me at home if you want.

3. (Points: 1)
   Is he really angry with me or do you think he's just __________ (to play a good-humored joke)?

4. (Points: 1)
   USB thumb drives may be __________ (commonly available and of no particular value), but they're endlessly useful.

5. (Points: 1)
   He __________ (to say clearly what you think or feel although you may embarrass or offend someone) about his dissatisfaction with the service in the hotel.

6. (Points: 1)
   A shot rang out, and another cowboy fell off his horse and __________ (to die).

7. (Points: 1)
   I know that your family hates your idea of moving to Arizona, but you should __________ (refuse to compromise or change). It's easier to buy a house there.

8. (Points: 1)
   Come on, Sandra, __________ (tell the secret). Who are you going to the dance with?

9. (Points: 1)
   We were supposed to hand in our proposals on Friday, but Johnny __________ (to do something too soon, especially without thinking carefully about it) and handed his in on Thursday.

10. (Points: 1)
    That new advertisement really hits __________ (not keeping up with the rules, unfair).

11. (Points: 1)
    I wonder what Dad said when he heard I tried to put myself __________ (to die) -- and failed. I should have put the gun to my head.

12. (Points: 1)
    Who would go __________ (do sth. in a risk, without much support) to help a child who was fighting for his life?

13. (Points: 1)
    Don't worry, we can put this assignment __________ (having low priority) since it is due next month.

14. (Points: 1)
I spent an hour trying to program my VCR, but I failed. Now I have to start _______ (from beginning without much help and advantage).

15. (Points: 1)
All of the products left in the shop went _______ (sold very cheaply).

Quiz 2. Multiple-choice

1. (Points: 1)
Joe, I know you're working on the Anderson contract, but let's put it on the back burner for now. We need your help on the new Jones contract—it's worth more than five million dollars.
   a. put it in a low priority
   b. temporarily ignore that
   c. make a cancellation
   d. forget it for a while

2. (Points: 1)
Mr. Yeltsin made no bones about the fact that he doesn't want Mr. Gorbachev's job.
   a. fell sorry for
   b. state clearly and directly
   c. speak ambiguously
   d. have no objections

3. (Points: 1)
I thought his remarks were quite below the belt.
   a. offensive
   b. rude and vulgar
   c. absurd and ridiculous
   d. low and unfair

4. (Points: 1)
No one knows what to expect with him because he can go off the cuff and just say anything or do anything.

   a. to one's astonishment
   b. beyond one's expectation
   c. with imagination
   d. without preparation

5. (Points: 1)
I don't want to go out on a limb, but I think we can afford to do it.
   a. get involved in a gamble
   b. do something without preparation
   c. take a risk without help
   d. do something overboard

6. (Points: 1)
This is one of my favorite pieces of furniture and I got it for a song in a grey market.
   a. with a trade-in price
   b. with a surcharge
   c. with a cheap price
   d. with a sale discount

7. (Points: 1)
If I spill the beans then they'll sue me for $5 million.
   a. violate the rules
   b. tell the secret
   c. spread the rumor
   d. break the contract

8. (Points: 1)
The cavalry commander predicted that many Sioux would bite the dust if they attacked the fort.
   a. get wound seriously
   b. die
   c. be defeated
   d. suffer a great loss

9. (Points: 1)
Tommy and I touched base on this question yesterday, and we are in agreement.
   a. exchanged opposite opinions
b. have a debate heatedly

c. discuss in detail

d. make contact and talk briefly

c. from raw materials

d. from very beginning

10. (Points: 1)
We do not want to jump the gun by making a statement about what caused the explosion before the investigation is completed.

a. put in much effort and energy
b. take immediate action
c. present an official report
d. give a rush conclusion

11. (Points: 1)
There are special players in this league, they don't come a dime a dozen, and he's one of those.

a. appear frequently
b. receive the same training as others
c. not commonly available
d. participate in team work

12. (Points: 1)
When he was young, Kanzius was one of those kids who built radios from scratch, so he knew the hidden power of radio waves.

a. from a concept
b. from basic parts

c. six feet under

13. (Points: 1)
You're just waiting until he's six feet under, so you can get his money.

a. put into prison
b. dead
c. walk away
d. divorce

14. (Points: 1)
I know they respect you. No, no-I'm not pulling your leg. I'm serious. Please go to his house now, and explain the situation as it stands to his wife.

a. cheat someone
b. play a joke with someone
c. make someone lose face
d. try to please someone

15. (Points: 1)
She stuck to her guns about what she would and wouldn't do.

a. be alert and very conscious
b. try to be independent in doing sth.
c. have one's own opinions
d. refuse to compromise or change ideas
Appendix C.

Delayed Posttest

Quiz 1. Cloze

1. (Points: 1)
   He was getting it ________ (very cheaply), from a widow who'd never learned to drive her husband's car.

2. (Points: 1)
   When he was young, Kanzius was one of those kids who built radios ________ (from the beginning without much help and advantage), so he knew the hidden power of radio waves.

3. (Points: 1)
   You're just waiting until he's ________ (to die) so you can get his money.

4. (Points: 1)
   I'll go ________ (do sth. in a risk, without much support) and pick the Panthers to win on Sunday.

5. (Points: 1)
   I thought his remarks were quite ________ (low, unfair).

6. (Points: 1)
   Outside the courtroom, many people in Lodi wonder if the FBI ________ (to do sth. too soon, without thinking carefully about it) when it arrested the two men.

7. (Points: 1)
   If I ________ (to tell a secret) then they'll sue me for $5 million.

8. (Points: 1)
   You have to be able to ________ (refuse to compromise or change) and don't let anybody talk you out of what you believe.

9. (Points: 1)
   The cavalry commander predicted that many Sioux would ________ (to die) if they attacked the fort.

10. (Points: 1)
    She ________ (to say clearly what you think or feel although you may embarrass or offend someone) about wanting John to leave.

11. (Points: 1)
    Remember, editors are ________ (commonly available and of no particular value), so if she causes trouble, fire her.

12. (Points: 1)
    You don't mean that. You're just ________ (make a joke with sb.).

13. (Points: 1)
    I think he ________ (to make contact or talk briefly with someone) with a man that George Bush often seemed to forget.

14. (Points: 1)
    I did have kind of an ________ (without preparation, casual) conversation with someone who watches the military sales industry very closely in this country.
15. (Points: 1)
With other important homework due next Monday, I had to put my statistics project __________ (having low priority) for a while.

Quiz 2. Multiple-choice

1. (Points: 1)
There are special players in this league, they don't come a dime a dozen, and he's one of those.
   a. participate in team work
   b. not commonly available
   c. receive the same training as others
   d. appear frequently

2. (Points: 1)
I don't want to go out on a limb, but I think we can afford to do it.
   a. do something overboard
   b. get involved in a gamble
   c. take a risk without help
   d. do something without preparation

3. (Points: 1)
We do not want to jump the gun by making a statement about what caused the explosion before the investigation is completed.
   a. present an official report
   b. put in much effort and energy
   c. take immediate action
   d. give a rush conclusion

4. (Points: 1)
I know they respect you. No, no-I'm not pulling your leg. I'm serious. Please go to his house now, and explain the situation as it stands to his wife.
   a. make someone lose face
   b. try to please someone
   c. play a joke with someone
   d. cheat someone

5. (Points: 1)
Joe, I know you're working on the Anderson contract, but let's put it on the back burner for now. We need your help on the new Jones contract--it's worth more than five million dollars.
   a. temporarily ignore that
   b. forget it for a while
   c. put it in a low priority
   d. make a cancellation

6. (Points: 1)
Come on, Sandra, spill the beans. Who are you going to the dance with?
   a. make a guess
   b. tell the secret
   c. stop lying
   d. uncover the truth

7. (Points: 1)
I was still trying to reach her to touch base with her. She was in a lockdown.
   a. discuss in detail
   b. make contact and talk briefly
   c. debate with someone
   d. exchange opposite opinions

8. (Points: 1)
Despite some strong opposition from all sides, McCain stuck to his guns in his speech.
   a. have one's own opinions
   b. try to be independent in doing sth.
   c. be very tough with sth.
   d. refuse to compromise or change ideas

9. (Points: 1)
I could give an opinion off the cuff, but I'd rather think about it.
   a. in a very concise way
b. in a humorous way
c. from personal intuition
d. without preparation

10. (Points: 1)
When I had my mother alone, I asked her to tell me again about the dress she made from curtains, and the red shoes, and the garnet necklace she got for a song.
a. with a trade-in price
b. with a sale discount
c. with a cheap price
d. with a surcharge

11. (Points: 1)
Mr. Yeltsin made no bones about the fact that he doesn't want Mr. Gorbachev's job.
a. fell sorry for
b. have no objections
c. speak ambiguously
d. state clearly and directly

12. (Points: 1)
Hillary Clinton didn't win it because she hits below the belt. Obama won it because he's a good and fair fighter and an electable candidate.
a. absurd and ridiculous
b. low and unfair
c. offensive
d. rude and vulgar

13. (Points: 1)
I wonder what Dad said when he heard I tried to put myself six feet under, -- and failed. I should have put the gun to my head.
a. abandon oneself without control
b. commit suicide and die
c. take a risk that dangers one's life
d. get involved in a crime

14. (Points: 1)
Two Hollywood stars of the thirties have recently bitten the dust.
a. get involved in scandals
b. lose audience
c. suffer an economic loss
d. die

15. (Points: 1)
I spent an hour trying to program my VCR, but I failed. Now I have to start from scratch.
a. from very beginning
b. from basic parts
c. from raw materials
d. from a different idea
Appendix D.

Online Learning Questionnaire

Age: _____ Sex: ___Male   ___Female

1. What is your major at Anhui University? ____________

2. How long have you been learning English? ____________

3. How many hours do you spend in learning English every week?
   1-2 hours
   3-5 hours
   6-8 hours
   9-12 hours
   15 hours and above

4. What is your CET-4 score? ____________

5. Do you often have difficulty in understanding English idioms in your daily work and study?
   Never
   Few
   Sometimes
   In most cases
   Always

6. Are you interested in learning English idioms?
   No
   Little
   Interested
   Very interested
   Extremely interested

7. When encountering unfamiliar an English idiom, do you want to know its origin and background?
   No
   A little
   Some interest
   Very interested
   Extremely interested

8. How many idioms in pretest have you already known before browsing learning unit?
   n<2
   n<5
   n<8
   n<12
   n<15
   n<20
   n<25

9. Approximately how many idioms in pretest were chosen based on your sheer guess?
   5<n<10
   10<n<15
   15<n<20
   20<n<25
   25<n<30

10. Overall, how is the difficulty of pretest?
    Very easy
    Easy
    OK
    Difficult
    Very difficulty

11. Overall, how is the difficulty of
posttest?
Very easy
Easy
OK
Difficult
Very difficulty

12. Overall, how is the difficulty of delayed posttest?
Very easy
Easy
OK
Difficult
Very difficulty

(13-15 will be answered by participants in experimental group only)

13. Overall, is it easy to understand the explanation of origins and examples of idioms in the learning unit?
Very easy
Easy
OK
Difficult
Very difficulty

14. Overall, how much are you able to use these idioms after learning them in WebCT?
<10%
<30%
=50%
>80%
>95%

15. Overall, how much can you remember these idioms after browsing learning unit in WebCT?
<10%
<30%
=50%
>80%
>95%

(16-18 will be answered by participants in control group only)

16. Overall, is it easy to understand the explanation and examples of idioms in the learning unit?
Very easy
Easy
OK
Difficult
Very difficulty

17. Overall, how much are you able to use these idioms after learning them in WebCT?
<10%
<30%
=50%
>80%
>95%

18. Overall, how much can you remember these idioms after browsing learning unit in WebCT?
<10%
<30%
=50%
>80%
>95%

19. Do you have confidence to use the idioms from the learning unit after participating in the study?
(Little confidence  a lot of confidence)
1  2  3  4  5

20. Did you use online dictionary to consult unfamiliar words when browsing the
learning unit?
Yes, ________which one, DICT.CN or Merriam-Webster Online?
No

21. From which of the following avenues do you often learn English idioms?
Textbooks
English magazine and newspapers
Multimedia CD-ROMs
Websites
Movies
Other, _____________________(please specify).

22. Have you the experience of learning English idioms online?
Yes, _________(please specify)
No

23. Have you any experience of learning English in the Language Management System like WebCT?
Yes
No

24. When browsing in WebCT, were you able to get familiar with its interface and locate learning tasks easily?
Very difficult to get familiar
A little difficult to get familiar
Could get familiar without much time
Easy to get familiar
Very easy to get familiar immediately

25. Compared with traditional classroom learning with textbooks, what do you think are the strengths and advantages of learning idioms online?
____________________

26. Compared with traditional classroom learning with textbooks, what do you think are the drawbacks and disadvantages of learning idioms online?
_____________________

27. What do you prefer, traditional textbook learning and online learning?
Why?_________________

28. What was the greatest difficulty you met during the process of your online learning when participating in the study? ________________

29. Can posttests in the WebCT help you evaluate your learning outcome?
30. What factors do you think affected your online learning most?

THANK YOU 😊
APPENDIX E. SCREEN SHOTS OF ONLINE LEARNING UNITS AND TESTS

Figure E 1. Learning unit with etymological elaboration (experimental group)

Figure E 2. Learning unit without etymological elaboration (control group)
Figure E 3. Homepage of online learning units

Figure E 4. Tests
Figure E 5. Online questionnaire survey in participants’ native language, Chinese
Figure E 6. Online dictionaries used in the learning units
APPENDIX F. IDIOM FREQUENCY LIST

<table>
<thead>
<tr>
<th>IDIOMS</th>
<th>TOT</th>
<th>SPOKEN</th>
<th>FICTION</th>
<th>MAGZINE</th>
<th>NEWSPAPER</th>
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REFERENCES


ACKNOWLEDGEMENTS

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