An Empirical Study of Cultivating College Students' Dialectical Thinking Ability with WebQuest

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ABSTRACT: The thesis summarizes an empirical study of cultivating college students’ dialectical thinking ability with WebQuest mode through college English reading teaching. The study includes three steps, which are pre-test, experiment and post-test. The experiment information, which was obtained through two questionnaires in the test and interview with the participants, was processed with SPSS software. The conclusion is drawn in the end of the thesis.

1 PREFACE

Compared with the traditional teaching mode, which is transfer-accept mode, the information-based teaching modes stress on student-centered idea, and encourage students to analysis and process the raw study materials to discover and learn knowledge under the guide of teachers. These modes has certain advantages in cultivating of information literacy, autonomous learning ability, dialectical thinking ability and so on. WebQuest, one of the information-based modes, which has the characteristics of opening, speculative, demand students solve study problems through collecting, analyzing and processing resources through web. This mode is accommodated with China’s requirements of cultivation of College Students' critical thinking ability.

1.1 Introduction of WebQuest

A WebQuest is an inquiry-oriented lesson format in which most or all the information that learners work with comes from the web (WebQuest.org 2012). The mode was developed by Bernie Dodge at San Diego State University in February, 1995. WebQuest could be used for inquiry, cooperative learning using web resources. During the course real scene or task is presented to students, who are required to collect resources from the web, analysis and apply the resources to construct knowledge, solve problems and complete study task. WebQuest could make students learn how to use web resources to take inquiry and cooperative learning, processing uncertainty information, developing independent learning ability, cooperative ability and dialectical thinking ability and so on.

There are six essential components of a WebQuest that are used to structure the activity and organize students. They are: introduction, task, resources, process, evaluation and conclusion (Dodge 1997).

The introduction draws the students’ attention to the study topic and inspires them into action. The task is drawn from the introduction and sets out the goal. There is often a Focus Question that defines the task. The task needs to be based on Problem-Based Learning (PBL) and contain a messy problem to solve. Resources that are filtered by the teacher for avoiding blindly searching, most of which may be Internet links. The process is broken up into clearly described steps and may designate roles or perspectives to the learners. An evaluation is the guidelines for how students will be assessed. It is usually in a rubric. Evaluation rubrics come in many forms and rubrics designed by the teacher are the most authentic. A conclusion brings closure to the quest, addresses the answering of the Focus Question, and should challenge the learner to act upon what they have achieved within their local environment (webquestdirect.com.au 2016).

1.2 The importance of dialectical thinking ability

Engels pointed out: If a nation wants to stand in the peak of science, it cannot be without theoretical thinking (Engels, 1995). Dialectical thinking, a form of theoretical thinking, is a kind of thinking activity of understanding objective things using contradictory ideas of unity of opposites.

For a college student, the purpose of learning has two aspects, which are developing the ability and mastering the knowledge. The dialectical thinking ability plays a central role in these two aspects. Any professional knowledge system is a complex, dynamic integrated system and a learner could master the knowledge only through thinking and dynamically analysis knowledge from different points of view using dialectical thinking method. In the era of information explosion, knowledge updates quickly, the knowledge any person can grasp is
limited and easily obsoletes. A learner could not and does not need to master all knowledge, but could grasp the law of development of things and be comfortable in learning and using knowledge if he has good dialectical thinking ability.

1.3 The feasibility of using WebQuest to cultivate students' dialectical thinking ability in college English reading teaching

Dialectical thinking needs to grasp the detailed information and conduct a comprehensive and in-depth examination and thinking about the issue. WebQuest is just in agreement with this characteristics of dialectical thinking. WebQuest demand learners to solve problems independently or collaboratively through collecting and processing information from web. Dialectical thinking ability plays core-leading role in this course. Recognizing and filtering information and thinking about problems from different angles is just the activities of dialectical thinking. Learners taking learning activities with WebQuest mode could be well trained in cultivating dialectical thinking ability.

On the other hand, it is proper for WebQuest mode to be used in college English reading teaching to cultivate the students' dialectical thinking ability because of college English reading’s unique characteristics. During the course of English reading, all kinds of resources learners will be mobilized to analysis the reading material from different point of view using the idea of unity of opposites, and resolve problems with dynamic, comprehensive and evolving methods. This point is consistent with the characteristics of WebQuest and dialectical thinking, which were analyzed previously. Learners could learn more about the background information and other knowledge he does not know through web and dialectically evaluate them. It is feasible to develop students' dialectical thinking ability in college English reading teaching with WebQuest mode.

2 RESEARCH PROGRAM

2.1 Research object and teaching content

The object of the research is a class of grade two, Hunan University of Science and Technology, China. There are 65 students all together. Researcher select two units, which are Legal and Moral Implications of Cloning and Premarital Agreement, from New Horizons College English (Second Edition), a textbook used in many colleges of China. The content of these units is proper for the study for the reason that it is relatively easy to cause controversy about moral values and could initiative people to make a deep thinking in moral and legal aspects.

2.2 Research process design

The structure of the research is O1-X-O2 and in the absence of a control group, there was only one non-randomly selected experimental group. A pre-test was taken on the group and observed value of O1 was obtained. The X is an experimental variables applied on the research object and the observed value of O2 was obtained from the post-test. The difference of O1 and O2 were analyzed to determine the effect of the test. Pre and post tests were conducted in the way of questionnaire and interview and the results of the questionnaire were statistically analyzed by SPSS.

The experiment process is based on the six basic modules of WebQuest. Let’s take Legal and Moral Implications of Cloning as an example to illustrate the experimental process.

Firstly, in the part of introduction, the meaning and purpose of this study is introduced to students to stimulating their interest in learning. Secondly, students are told the general task and asked to be divided in groups. In the test, students are divided into 22 groups, each of which has 2 or 3 person. In every group, member 1 is responsible for collecting information about cloning such as landmark event related cloning or important meetings and major issues. Member 2 and 3 are responsible for collecting different views of legal and moral about cloning from international society. Thirdly, in the part of process, all members start to work on schedule. Then they discuss on the topic of cloning in group and every member could put forward his own view, which will be submitted to the leader of the group in the form of text materials afterwards. Then a report, which is about the situation of studying and has included all group members' material, will be written by the leader of the group. Fourthly, in the part of resources, some websites links about cloning are introduced and some requirements of needed resources are listed here such as all resources must be in English. Some strategies about resources inquiry are introduced here, also. Fifthly, in the part of evaluation, stand and rules of evaluation are given here. The last part is conclusion and some leaders will introduce the studying situation and their views to the class on behalf of the group.

2.3 Design of questionnaire and statistical analysis

Two parts, which are pre and post questionnaire, are included in the questionnaire survey. The purpose of the pre survey is to learn about the basic situation of students’ ability on such aspects as English reading, web resources collecting, dialectical thinking. The dialectical thinking ability will be tested as key point and 20 choice questions and 2 short-answer questions about this aspect are included in the questionnaire. The answers of these 20 choice questions are the same, which are “very much agree
“agree”, “not always”, “do not agree” and “Very disagree”.

The topics of the 2 short-answer questions are today’s controversial social issues with strong practical significance and close to college students’ life, such as “Are all official second-generations rely on competition of family background?” and “Is there no sunshine in ant tribe’s life?” Students are required to give answers in limited time having no references. Their answers will be graded from 1 to 5 according to Likert scale’s rule. The higher score means the stronger ability of dialectical thinking and vice versa.

The post questionnaire only test students’ dialectical thinking ability, including 20 choice questions that are same to the pre questionnaire and 2 different short-answer questions. The 2 short-answer questions are from real news events, for example “Mysore, India was hit by an elephant and one person was trampled to death”. The answer will be graded according Likert scale and high score means strong dialectical thinking ability, low score in the opposite.

The five options of 22 questions will be given 1 to 5 score, lower score means the participant’s thinking way and angle is relatively simple and view the problem from a static perspective, there are difficulties in the use of dialectical thinking on him. On the contrary, higher score means the participant has strong thinking dialectical ability. Independent sample T-test will be taken on these two tests and the result will be analysis and concluded.

3 ANALYSIS OF QUESTIONNAIRE AND INTERVIEW RESULTS

Pre questionnaire results show that most students think that their English reading ability is generally or relatively poor. They seldom read English articles at ordinary times and not pay enough attention on reading strategies. Their weak capacity of network data collecting also could be shown by the questionnaire. Most of the students are not familiar with web search technology and they seldom try to seek help from them when encountering problems.

The dialectical thinking ability of independent samples t-test data analysis results are shown in Figure 1 and figure 2. Figure 1, which are average values of two times measurement data of test class, shows the average score in the pre-test of the 65 students was 2.2147, and the average score in the post-test was 2.6189. The post-test was improved by about 0.4 points compared with the pre-test. Figure 2, which include independent sample test data of two times test, show the significance is 0.321 that is bigger than 0.05 not reaching a significant level and t is -11.187. The lower point and upper point of 95% Confidence interval of the difference are -0.47569 and -0.33271.It shows that the students’ dialectical thinking ability after training in WebQuest has been improved to a certain extent, but it has not reached a significant level.

Interview, which is mainly the conversation between the author and students, is to learn the students’ perceptions and feelings about the test. On the dialectical thinking ability, students' feedback mainly concentrated in the following aspects:

First, compared with the traditional teaching mode, WebQuest is more able to mobilize the enthusiasm of the learners, prompting learners to seriously consider the problem, seeking ways and means to solve the problems. Learners, under the traditional teaching pattern, are in the situation of passively accepting knowledge and have less chances to think initiatively. Even if there are learners willing to think initiatively about the problem, it is difficult for them to conduct a comprehensive in-depth thinking of the problem due to the constraints of various conditions, including resources, study habits, subjective initiative and environment atmosphere. However, rich network resources and good atmosphere are provided to Learners under WebQuest mode to encourage them to think initiatively and seek solution to the problems.

Secondly, WebQuest mode is conducive to students’ broaden their visions and change the Way of Thinking. Students are encourage to obey and be superstitious to the authority in China. Students, who are perceptions and attitudes towards things are affected by the authority of the media, teachers, and parents and so on, lack independent observation and thinking. Their way of thinking is relatively simple. The process of collaboration with the same team members is also a process of collision of different ideas and viewpoints. Thus learners are requested to change their way of thinking, observe and think about the problem to form an independent opinion.

![Figure 1: Two classes’ mean.](image1)

![Figure 2: Independent sample test data (part).](image2)
CONCLUSION

As a kind of information teaching mode, the significance of WebQuest lies not only providing more resources for teaching and learning, but rather providing the possibility of more efficiently cultivating high-quality personnel. The study took college English reading teaching as a platform and made some practical attempts in cultivating students’ dialectical thinking ability to provide a reference for improving teaching quality.

REFERENCES


