

# Effects of a KWL Plus Model of Meta-Cognitive Translation Instruction and Internet-Based Language Laboratory on Non-English-Majored Undergraduates' Translation Skills

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**Abstract:** This paper reviewed a one-term experiment on integrating internet-based language laboratory (IBLL) in teaching translation skills with the know-want-learn (KWL) plus model to 132 first-year non-English-majored undergraduate students from Yangtze University as subjects. Subjects in this study consisted of 66 non-English-majored undergraduates in the control group (CG) and 66 non-English-majored undergraduates in the treatment group (TG). The results showed that 1) compared with a teacher-dominated approach for CG, the internet-based language laboratory with KWL plus model of meta-cognitive translation strategy instruction for TG did a better job in enhancing students' translation skills; 2) there were significant differences between males in CG and TG, and females in CG and EG; 3) students in TG held the positive response for the combined translation teaching method.

**Keywords:** Non-English-Majored Undergraduates, Translation Skills, KWL Plus Model, IBLL

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## 1. Introduction

The KWL plus model is an instructional framework for teachers to provide their students with a systematic approach in reading comprehension [1] and writing process. And meta-cognitive strategies are higher order executive skills that may entail advanced organization, advanced preparation, monitoring and evaluating the success of a learning activity. Meta-cognitive strategies guide cognitive strategies. This article would discuss combining a KWL plus model of meta-cognitive strategy and support of internet-based language laboratory in translation skills and ability instruction. This article was to investigate that 1) Compared with CG, did combining a KWL plus model of meta-cognitive strategy with IBLL support help non-English-majored undergraduate students improve their translation skills? 2) Compared with CG, were there significant differences between male and female undergraduate students? 3) What were responses from undergraduate students in TG to the combined method?

## 2. Literature Review

### *The KWL plus strategy: An instructional reading strategy*

The know-what-learn (KWL) model is a three-stage instructional framework developed by Ogle [2] for teachers to guide their students with a systematic approach to their reading process. KWL is an instructional scheme that develops active reading of expository texts by activating learners' background knowledge [3]. The KWL plus model provides a method for recalling what learners know about a topic, then noting what they want to know about the topic, and finally listing what has been learned. In 1987, the model was revised by Carr & Ogle into the KWL-Plus model; short for Know, Want, and Learn plus Mapping and Summarizing, learners developed their own questions for reading. These researchers supplemented the traditional K-W-L model with mapping and summarization strategies for use in content area texts. These additions to the K-W-L model were helpful for remedial and non-remedial high school students, guiding them in advanced reading [4]. After doing several KWL-Plus

activities, learners are encouraged to use it as an independent learning strategy to activate their prior knowledge and also extend their KWL scheme to confirm the accuracy of their prior knowledge and of what they learn, which helps them set a definite purpose for reading and record what they learned [5]. When mapping, learners refer to the K step to categorize what they learned. When summarizing, learners number the concepts on the map and choose to make them a written summary. Later, Ogle [6] further developed the KWL strategy in combination with 5 questions: 1) What is the concept; 2) What I know about; 3) What I want to know; 4) How I find out; 5) What I have learned. Lou and Xu [7] reported KWL plus model applied in non-English-majored graduates' reading. Jan Bryan [8] developed KWL strategy to Know(K), Want(W) to learn, Where(W) to learn and Learned in teaching reading.

#### *The KWL plus mode: An instructional writing strategy*

From its origin, the KWL plus model works as an instructional reading strategy. As a reading strategy, it provides new teachers the method to engage students from the beginning of a reading lesson by activating prior knowledge. KWL plus also provides teachers the method to keep students interested as they think about what they want to know and what they have learned [9]. Accessing prior knowledge and engaging learners' interest before beginning a reading activity can improve learners' ability to make associations, enhance understanding, and increase comprehension [10]. Their proficiency is enhanced in setting purposes for reading, searching information from texts, organizing that information into graphic outlines, and writing summaries based on those graphic outlines [11]. The model provides a framework learners can utilize to monitor their decoding of a text through listing, mapping and summarizing what was learned. And, these processes contribute greatly to learners' writing since writing under these conditions is based on learners' experience about the topic and their comprehension of the text. Thus KWL, especially the developed schemes, also works efficiently in writing instruction. Lou *et al.* [12] utilized the KWL plus strategy in researching non-English-majored graduates' English writing skills.

#### *Meta-Cognition*

Composing an extended text appears to require the self-regulation of planning, text generation, and reviewing through meta-cognitive control of these processes [13, 14]. Meta-cognition was originally coined by Flavell [15] to refer to the knowledge and regulation of one's cognition. Later on, in the field of second/foreign language acquisition, the development of students' meta-cognition, or their ability to understand and orchestrate their own learning process, has been urged by a number of language learning strategy researchers [16-18]. O'Malley and Chamot [19] considered learning strategies as cognitive skills. Learning strategies have been divided into three categories according to the level or type of processing involved [20]. They are meta-cognitive strategies, cognitive strategies, and social/affective strategies. Meta-cognitive strategies are higher order executive skills that

may entail advanced organization, advanced preparation, monitoring and evaluating the success of a learning activity.

From the literature review above, we could find that there were researches on KWL plus model of meta-cognitive strategy with support of IBLL in reading process and writing process, but few researches on KWL plus model of meta-cognitive strategy with support of IBLL in translation skills or ability instruction was found. Therefore, the research on KWL plus model of meta-cognitive strategy with support of IBLL will be interesting.

### **3. Research Methods**

#### *Subjects*

In September 2015, 132 first-year non-English-majored Chinese undergraduates majored horticulture, agriculture, plant protection, biological technology, history, chemistry from Yangtze University were volunteers in this study. 132 subjects, passed the National Entrance Examination for College, taught by the same male instructor during the whole academic term (September, 2015 to January, 2016), were 71 females and 61 males, average age 18, Chinese as their first or mother language. All 132 subjects were divided randomly into two groups: 66 subjects as the Control Group (CG) with the traditional undergraduate translation method in regular classroom, and 66 subjects as the Treatment Group (TG) with the KWL plus model of meta-cognitive translation strategy instruction with support of IBLL. Both CG and TG had the same level of education background, family background, age, personality and life experiences, which was to say, their overall learning and cognitive abilities were almost equal.

#### *Instruments*

The instruments used in this study were tests on translation skills and translation ability and an interview with undergraduate students from TG on combining a KWL plus model of meta-cognitive translation strategy instruction with support of IBLL.

Translation applied ability pre-test All the 132 non-English-majored undergraduates were attended the translation applied tests (translation from English to Chinese(10) and translation from Chinese to English(10), total 20) in September 3, 2015 to gain students' translation applied ability in CG and TG before the experiment. The translation applied ability tests materials were taken from translation part of 2014 College English Test Four (CET 4).

Translation applied ability post-test All the 132 non-English-majored undergraduates were attended the translation applied tests (translation from English to Chinese(10) and translation from Chinese to English(10), total 20) in January 3, 2016 to gain students' changes in writing between CG and TG after the experiment. The translation applied ability tests materials were taken from translation part of 2015 College English Test Four (CET 4).

Interview After the experiment, all 66 subjects in TG participated in this study were interviewed via QQ (a kind of on-line instant message service tool in China) and We-chat (a kind of smart-phone on-line instant message service tool in

China) lasted a week and were required to fill out the interview questions: 1) Do you think the teaching method of combining a KWL plus Model of meta-cognitive strategy with IBLL support have improved your translation skills or ability? 2) Do you think the translation teaching method of combining a KWL plus model of meta-cognitive strategy with IBLL were beneficial to all 66 undergraduate students in TG? 3) Are you interested in this combined method?

#### *Data Collection and Analyses*

Two tests on translation skills or ability (translation from English to Chinese and translation from Chinese to English) before the research experiment (September 3, 2015) and two tests on translation ability (translation from English to Chinese and translation from Chinese to English) after the experiment (January 3, 2016) were conducted to compare the changes between the two groups (CG and TG) of undergraduate students in the ability of translation from English to Chinese and translation from Chinese to English. Comparison of Means was adopted to compare two groups of non-English-majored undergraduate students' average scores of their pre-test and post-test on the basis of samples. And the independent sample T-test was adopted to examine if there were significant differences between CG and TG before the experiment and after the experiment. Also the independent sample T-test was adopted to examine if there were significant differences between male and female undergraduate students in CG and TG.

## 4. Research Design

*Approach to Translation between English and Chinese* published in 2005 by Foreign Language Teaching and Research Press as the textbook was used in teaching translation skills and ability for non-English-majored undergraduates in CG and TG. In the experiment, the treatment group was instructed using the KWL plus instructional scheme and meta-cognitive strategies with support of IBLL in translation (English to Chinese, or Chinese to English), while the control group experienced in the traditional translation method. This traditional translation method only involved the teachers' interpretation of translation theories (such as direct translation, dynamic equivalence), then students translated several paragraphs from English to Chinese or Chinese to English, and finally teachers explained the students' translation and provided the sample translation. In contrast, the KWL plus model involved the learners' prior knowledge, textual knowledge and active learning. There was a well-established correlation between prior knowledge and knowledge of the translation wanted. Activating relevant prior knowledge has been demonstrated to be more effective than activating irrelevant background knowledge or not activating any background knowledge at improving text comprehension [21].

The whole experiment for TG in this study was designed to last for 4 months (September 3, 2015 to January 3, 2016). In the experiment, the translation teaching plan for TG was designed to be finished within 3 periods, and each period

lasted 40 minutes. The first period included new words (10 minutes), brainstorming the prior knowledge (10 minutes), skimming and scanning the material needed to be translated (10 minutes) and recording the information (5 minutes); The second period included students' questions on what they want to know about translation related to the topic in the textbook with support of IBLL (15 minutes), drafting the first journal (Computer-assisted) (10 minutes), self-revising and editing (Computer-assisted) (10 minutes) and finishing the second journal (Computer-assisted) (5 minutes); The third period included discussion among 6 groups (11 subjects/group) on what they had learned about translation (30 minutes), the translation teacher's conclusion about the class (5 minutes) and the assignment for students to practicing translation after class (5 minutes). Since the subjects had no preparation for the text, vocabulary handouts were given at the beginning of the first period of the translation skills and ability teaching in this experiment. Then a group discussion was held to brainstorm their experience and opinions about direct translation. Questions related to the topic were recorded in the W part of KWL plus model to help subjects plan and monitor what they want to know about translation. Then the subjects were encouraged to skim and scan the material in the text, and try to translate the material and find methods to the relevant questions in the translation through internet. The learned information was recorded in the L part of KWL so that detailed discussion could go on smoothly with reference to the KWL plus model and helped learners evaluate what they had learned. Finally, subjects practiced translating the material in their assignment, so that subjects could apply the translation skills in advanced organization of translation. The activities of group discussion, answering questions and practice were expected to help the subjects improve their translation ability. The KWL plus model reconstructed the text and highlighted the wanted information. As a result, the material could be easily translated.

## 5. Results

The results in this study were shown in three parts. Part one was translation test results of pre-test and post-tests between the control group (CG) and the treatment group (TG). Part two was whether there were significant differences between males and females, as a traditional translation teaching approach with CG was compared with KWL plus model of meta-cognitive translation strategies instruction with support of IBLL for TG. Part three was responses to the interview on KWL plus model of meta-cognitive strategy with support of IBLL from non-English-majored undergraduates in TG.

Effects of KWL plus model of meta-cognitive translation strategy instruction with support of IBLL and traditional translation method on non-English-majored undergraduates' translation

From Table 1, the results showed translation tests' scores between CG and TG taught by different translation methods in the pre- tests' scores and the post- tests' scores between

CG and TG. In the pre-tests, there was no significant difference ( $t=1.043$ ,  $P=.301$ ) between CG ( $M=10.682$ ,  $S=1.756$ ) and TG ( $M=10.530$ ,  $S=1.531$ ) in their translation tests. However, after the experiment, in their post-tests, a significant difference was found between CG ( $M=10.742$ ,  $S=1.676$ ) and TG ( $M=11.167$ ,  $S=1.613$ ) in the translation tests, ( $t=-2.082$ ,  $P=.041$ ). After the instruction of KWL plus model of meta-cognitive strategy with support of IBLL, the subjects' translation scores of TG ( $M=11.167$ ) were higher than that of the subjects' translation scores of CG ( $M=10.742$ ).

**Table 1.** Results of non-English-major undergraduates' translation scores of pre-test and post-test.

Tests Groups	CG (N=66)		TG (N=66)		t	P
	M	S	M	S		
Pre-test	10.682	1.756	10.530	1.531	1.043	.301
Post-test	10.742	1.676	11.167	1.613	-2.082	.041*

M stands for Mean; S stands for standard deviation; \*  $P<.05$ ; \*\* $P<.01$

Results of the T-Test about Males and Females in CG and TG taught by different translation approach.

From Table 2, we may find that there were significant differences between males and females in the two groups: CG and TG taught by two different translation teaching approaches (traditional translation teaching approach and the KWL plus model of meta-cognitive translation strategy instruction with support of IBLL). Males ( $P=.03$ ) suggested that there was the significant difference between CG and TG in their translation ability after the KWL plus model of meta-cognitive translation strategy instruction with support of IBLL and females ( $P=.02$ ) suggested that there was a significant difference between CG and TG in their translation ability after the KWL plus model of meta-cognitive translation strategy instruction with support of IBLL.

**Table 2.** Results of the T-Test about Males and Females in CG and TG taught by different translation approach.

Gender	T (two-tailed)	
	Males	Females
Probability	.03*	.02*

\*  $P<.05$ ; \*\* $P<.01$

Results of responses of the interview from non-English-major undergraduates in TG on instructing translation through KWL plus model of meta-cognitive strategy with support of IBLL

Before the KWL plus model of meta-cognitive translation strategies instruction with support of IBLL was ended, an interview was held to collect responses from non-English-majored undergraduate students in TG on the combined translation teaching method of KWL plus model of meta-cognitive translation strategies instruction with support of IBLL on January 2, 2016. 66 subjects in TG as volunteers attended the interview.

Among 66 subjects in TG, 57 subjects wrote that the combined method of the KWL plus model of meta-cognitive translation strategies instruction with support of IBLL had

improved their translation skills and translation ability, and they had known direct translation, subtitles in screen translation, translation of terminology in different fields; 9 subjects wrote that it was difficult for them to ask questions, because as the freshmen, they knew less on translation and did not know what they wanted to learn more on translation, and they also thought whatever translation from English to Chinese or translation from Chinese to English was difficult to them; 59 subjects thought the KWL plus model of meta-cognitive translation strategies instruction with support of IBLL was beneficial to them, but 7 subjects thought the KWL plus model of meta-cognitive translation strategies instruction with support of IBLL was not beneficial to them, because their Chinese and English foundation were not good, they were not good at both Chinese and English learning, the new combined translation teaching and learning method could not help them improve their translation skills and translation ability in one academic term. 60 subjects reported that they were interested in this new combined translation teaching and learning method, but 6 subjects wrote that the combined translation teaching and learning method was complicated for them to learn and use in the translation, they were not interested in this combined translation teaching and learning method.

## 6. Discussion

The author in this paper wants to investigate the answers to the three questions. One of the purposes in this paper is to investigate if the translation instruction through KWL plus model of meta-cognitive strategy with support of IBLL can improve non-English-majored undergraduates' translation skills and translation ability. Improvement of subjects in TG in translation skills and translation ability shows the important role of KWL plus model of meta-cognitive strategy with support of IBLL played in non-English-majored undergraduates' translation learning.

Through results in Table 1, we could know that after the translation instruction through the traditional method for CG and KWL plus model of meta-cognitive strategy with support of IBLL for TG, both subjects' translation scores in CG and subjects' translation scores in TG were improved, but the subjects' translation scores in TG were higher than that in CG, it means that the combined translation teaching method of KWL plus model of meta-cognitive strategy with support of IBLL can improve non-English-majored undergraduates' translation skills and translation ability in TG after non-English-majored undergraduates in TG were trained by the combined translation method with support of IBLL. The new combined translation teaching and learning method (KWL plus model of meta-cognitive strategy with support of IBLL) encourages students in TG to ask questions on what they want to know about translation such as translation theories, screen translation, machine translation, and share what they have learned and they could get help from the instructor or translators on line through internet, then their translation skills and translation ability can be improved by

the training of the combined translation method.

After non-English-major undergraduate students in TG were trained by the KWL plus model of meta-cognitive strategy with support of IBLL, most of male and female non-English-major undergraduate students in TG successfully learn to provide questions on what they want to learn and learn knowledge related to translation such as translation theories, screen translation, machine translation and they practice translating the assigned materials and revise their translation drafts according to the instructor's suggestion or suggestions from translators on line, so they show better in translation skills and translation ability, compared with male and female non-English-major undergraduates in CG. And there are significant differences between males and females in CG and TG. Male and female non-English-major undergraduate students in TG could have the opportunity to discuss the problems or difficulties and solve the problems or difficulties during their translation process, which would provide chances for non-English-major undergraduate students in TG to improve their translation skills and translation ability.

Most Non-English-major undergraduates in TG generally holding positive response for the KWL plus model of meta-cognitive translation strategies instruction with support of IBLL suggest that the combination of the KWL plus model of meta-cognitive translation strategies instruction with support of IBLL into regular non-English-majored English curriculum is a worthy try. Translation will be as a tool for non-English-majored undergraduates to recommend the Chinese culture and advanced technology to the people in other countries, at the same time, non-English-majored undergraduates could recommend advanced science and technology in western countries to China and Chinese readers by translation. Non-English-majored undergraduate students need practice translating and revising more academic-style materials related to their majors, the method of the KWL plus model of meta-cognitive translation strategies instruction with support of IBLL is tentative method for non-English-majored undergraduates to learn how to translate and monitor how to relate their prior translation knowledge to translation knowledge they want to know, then they can evaluate what they learn in translation practice with the help of peer feedback, the instructor or translators on line. Although 57 subjects in TG think the KWL plus model of meta-cognitive translation strategies instruction with support of IBLL has improved their translation skills and translation ability, the combined translation teaching method is not beneficial to all subjects in TG, the instructor needs help solve learners' learning difficulties such as how to ask questions on what they want to know. 60 subjects are interested in the combined translation teaching and learning method. However, the combined translation teaching and learning method is not accepted by 6 subjects.

#### *Limitations and Suggestions for Further Research*

Though the present study has provided a survey of combining a know-want-learn plus model of meta-cognitive translation strategy instruction and internet-based language laboratory (IBLL) among the 66 non-English-majored

undergraduate students, there are still some limitations in the study. There are limitations in this article.

Firstly, time limitation (only 4 months) and other practical restrictions such as the subjects in the study consisted of only 132 first year non-English-majored undergraduate students in one university are needed to be broadened in further research.

Secondly, the instruments used in this study to investigate the non-English-majored undergraduate students' translation skills instruction involve two tools to measure non-English-majored undergraduate students' translation skills. The study would be much better, if it were combined with other instruments such as observation, verbal report. More instruments should be used in investigating in the further research.

Finally, participates in this study were the non-English-majored undergraduate students in only one university. Results of other subjects' translation skills such as high school students, English-majored undergraduates and non-English-majored graduates, we need further research.

Despite of the restraints of the study, we hope that it can offer some guidelines for further research on non-English-majored undergraduate students' translation skills.

## 7. Conclusion

This paper investigated an experiment (September 3, 2015 to January 3, 2016) on integrating internet-based language laboratory (IBLL) in teaching translation skills with the know-want-learn (KWL) plus model to 132 first-year non-English-majored undergraduate students from Yangtze University as subjects. Subjects in this study consisted of 66 non-English-majored undergraduates in the control group (CG) and 66 non-English-majored undergraduates in the treatment group (TG). The results showed that 1) compared with a teacher-dominated approach for CG, the internet-based language laboratory with KWL plus model of meta-cognitive translation strategy instruction for TG did a better job in enhancing students' translation skills; 2) there were significant differences between males in CG and TG, and females in CG and TG; 3) students in TG held the positive response for the combined translation teaching method. We hope this paper could provide the information for the future research. We hope this paper could provide the information for the future research.

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