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Research Article

Constructing the Mode of Computer Supported Collaborative Learning in Food Science of Agriculture Research

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Abstract: In this study, we makes an attempt to find out the effect of applying Computer Supported Collaborative Learning to food science of agriculture research based on the Collaborative Learning Theory and the support of computer network technology. The mode of computer supported collaborative Learning in food science of agriculture research takes on far more advantages than the Product writing Approach, being beneficial to the development of students' writing competence.

Keywords: Computer supported collaborative learning, construct, food science of agriculture research, mode, writing competence

INTRODUCTION

As a productive skill, English Writing is a link of great importance in college English teaching as well as one of the significant skills in second language acquisition, but the present English writing teaching situation at home is not quite satisfactory (Stahl, 2000). There exist plenty of mistakes in students' writing compositions (Swain, 1995). For example, there appeared quite a number of grammatical mistakes in their writing essays (Atkinson, 2003). Furthermore, the Language does not meet the English habit and the discourse lacks logic, coherence and cohesion. Consequently, the weak English writing ability has already become the obstacle to the improvement of the comprehensive application ability of college students (Belisle, 1996). Hence, how to utilize the computer network technology combined with the modern learning theories to carry out the college English writing reform and improve the students' writing skill has become the most urgent task in college English teaching presently.

The product writing approach has contributed a lot to the English writing teaching in China. However, with the development of educational theories and modern educational technology and the change of cognitive view, because of the limitations of the product approach, it can no longer meet the requirements of pursuing knowledge of modern college students (Bloch, 2002). The traditional product writing approach focuses on the writing results rather than the writing process, neglecting the process of correcting mistakes. Moreover, it lacks the students-centered collaboration, mutual help and interaction, which restricts the writing quality (Pincas, 1982). In view of this, the research in the study combines the advantage of modern network technology with the advanced collaborative learning theories, trying to make up for the disadvantages mentioned above in order to improve the efficiency and teaching quality of college English writing (Warschauer, 1997). Computer Supported Collaborative Learning refers to the study which is carried out with the aid of Internet, Intranet and multi-media related technology based on collaborative theories. The network technology possesses the advantage of powerful information transmission and communicating media function, which provides the collaborative learning with the ideal technology support and implementing platform. The research results at home and abroad show that compared with the traditional learning, Computer Supported Collaborative Learning is superior in promoting the construction of language knowledge, enriching the target language and complicating the morphology and the syntax. The research in the study makes an attempt to apply the Computer Supported Collaborative Learning to food science of agriculture research and find out its effect and efficiency in improving food science of agriculture research quality.

In this study, we makes an attempt to find out the effect of applying Computer Supported Collaborative Learning to food science of agriculture research based on the Collaborative Learning Theory and the support of computer network technology. The mode of computer supported collaborative Learning in food science of agriculture research takes on far more advantages than the Product writing Approach, being beneficial to the development of students' writing competence.

METHODOLOGY

The theoretical foundation of the research:

Constructivism: According to the viewpoints of Constructivism represented by the psychologists Jean Piaget in Switzerland and Vygotsky in the former Soviet Union, study has social nature and knowledge is constructed through the communication and collaboration among the individuals. In the circumstance of foreign language learning, the modern advanced computer network technology supplies the theoretical hypothesis of realizing the constructivism with workable technological support. Therefore, during the process of learning, learners should learn to cooperate with others, learn from the experiences of other peers, share the information and learning resources in order to have a better understanding of the learning contents, perceive its essence and share the group wisdom so that they can realize the meaningful construction of learning contents. In addition, the process of collaboration enables students to keep rethinking his own thinking process, organize and regroup various concepts. In short, constructivism provides the reliable theoretical support for the food science of agriculture research conducted via the network technology-based environment.

Group dynamic theory: On the basis of the theory, success depends on "group dynamics", which means a kind of "energy resource" coming from the inside of the group. When a group of people are working hard for a common task, their different wisdom, knowledge structure, thinking pattern, cognitive style and strategy level can complement, by being united as one through collaboration, which can form immense energy and make success possible.

Classroom teaching technology theory: According to the theory, the three main factors determining the classroom study quality are task structure, incentive structure and authority structure. In the competitive incentive structure, the success of an individual means the failure of the others (Slavin, 1980), however, in the collaborative incentive structure, students have to depend on one another, therefore, only the success of each individual is a real success. Collaborative learning mainly takes advantage of hits positive incentive structure to stimulate and maintain learning activities.

Process writing theory: The product writing approach influences students' thinking, confidence and interest, consequently, this approach is not to the benefit of improving students' writing quality. While the process writing approach lays emphasis on the writing process, advocating "process" teaching approach. This theory contends that the writing task should be completed via interaction, sharing, negotiation and revision among peers and between learners and teachers. The great emphasis is placed on the central position of the students in the writing as explorer of the questions, solver, negotiator and active constructor. Teachers should act as persons who assign writing tasks, participants during the discussion, coordinators and feedback Raters. The roles of learners as authors, readers and judges can be changeable.

CONSTRUCTING THE MODE OF COMPUTED SUPPORTED COLLABORATIVE LEARNING IN COLLEGE ENGLISH WRITING TEACHING

The mode of computer supported collaborative learning in food science of agriculture research features utilizing the multimedia and the network as the teaching platform, which adopts the students-centered process writing approach, requiring the students to participate in the writing task in the form of groups and the division of work and coordination by sharing the related resources and group wisdom in order to accomplish the writing task.

In this mode teachers play the roles of instructors, participants and helpers. Their primary duty is to assign the writing task, introduce the writing strategies, divide the students into certain groups on the basis of the students' intelligence and non-intelligence factors, instruct and take part in discussion/evaluation and analysis, evaluate the final product, give certain feedbacks and interact with students via e-mails or blogs. Students are the centers of the whole teaching process, acting as the active participants, coordinator, explorers and solvers of questions, contributors of group wisdom and resources, active constructors of knowledge, whose main duty is to undertake the writing task, serve as the group roles, collect information and materials, join in evaluating, discuss the task, revise and complete the assigned writing tasks and hand in the final works. The teaching environment is mainly composed of the Internet, the Intranet and/or physical space. The teaching media consist of QQ Group of visual, voice frequency, BBS, blogs, e-mails, among which QQ groups are real-time online teaching or coordinating study media and BBS, blogs and e-mails are non real-time media. The mode is the description of the teaching process, the constituting elements and the interrelationships among them. The main teaching procedures in the mode are conducted as follows:

- The teachers assign the students to complete the writing tasks according to the teaching plans, introduce the writing strategies and then the students have to undertake the task.
- After receiving the writing task, the students have to understand the given writing topic/title. Of course, because of the difference of their intelligence, social experience, world outlook, etc. their understanding of the given topic is superficial and one-sided.
- At the stage of dividing the students into groups, the teachers should obey the rule of heterogeneous grouping by analyzing the intellectual factors and non-intellectual factors such as interest, motivation,

emotion, will, character, sex etc. In general, one group is usually made up of five or six students given the maximum of the limitation of each QQ video call quality. The man at the wheel of each group is assigned by the teacher for the first time and then the members of each group take their turns to be responsible for the group.

- The main task of constructing knowledge via collaboration is to concretize and abstract the task knowledge to promote the formation of common concepts. That is, the members in the group express their own understanding and opinions about the given writing topic so that they can have a better understanding about the topic via discussion and sharing the common learning resources in order to create the better condition for completing the given task.
- The members in each group talk with one another or negotiate via the QQ video or BBS, emails or blogs to share the group wisdom.
- Based on the directions of the given writing task and the prompts of the teacher and their common understanding about the task, the man at the wheel ask the members in the group to collect and upload the related writing materials and ask the members to hand in their first draft at a given time through e-mails or other channels.
- The members send the collected writing materials to each individual via emails or QQ in order to share the common resources within the given time.
- The communication and sharing of the writing materials enables the members to extend their horizons of thinking and enrich their understanding, on the basis of which the members finish the first draft and submit the first draft to the rest of the group. The members are required to read the drafts of other members carefully and make good preparation for the group analysis and discussion.
- The members in each group enter the QQ group chat room to face-to-face discuss and analyze the strengths and weaknesses ranging from the language to contents of their first drafts in English face to face via audio video. Then they have to point out the correcting measures.
- The evaluation, discussion and debate help the members to grasp the writing task well.
- The members are required to revise their first draft according to the group discussion results and correcting measures. In a computer technology network environment, the functions of shearing, pasting, copying, adding, error lookup and searing make the revision process more convenient.
- After revising the first draft, the members should hand in their final draft via emails and wait for the feedback of their teacher.
- After receiving the final draft of the students, the teacher should analyze and evaluate the final works of the students and give his feedback in time. In the meantime, the teacher posts the excellent works and the typical mistakes on the local area network BBS for the purpose of appreciating the excellent works and avoiding making the same mistakes again. Of course, the teacher should give his analysis about the excellent works. And the error makers' name is not to mention.
- The teachers and the students make non real-time communication, ask questions and answer questions via Blogs and emails.

CONCLUSION

Collaborative learning is beneficial to the construction of knowledge. The interaction and among students and between teachers and students and information resources sharing enable the students to enlarge their mind, grasp the writing task well, internalize their target language and writing skills, improve their knowledge structure, stimulate their learning motivation so that the language of their final works meets the English habit and the discourse possesses logic, coherence and cohesion. Secondly, the powerful support of the network technology provides a wealth of abundant information and writing resources and makes the communication and interaction between teachers and students more convenient so that students can gain full confidence and pleasure in their writing. Thirdly, the students-centered teaching mode supplies more exercising opportunities to improve the cognitive ability of the students.

Finally, the collaboration in the writing process makes the students play multiple roles to avoid making the same mistakes so that their final works are more readable, which makes the writing task more realizable and more communicative. What's more, the mode of computer supported collaborative learning in food science of agriculture research is conducive to developing the cooperation sense, changing the writing strategy consciousness to improve the writing competence. However, there exist plenty of shortcomings. For instance, the crowdedness of the Internet cause the poor quality of call and video, which has a negative influence on the mood and the discussion quality. Moreover, owing to the large number of groups, the teacher cannot guarantee to join in the discussion of each group and give timely instruction. But the advantages of this teaching mode outweigh its disadvantages; therefore, the mode of computer supported collaborative learning in food science of agriculture research has the significance of the popularization.

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