

The Application of Question Scaffolding Model in Senior High School English Writing Teaching

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Abstract: English writing plays a very important role in the English proficiency test for high school students and college entrance examination. Therefore, it's extremely urgent and challenging for all the English teachers to apply a more effective approach to improve students' English writing ability. Scaffolding teaching model is based on constructivism and Vygotsky's concept of zone of proximal development (ZPD). Questions are the most common scaffolding in the learning process, and the experienced teachers provide the question scaffolding naturally and appropriately during the students' learning process. Questionnaire, pretest, post-test and interview are used in the study of the application of question scaffolding model in senior high school English writing teaching. This kind of teaching model has been proved to be effective and has been widely applied abroad. But in China, there are still few empirical studies on scaffolding teaching in the field of English writing in senior high school. So, the present study makes an attempt to study how to improve students' English writing ability under the guidance of question scaffolding teaching model.

1. Introduction

1.1. Background

With the globalization of economy, the society has stepped into the information age. People all over the world communicate with each other more and more frequently. English, as an important international language, has played an important role in various fields. Many significant conferences, political or economic, national or international are all held in English. Some information people obtain from books, newspapers and internet is also written in English. Therefore, it's even more vital for people to communicate or write e-mails with others in English fluently.

English writing is one of the productive skills and reflects the integrated skills of English learning. The scores of English writing take up about 20% in any kind of English tests. So, English writing is essential for English learning. However there are still many problems in English writing for the senior high school students. When writing, they make a lot of mistakes; they feel difficult to express their ideas in English; and they even don't know the writing strategies to make the article cohesive. Consequently, it's urgent to adopt proper ways to improve students' writing ability. Based on this situation, the present study aims to adopt the question scaffolding teaching model in English writing teaching to see if it is effective to improve students' English writing ability.

1.2. The Purpose of the Study

Many students are afraid of writing and are not used to thinking in English, which leads to lower confidence and interest in students' learning. In order to improve the efficiency of English writing, teachers actively explore the rules of English writing teaching in senior high school, trying to seek the best teaching method for high school students and improve their English writing quality.

The purpose of the present study is to find out whether question scaffolding teaching model can improve high school students' English writing ability. Then it investigates the students' attitudes towards this new teaching approach. Lastly, it analyzes the merits and demerits of the question scaffolding teaching model.

1.3. The Significance of the Study

This research has the following three practical significance:

Firstly, question scaffolding teaching is one form of scaffolding model, which is based on the structuralism theory and Vygotsky's Zone of Proximal Development (ZPD). This kind of teaching model emphasizes the process of the writing, the interaction between teacher and students, between students and students, between questions and social-cultural context.

Secondly, the subjects of this research are middle school students; questions are used as scaffold to mobilize their interest and motivation in English writing. Meanwhile, question scaffolding teaching model aims to change students' attitudes towards English writing and helps student to form good habits of English writing learning mode.

Lastly, the empirical study also presents the merits and demerits of the question-based scaffolding teaching model for other teachers to learn from the strong points and avoid or overcome its demerits.

2. Literature Review

2.1. Introduction of Scaffolding Teaching Model

Scaffolding originally referred to a holder used in construction industry and was first introduced into teaching by American famous educator and psychologist Bruner.

Scaffolding teaching model was advocated by Piaget's Constructivism and Vygotsky's theory of children's development. But Vygotsky's Zone of Proximal Development (ZPD) and his theory of social construction is the most important and direct source.

2.1.1. Definition of Scaffolding Teaching Model

Scaffolding was proposed by Wood Bruner & Ross [1, 2]. It is described as "a process that enables a child to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts...", wrote "Scaffolding refers to the way the adult guides the child's learning via focused question and positive interactions...". Scaffolding was described by Rogoff [3] as "a supported situation in which children can extend current skills and knowledge to a higher level of competence."

Besides, scaffolding teaching model refers to the model in which learners complete a task with the support or help by teachers or partners [4-6]. The core of scaffolding teaching model is: (1) learners are the center of learning process; (2) teachers guide the teaching process and give proper help in time; (3) teachers should withdraw the assistance immediately if the students can do it independently. Students can get improved through scaffoldings from others and comparative

learning from each other in class.

2.1.2. Types of Scaffolding Instruction Model

Scaffolding instruction model can be divided into different types by different criteria for the classification [7-10].

From the view of educational settings, scaffolding instruction model includes model, prompt, hint, cue, instruction, solution and think-aloud modeling.

From aspect of pedagogical activities, scaffolding instruction model is made up of knowledge scaffolding, strategy scaffolding, organization scaffolding, information scaffolding and emotional scaffolding.

From the perspective of forms, scaffolding instruction model is divided into examples, questions, suggestions, guidelines and charts.

Questions is the most common scaffolding in the learning process, and teachers use questions to encourage students to get deep conception and analysis around of learning tasks. Experienced teachers prefer to use question scaffolding naturally and spontaneously in the process of English teaching. Question scaffolding is usually more structured, more operable and concerned with more details in some specific subjects. It is necessary for teachers to design some questions as scaffolds when they can predict students' difficulties in learning.

2.2. Principles of Scaffolding Teaching Model

Hogan and Pressley put forward some principles of scaffolding teaching model as follows:

(1) Establishing scaffolds based on the students' zone of proximal development. Teaching should be carried out in the "zone of proximal development", which is a potentially virtual space. The "zone of proximal development" can only emerge when problems arise and they cause an adjacent challenge to learning. Therefore, teachers must create a certain problem situation, which must be adjacent to students' existing level of the development. Teachers should keep abreast of the existing standards, experience and interest of students, and provide the basis for the creation of appropriate problem scenarios.

(2) Designing scaffolding ahead based on the content and students' characteristics. The teaching content and certain learners' characteristics including interest, characteristic, experience, ability, background knowledge must be studied in advance.

(3) Providing appropriate assistance. Teachers should use hints, asking questions, displaying models and group discussing to scaffold students in learning. Teachers should also ask questions and make praise to encourage students to continue learning.

(4) Interactions are penetrated in the process of scaffolding teaching. Interactions between teachers and students, students and students can cultivate students' inspirations and solve the difficult problems before writing. When creating writing situations, teachers should provide the necessary resources and tools to encourage students to actively interact with the material and environment, and actively explore.

(5) Withdrawing the scaffolding gradually. Scaffolding is withdrawn when students can solve the problems and write compositions independently. Students can get more opportunities to practice writing in English and correct it by self-construction and peer-development to improve their writing ability.

3. Research Design

3.1. Research Questions

The present study is expected to find answer to the following research questions:

- (1) Which is more effective to improve students' English writing ability, task-based teaching method or question scaffolding teaching model?
- (2) What are students' attitudes towards question scaffolding teaching model?
- (3) What are the changes in students' English writing habits through question scaffolding teaching model?
- (4) What are the merits and demerits of the question scaffolding model?

3.2. Subjects

The subjects are students from two classes of Grade Two in Huainan No.6 Middle School. The reasons for selecting Grade Two as the subjects are as follows. Firstly, compared with the freshmen in this school, the levels of English writing are moderate in the learning procedure. Secondly, students in Grade Three are busy preparing their college entrance examination, and they have little time to do the experiment.

Class Three serves as experimental class in which the question scaffolding teaching model is applied. Class Two serves as control class with the same number of the students, but task-based teaching method is adopted instead. Their average age is 16 and their gender proportion is similar. They have learned English for about 5 years. They participate in the study from September, 2020 to January, 2021. In the pre-test, the scores of the compositions from the two classes are calculated by SPSS20.0. The result of the paired-samples t-test is $t(33) = 0.022, p > 0.05$, which reveals that there are no significant differences in English writing between the two classes. Table 1 demonstrates the background information of the participants.

Table 1: Basic Background Information of the Participants

Class	Grade	Total number	Female	male	Average years of English learning	Average age
Class 2 (control)	Two	34	16	18	5	16
Class 3 (experimental)	Two	34	18	16	5	16

3.3. Instruments

In order to ensure the validity and accuracy of this study, both qualitative research and quantitative research are adopted in this experiment, including pre-test, post-test, questionnaire and interview.

3.3.1. Materials

According to different topics and genres, the materials of the English composition teaching are chosen from English textbook of Beijing Normal University Edition and college entrance exams. Table 2 is the topics of the compositions every two weeks.

Table 2: Teaching materials and experiment timetable

Time	Writing Task
September: Week3-Week4	Topic1: Argumentation Advantages and Disadvantages of Watching TV
October: Week5	National Day
Week6-Week7	Topic2: Narration The Teacher I Admire Most
Week8	Mid-term exam (including a composition)
November: Week9-Week10	Topic3: Practical Writing Write a letter to your pen-pal in USA to talk about Chinese traditional festivals and ask about their traditional festivals.
Week11-Week12	Topic4: Expository Writing Describe a chart about the health problems of the senior high school students.
December: Week13-Week14	Topic5: Argumentation Should we obey the traffic rules or not?
Week15-Week16	Topic6: Practical Writing Write a job application letter including a resume.
January: Week17-Week18	Final exam (including a composition)

3.3.2. Pretest

To examine the participants' practical English writing level, pretest is conducted at the beginning of the experiment. The pretest is chosen from the composition of the final exam of Grade One, which is made by the education bureau of Huainan. The pretest is done by students of Class Two and Class Three at the fixed time in class. Then the compositions in the pretest are marked according to the assessment standard of NMET to guarantee relative objectivity of the test result. The scores of the pretest are calculated by SPSS to identify whether there are significant differences in English writing between experimental class and control class.

3.4. Procedure

The experiment was carried out from the third week of September to the end of the term. The question scaffolding teaching model is applied in the experimental class but the task-teaching method is adopted in the control class for the same topics in the English lessons. Every two weeks, there is an English writing lesson.

There are six steps in the question scaffolding teaching model in the experimental class.

Step 1: setting up some questions related to the topic and attracting students interest in the writing topic.

Step 2: introducing the writing strategies by questions.

Step 3: writing out the framework of the composition independently.

Step 4: exchanging idea in groups.

Step 5: writing the composition independently.

Step 6: peer-evaluation.

While in the control class, there are three steps for the English writing lesson. Step 1: pre-writing. The teacher introduces the topic of the composition and some related information about the topic; students write some framework independently. Step 2: while-writing. Students write the composition silently and independently while the teacher walks around the class.

3.5. Data Collection and Analysis

3.5.1. Data Collection

Data collection is carried out during the teaching experiment. The scores of the compositions from pretest, students' six writings during the experiment and post-test are collected for the quantitative analysis.

All of these data are put into the SPSS20.0 to calculate the means and the changing tendency. Qualitative data are collected from questionnaire, students' sample English compositions and interview. It is more difficult to collect qualitative data. Questionnaire is translated into Chinese to make it easier for students and get more valid data. The results of questionnaire are calculated by excel to form chart for analyzing. The texts of students' compositions are analyzed and compared to see their writing improvement. A few students are chosen to be interviewed about their opinions on the question scaffolding teaching model. The interview results have been transcribed and analyzed as well.

3.5.2. Data Analysis

SPSS (version 20.0) and excel are used to calculate and analyze the data. The Paired-Samples T Test is applied to compare the primary writing level between experimental class and control class. The Independent-Samples T Test is used to compare the primary writing level and the final writing level in experimental class to prove whether the question scaffolding can improve students' English writing level in the experimental class. Questionnaires are collected and analyzed by excel to present students' interest in English writing and the changes of attitudes and writing habits of English writing.

4. Results and Discussions

4.1. Results

Firstly, the result of the paired samples T-test of the pretest between experimental class and control class indicates that no significant difference exists between EC and CC before the empirical study ($t(33) = 0.022, p > 0.05$).

After different treatments, the difference between the two classes is significant in the post-test ($t(66) = 2.509, p < 0.05$). To get more detailed information about whether question-based scaffolding teaching model can improve students' English writing level, the scores of students' six English writing are also presented in the Table 3 and Table 4.

Secondly, the data from the questionnaire shows that only 3 students are interested in English writing and 28 students are afraid of writing English articles before the treatment. However, after the treatment, 18 students become interested in English writing and 14 students are not afraid of writing English compositions. The results show that question-based scaffolding teaching model has changed students' opinions and attitudes to English writing.

Thirdly, the data reveals the changes of students' writing habits before and after the experiment. Before the experiment, almost no one likes to write an outline. However, after the experiment, about 10 students begin to write the outline before writing. Question-based scaffolding teaching model has an effect on students' writing habits.

Fourth, text analysis of the students' writing shows the merits of the question-based scaffolding teaching model are as follows: the average students can get the most benefit from the question-based scaffolding; the atmosphere of English writing teaching gets lively and ease; the

mistakes in the composition become fewer by the self-assessment and peer-assessment. But the demerits also co-exist in English writing like this: top students get improvement fewer because of the wrongly checking and poor students have difficult to discuss in groups.

Lastly, 9 students are chosen to be interviewed to find the reasons for the results shown above after the post-test. The interview result demonstrates indicates that top students feel a waste of time to have the question scaffolding teaching model; average students get promoted under the guidance of the question-based scaffolding teaching model; poor students depend on the scaffolding too much, and they still feel difficult in writing English compositions without scaffolding.

4.2. Discussions

4.2.1. Different Effects on Students' English Writing Ability

The pretest is carried out before the experiment to make sure whether the subjects are of same English writing level between experimental class and control class. The data are collected and analyzed by SPSS20.0 as follows:

Table 3: Pre-test result of English writing between control class and experiment class

		paired samples test					t	df	Sig.(2-tailed)
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Control class – Experimental class	.02941	7.65738	1.31323	-2.64237	2.70120	.022	33	0.982

Paired Samples Test in Table 3 shows that $t(33) = -0.022$, $p = 0.982 > 0.05$, so it indicates that control class is not significantly different from experimental class on the scores of students' English composition. The difference between means is 0.02941 points on a 25-point test. So the scores of the composition in the pretest also indicate that students' English writing level is almost the same between experimental class and control class.

After 16 weeks of the experiment, the composition of the final exam for Grade Two serves as the post-test. The scores of post-test are compared with that of pre-test to see whether question-based scaffolding teaching model can improve students' English writing level. So the Paired-Samples T-Test is also applied to analyze the data from the post-test.

Independent Sample Test in Table 4 shows that $t(66) = 2.509$, $p = 0.015 < 0.05$, so it shows that compared with task-based teaching method, question-based scaffolding teaching method is more effective to improve students' English writing ability. The difference between the means is 2.20588 points on a 25-point test.

Through the tables above, the conclusion is reached that the experimental class has made more achievement in English writing than the control class although the teacher, the material and the students' pre-level are almost the same. That is to say, the question-based scaffolding can improve students' English writing level.

Two possible reasons contribute to the improvement of students' English writing level: one is that question-based scaffolding teaching model emphasizes the writing process, and students can better understand the title of the article through questions scaffolding and the discussion with partners; the other reason is that students decrease the mistakes in their writing by self-assessment and peer-assessment. When doing the assessment, they can not only prevent the same mistakes in writing next time but also can learn advantages from partners' compositions. Just as Yang Jiujun (2005) says that through assessment, students are more aware of their strengths and weaknesses,

and will think their efforts and goals that designed.

Table 4: Post-test result of English writing between control class and experimental class

Independent Sample Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Scores of composition	Equal variances assumed	0.037	0.847	-2.51	66	0.015	-2.20	0.87	-3.96	-0.45
	Equal variances not assumed			-2.51	65.68	0.015	-2.20	0.87	-3.96	-0.45

5. Conclusion

5.1. Major Findings of the Study

Compared with the data between pretest and post-test in the experimental class and the control class, the study also finds that question-based scaffolding teaching model has improved students' English writing level. The result of text analysis also shows that different levels of students get improved in English writing differently by question-based scaffolding teaching model. Average students' English writing abilities get improved more quickly than top students' and poor students'. However, in the control class, top students' English writing ability improves faster than average students' and poor students'.

The results of text analysis also show many merits of the question scaffolding teaching model. First of all, it can motivate students to do the self-assessment and peer-assessment to avoid mistakes and find other students' mistakes to correct in English compositions. Secondly, it can help students become more careful in writing to reduce more mistakes in English compositions. Thirdly, it helps students to pay more attention to the detail information and requirements in English writing.

5.2. Pedagogical Implications

From the data analysis of the present research, and based on the above findings of the study, some implications can be concluded for English writing teaching and learning.

Firstly, teaching plans and arrangements should be well prepared before class to meet students' needs. As questions are the main scaffolds in the English writing process, proper question design can't be too careful. Teachers should raise questions before writing are intended to provide information relevant to the topic and help students comprehend the title of the composition. What's more, teachers should pay attention to the organization of the activities. When the students are discussing in groups, teachers should walk around the classroom to ensure students are talking about the composition.

Secondly, teachers should change their role in English writing teaching. Teacher is not the leading role in class, but just a scaffold for students. Students are the center of the classroom and they should participate in the learning activities during the learning process. After finishing their compositions, teachers appeal students to do the self-assessment immediately and then do the peer-assessment with their partners. Once students can write English compositions independently, teachers should withdraw the scaffold gradually.

Thirdly, teachers should pay attention to the process of students' English writing. In the process of writing, teachers should give students proper scaffolding in time. After writing, teachers should guide students to do self-assessment and peer-assessment carefully before handing in compositions.

Last but not least, interest is the best teacher. Teachers should pay special attention to the poor students when scaffolding, because they are poor in English writing and almost have little interest in English writing. Teachers should raise more simple questions to attract poor students' attention and ask them to answer the questions to help them analyze the title of the composition. Interest comes from teachers' patient guidance when students encounter difficulty in writing. And interest can build up students' confidence in doing anything. A lasting interest will become a habit or hobby, which can inspire students to like to write English compositions. The more English compositions have they written, the higher score they will get.

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