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# The Integration of the Know-Want-Learn (KWL) Strategy into English Language Teaching for Non-English Majors<sup>1</sup>

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## *Abstract*

The Know-Want-Learn (KWL) strategy, advanced in the 1980s, is an instructional reading strategy widely used in reading classes in the USA. The KWL process reflects the cognitive process in language acquisition, and it is currently used in the writing classes on Minnesota State Colleges and Universities (MnSCU) campuses as an instructional writing strategy. Relevant studies on this strategy have been reported by some overseas educators. Though such lead-in activities as warm-up or pre-reading derive from similar instructional schemes, KWL has not so far drawn academic attention from the foreign language teaching community in China. This paper, taking a lesson plan as an example, attempts to illustrate a manageable way to integrate the KWL reading strategy and writing strategy in English language teaching for non-English majors (hereafter referred to as “ELT for non-majors”). The learners’ response to the KWL instructional scheme will be included in this research. It is hoped that this strategy can be brought into full play in ELT for non-majors.

*Key words: KWL strategy; KWL instructional reading strategy; KWL instructional writing strategy; integrated application*

## 1. Introduction

Strategy-based instruction projects have been developed by the MnSCU (Minnesota State Colleges and Universities) Center for Teaching and Learning. While participating

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in the Strategy-Based Instruction Training Program last summer, the author found that KWL strategy was commonly used in reading and writing classes on MnSCU campuses. “K-W-L” stands for what I Know, what I Want to learn, and what I Learned. It is argued that KWL is an instructional reading strategy designed for instructors to help learners learn from nonfiction texts in any content area. The KWL process reflects the fundamental cognitive process in language acquisition and is currently used in the writing classes on MnSCU campuses as an instructional writing strategy. However, this strategy is currently given little attention in the integrated English course for non-English majors in China. This course includes listening, speaking, reading and writing classes, which are usually given by the same instructor in most colleges in China. This paper attempts to address the integration of the KWL strategy into English courses in ELT for non-majors. Questions considered include: 1) How can we integrate the KWL instructional scheme into ELT for non-majors? 2) What response will learners make to this integration? A lesson plan will be designed as an example on how to integrate the two instructional schemes, and some empirical data will indicate learners’ response to this integration.

## 2. Literature review of the KWL strategy

### 2.1 The KWL process: An instructional reading strategy

Developed by D. Ogle, (1986), KWL is an instructional scheme that develops active reading of expository texts by activating learners’ background knowledge (Bos & Vaughn, 2002). It provides a structure for recalling what learners know about a topic, noting what they want to know, and finally listing what has been learned and is yet to be learned. Learners begin by brainstorming everything they Know about the topic. The relevant information is recorded in the K column of the KWL scheme (Table 1). Learners then generate a list of questions about what they Want to know about the topic. These questions are listed in the W column. During or after reading, learners answer these questions. What they have Learned is recorded in the L column.

**Table 1.** KWL instructional scheme

K (What I Know)	W (What I Want to learn)	L (What I Learned)
The experience expected to use:	The things I want to know:	
A)	A)	
B)	B)	
C)	C)	
...	...	

Carr & Ogle (1987) revised the strategy into the KWL-Plus scheme, short for Know, Want, and Learn plus Mapping and Summarizing. These researchers supplemented the traditional K-W-L strategy with mapping and summarization strategies for use in content area texts. These additions to the K-W-L strategy were helpful for remedial and non-remedial high school students, guiding them in advanced reading (Strangman & Hall,

2009). Ogle claims KWL helps learners become better readers of expository texts and helps instructors to be more interactive in their teaching. 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. This helps them set a definite purpose for reading and record what they learned (Conner, 2006). When mapping, learners refer to the K step to categorize what they learned. Placing the title at the center of the map, they form categories as major branches, and add explanatory concepts. When summarizing, learners number the concepts on the map and choose to make them a written summary. The summary becomes a useful summative evaluation learners can use to evaluate their comprehension.

Later, Ogle (1992) further developed his KWL strategy in combination with 5W questions. The strategy creates an instructional framework where learners list 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. In this sense, KWL functions as an effective assessment tool to evaluate the comprehension of the text on learners' part and evaluate the effectiveness of the instructional process on instructors' part. Since the first question aims to make the topic or concept clear, only H (How I find out) is inserted between the K column and L column in Table 1. Some people, as a result, call it the KWHL strategy.

## **2.2 The KWL process: An instructional writing strategy**

From its origin, the KWL strategy works as an instructional reading strategy. As a reading strategy, it helps new teachers engage students from the beginning of a reading lesson by activating prior knowledge. KWL also helps teachers keep students interested as they think about what they want to know and what they have learned (Sasson, 2008). Accessing prior knowledge and engaging learners' interest before beginning a reading activity can improve learners' ability to make associations, enhance understanding, and increase comprehension (Bailey, 2002: 1). 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 (Bader, 2007). The strategy offers a framework learners can use to monitor their decoding of a text through listing, mapping and summarizing what was learned. Furthermore, 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.

The writing instruction may begin with steps (Steps 1 to 3 in Appendix 1) that parallel the K step in the KWL strategy. Experiences from brainstorming in Step 2 are related to the topic and they provide the experiential basis for the development of the topic. The instruction moves to steps (Steps 3 to 4 in Appendix 1) which parallel the W step in KWL and gives prominence to what I want to write. It prepares for the writing process and bridges between K and L in the KWL strategy. It then moves to H (How I write) in the revised KWHL scheme (Steps 5 to 7 in Appendix 1) and finally reaches L in the KWL scheme (Steps 6 to 10 in Appendix 1), from which students learn the expected

writing skills. Some of the steps bridge between H and L in KWL scheme. Strictly speaking, this writing process involves the steps of reading, talking, writing, revising and evaluating.

### **2.3 Relevant studies on the KWL strategy**

The KWL approach has been recommended by teaching professionals (Bean, 1995; Carr & Ogle, 1987; Fisher et al., 2002). Although the research to support its effectiveness has been limited, the KWL strategy is popular and widely accepted in the US. Stone & Miller (1991) documented growth among struggling college readers when KWL served as the basis for a college reading course. Significant differences were found on pre- and post-comprehension tests, grades in the co-requisite courses, short-term retention rates, and interviews of confidence in the use of active reading strategies (Peterson, 2000). Sasson (2008) argued that brainstorming was a great way to begin a reading lesson because it engaged all students, including the more silent ones who might not be talking but were in fact listening to their peers. The KWL strategy also helped struggling readers build evidence of their learning that they could become strategic readers. Szabo (2007) used the KWL technique as a vehicle to demonstrate to these struggling readers that their understanding of the topics being studied was broadened through their day-to-day interactions with text. Even for students with autism, using KWL strategies could make reading more accessible and fun in the classroom (Casey, 2009). Also, the presentation activity helped learners improve the content and meaning fluency in their writing. It was argued in Ma's dissertation (Ma, 1998: 45) that reading and speaking abilities contributed to L2 learners' writing ability. Based on the relevant studies, this paper will introduce a way to integrate the KWL reading and writing strategies into ELT for non-majors.

## **3. The integration of KWL in ELT for non-majors: An empirical study**

### **3.1 Research questions**

Two questions were investigated: 1) How can we integrate KWL instructional scheme into ELT for non-majors? 2) What are the learners' responses to KWL instructional scheme? A lesson plan will be used as the example to illustrate the way of illustration, and an experiment will be reported as evidence.

### **3.2 Participants**

On the basis of the KWL scheme (Table 1) and the classroom observation (Appendix 1), an empirical experiment was conducted in October 2008, in an attempt to find an effective way to integrate KWL into ELT for non-majors and discover the degree of acceptance on learners' part. Eighty non-English majors participated in this experiment. They were freshmen from two classes, one majoring in chemistry, the other in medicine. One was the experimental group, instructed using the KWL scheme, and the other was the control group. The participants were at an intermediate level of English language since their total scores varied from 70 to 79 of 100 points on the proficiency test at the beginning of the course and their writing scores varied from 6 to 8 of 10 points.

### 3.3 Procedures of the experiment

#### 3.3.1 KWL reading instruction: Preparation of KWL writing

To help learners acquire the skills of listening, speaking, reading and writing remains the ultimate goal for instructors in ELT for non-majors. Greatly inspired by the classroom observation on MnSCU campus in Appendix 1 as well as the teacher materials from Bowman-Kruhm (2003a; 2003b) and Conner (2006), the author hereby suggests the integrated application of KWL strategy to the integrated English course for non-English majors. The experiment was based on the lesson plan in Appendix 2, titled *Public Attitudes Towards Science* (College English Integrated Course, Book 1. Shanghai Foreign Language Education Press).

In the experiment, the participants were not required to make any preparation before the class, unlike what they usually do. The experimental group was instructed using the KWL instructional scheme, while the control group experienced in the traditional Grammar-Translation Method (Gu, 2002). This Grammar-Translation Method only involved the interpretation of grammatical rules, language points and sentence-to-sentence translation of the text. In contrast, the KWL scheme involved the participants' prior knowledge, textual knowledge and active learning. There is a well established correlation between prior knowledge and reading comprehension. 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 (Carr et al., 1996; Strangman & Hall, 2009).

The teaching plan was designed to be finished within 3 periods, each period lasting 40 minutes. The time allocation of the plan is listed in Appendix 3. Since the participants had no preparation for the text, vocabulary handouts were given at the beginning of the first period. Then a group discussion was held to brainstorm their experience and opinions about science. Questions related to the topic were recorded in the W column of KWL scheme. Then the participants were encouraged to skim and scan the text and try to find answers to the relevant questions. The learned information was recorded in the L column so that detailed discussion could go on smoothly with reference to the KWL scheme. Finally, summative discussion was held so that it provided information for the restatement of the topic in the intended writing. The activities of group discussion, answering questions and summative discussion were expected to help the participants improve their speaking. Listening was also expected to be improved to some extent when students were listening to their peers. The KWL process reconstructed the text and highlighted the Wanted information in the text. Referring to the KWL scheme in Appendix 2, the participants made less effort to interpret and organize the Learned information. As a result, an essay could be easily composed.

#### 3.3.2 KWL writing experiment: The data collection

As far as the writing was concerned, mapping and summarizing were involved. The participants were required to write the essay, titled *Public Attitudes Towards Science*. The topic in K column in Appendix 2 was used as the main idea of the expected essay. The body part came directly from the summarized information in the W and L columns,

and the concluding remarks drew materials from the summative discussion. Later on, the expected writing activity was finished according to Steps 5 to 10 (Appendix 1). Since English was the language of both the reading and writing experiments, the communication in peer revising, peer editing and peer evaluation contributed to learners' speaking and listening as well. Meanwhile, the writing process was computer-assisted so that much time could be saved for revising, editing and copying. Appendix 3 describes the time allocation.

At the end of the experiment, the participants in the experimental group were asked to complete a questionnaire about their evaluation of the KWL scheme. The questionnaire consisted of 4 questions (Appendix 4) and was designed on a 5-point Likert scale of agreement, where 1=Don't agree at all, 2=Only agree a little, 3=Agree to some extent, 4=Agree rather much, and 5=Agree very much. The participants were asked to circle one of the numbers. The data elicited from the questionnaire survey was analyzed by SPSS 13.0.

Two other instructors, along with the author, were invited to grade the final journals, judging structure, content, presentation and meaning fluency. The structure and content reflect learners' comprehension of the text, and the presentation and meaning fluency reflect their writing ability. The content, structure, presentation and meaning fluency were graded on a 5-point scale, where 1=Not at all acceptable/related, 2=Only a little acceptable/related, 3=To some extent acceptable/related, 4=Well acceptable/related, and 5=Very well acceptable/related. The total points amounted to 20. The average of the points given by the three instructors was used as the final score for an essay. An independent-samples t test was employed to determine the statistical significance of the mean differences between the two groups.

### 3.4 Results and discussion

As to the written work, the mean score of the experimental group was 12.2470 and that of the control group was 11.8677. Table 2 below illustrates the results of the t test.

**Table 2.** Independent-samples t test: The significant difference between two groups

Variances	t-test for Equality of Means					95% CI of D	
	t	df	Sig.(2-tailed)	MD	SE of D	Lower	Upper
Equal	2.161	78	.034	.37933	.17556	.02981	.72884
Unequal	2.161	75.8334	.034	.37933	.17556	.02965	.72900

Levene's Test for Equality of Variances: F= .192 P= .662

\* The mean difference is significant at the 0.05 level; 95% CI of D = 95% Confidence Interval of the Difference; MD= Mean Difference; SE of D= Std. Error Difference

According to Levene's test for equality of variances in Table 2, F= .192 and P= .662 (>0.05) assume equal variances. And in t-test with equal variances assumed, results t=2.161 and p= .034 (<0.05) show a significant difference in the means between two groups. This means that the KWL strategy had brought improvement in comprehension and writing performance on the part of the experimental group. The written work was based on the

comprehension of the particular text and norms for grading the paper covered both the comprehension and writing abilities. Thus this research has 96.6% of the confidence that subjects in the experimental group, instructed in KWL strategy, had acquired better abilities in comprehension and writing than the controlled group. In the following semesters, the author has practiced the KWL scheme on several occasions, with similar findings to this experiment. Due to the limited space, these findings are not supposed to be described in this paper.

The questionnaire survey showed that about 75% of the participants circled “4” and “5”, indicating that they were in favor or strongly favor of the KWL strategy. Only 7.5% gave a low rating of the strategy. The mean (4.05) indicated that the majority of the participants had a positive attitude toward the integration of KWL into ELT for non-majors.

The findings illustrate a manageable way of integrating the KWL reading and writing strategies in ELT for non-majors. Active learning, as shown in this study, can be well implemented in KWL instructional scheme, and most important of all, learners prefer such active learning through the KWL scheme.

## 4. Conclusion

The KWL strategy motivates active learning and instructing on the parts of both learners and instructors. This study made contributions as follows: 1) It illustrated a detailed process for integrating the KWL scheme into ELT for non-majors. 2) It shows that such integration involves efforts on the part of both learners and instructors. KWL can work as a very effective strategy in attaining the ultimate goal of all-round development in learners' listening, speaking, reading, writing and interpretation abilities. KWL is an effective instructional strategy worthy of our attention.

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## Appendix 1 The observation of writing class on MnSCU campus

	Time: July 23, 2008	Place: MnSCU campus
Step 1	Students were assigned materials to read before class.	
Step 2	Teacher talked with students by encouraging them to brainstorm the aspects related to the topic.	
Step 3	Each student selected a desirable aspect and tried to find explanatory concepts to develop the topic.	
Step 4	Talking with teacher, students built the structure of the essay.	
Step 5	Students edited the 1st essay at one go within 10 minutes.	
Step 6	Students edited the 2nd essay after self-revising and self-editing.	
Step 7	In group work, peer revising and peer editing were completed according to the norms set by teacher. The errors were underlined for the writers to correct themselves. Then the 3rd essay came out.	
Step 8	In group work, peer evaluation of the 3rd essay was done according to the evaluation norms set by teacher.	
Step 9	All three essays were required to turn in just for supervision, and the 3rd essay was to be graded by teacher.	
Step10	Graded essays were returned to give feedback.	

## Appendix 2 KWL scheme of *Public Attitudes Towards Science*

Subject: Public Attitudes towards Science		
<b>K</b> (What I Know)	1. Science is mysterious and magic, e.g. cloning, spaceship. 2. Science is damaging, e.g. nuclear weapons. 3. Science has brought both advantages and disadvantages to our life. 4. Public have different attitudes towards science.	<b>Topic: To make an informed decision, the public should have a basic understanding of science.</b> <b>(Introduction)</b>
<b>W</b> (What I Want to learn)	Q1. What advantages and disadvantages will science bring us? Q2. How can the public have a basic understanding of science? Q3. How should science be taught in school? Q4. How should scientists present science? Q5. How should TV program producers educate the public about science?	<b>Question:</b> What can be done to educate the public about science?  <b>Answer:</b> Science should be taught in school
<b>L</b> (What I Learned)	Q1. Traffic, inventions, medicine; war, poisons, pollution, etc. Q2. Learn science at school, on TV, on books, on Internet, etc. Q3. Science is to be taught in language and pictures. Q4. Scientists shouldn't present science in complicated equations. Q5. Producers should explain science, instead of making it magic.	in simple language and pictures, not in equations. TV programs should give explanation to science, instead of making it magic. <b>(Body Part)</b>
<b>Further discussion:</b>	1. What will happen if the public have the basic understanding of science? 2. What will happen if they don't have the basic understanding of science?	If the public don't have the basic understanding of science, human civilization is likely to be destroyed. <b>(Conclusion)</b>

### Appendix 3 Time allocation of the teaching plan

Period	Process	Time minute
1	Vocabulary learning	10
1	Brainstorming the prior knowledge	10
1	Skimming and scanning the text	15
1	Recording the information	5
2	Mapping and summarizing the topic	10
2	Drafting the 1st journal (Computer-assisted)	15
2	Self-revising and editing (Computer-assisted)	10
2	Finishing the 2nd journal (Computer-assisted)	5
3	Peer revising and editing the 2nd journal	15
3	Finishing the 3rd journal (Computer-assisted)	5
3	Peer evaluating and grading the 3rd journal	10
3	Final journal (Computer-assisted)	5
3	Summative assessment	5

### Appendix 4 Summative evaluation handout

Class \_\_\_\_\_ Major \_\_\_\_\_ Date \_\_\_\_\_

Not at all      Only a little      To some extent      Rather much      Very much (agreeable)  
 1                      2                      3                      4                      5

How would you rate the KWL scheme in each of the following areas? Use the scale above for your responses.

Did the KWL strategy help you understand the text?                      1 2 3 4 5  
 Did mapping and summarizing help make your writing clear?                      1 2 3 4 5  
 Did group discussion help you with your speaking and listening?                      1 2 3 4 5  
 Do you think KWL facilitate your active learning?                      1 2 3 4 5

(Copy editing: Don Snow)