Teaching Effectiveness of Integrating Task-based Approach into Inorganic and Analytical Chemistry Course

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Abstract From the perspective of students, the effectiveness of task-based approach in Inorganic and Analytical Chemistry course were summarized. The strength and weak points of TBA were analyzed, and the specific suggestions for obtaining better effect were put forward. The result showed a satisfactory achievement and unexpected result in showing the effectiveness of this teaching model. Not only could this TBA enhance student’s overall knowledge of discipline but also cultivate students’ multi-dimensional competence; competence in searching literatures, communication and management, autonomous, co-operative and reflective learning, and competence in analyzing and problem-solving, as well as improving their language expression ability, and skills in using multi-media and internet technology into their academic course learning and research. The implication of this research on the classroom teaching practice will shed light on the future teaching reform of other courses in China.

Key words In-organic and Analytic Chemistry course, Task-based approach, Teaching reform

Inorganic and Analytic Chemistry is a fundamental core course for undergraduate students who are majoring in agriculture and life science. At present, traditional teaching method and multi-media method are widely adopted in teaching during the inorganic and analytic chemistry course in Northwest A&F University. Most traditional teaching methods are static and it largely depends on the observation of objects for experiment. Such teaching method is easy to understand. However, such teaching method emphasizes teacher’s role and ignores students’ subjective initiative. Although the application of multi-media education increases the information content, some subjects stayed on the electronic text and students barely wrote down notes[1-3]. The task-teaching method has been widely used in the teaching of English, law, and marketing subjects[3], but it is seldom used in the medical education and science subjects. From the perspective of students, the effectiveness of task-based approach in In-organic and Analytical Chemistry course were summarized. The strength and weak points of TBA were analyzed. The implication of this research on the classroom teaching practice will shed light on the future teaching reform of other courses in China.

1 Connotation of task-based language teaching method

Task-based language teaching method is a kind of new teaching method that focus on the cultivation of application and innovation ability[4]. This method is largely defined in this way, to consider objection as orientation, students as the center, and teacher as guidance so as to make full use of students’ ability through application of various teaching resources. The concrete procedures should go through three stages, namely autonomic learning, communication and interaction, and objection. The task-based language teaching method motivates students to finish work. Besides, this method changes the role of students and teachers, as well as the way students get knowledge.

2 Implementation of task-based language teaching method

2.1 Preparation of task The task-based language teaching method is carried out in the Organic and Analytical Chemistry. Teachers first introduced the definition, task, category and importance of analytical chemistry, and then explained the objective of task teaching, ways to complete task and evaluation standard. In order to help students finish the task, teachers presented students ways to search documents and used multi-media to demonstrate ways to search document.

2.2 Task link

2.2.1 Task The object is to study the application of chemistry in agricultural science. The concrete measure includes plant science, animal science, food science and environment protection. Each class was divided into four groups and in each group there were fifteen students. The monitor of each group was responsible for the work. The group method resolved the contradiction of task-based language teaching method, for it is easy to discuss among few people.

2.2.2 Process to finish the task. Students discuss the way to finish task in accordance with teachers’ demand and teachers would provide guidance and would supervise them.

2.2.3 Demonstration of results. Each group report the results to the class in PPT form. After report, other students and teachers
would make a judgment and put forward their opinions. The students’ evaluation can stimulate students’ enthusiasm and can ensure that every one is participating into this link.

2.3 Evaluation Each group would revise and improve the PPT after getting feedback from others. Each monitor would hand in the evaluation of group members to teacher as the reference to usual results. In the end, teachers would summarize the entire task and give reward to the team who finished the task the best.

3 Effects of task-based language teaching method

3.1 Effects of task-based language teaching method in inorganic and analytical chemistry class Such teaching activity is the trial to apply task-based language teaching method in inorganic and analytical chemistry class, which reflects the changes of attention from books to students, from teacher-oriented to students-oriented, from knowledge-based to capacity-based. Because this method is new to students, they are enthusiastic and curious about it. Firstly, this method makes students learn more about analytical chemistry, which in return arouses students’ interest in analytical chemistry. To students who do not major in chemistry, this method contributes to the cultivation of interest in chemistry. Secondly, through task-teaching method, students learn the way to search documents. Before the implementation of the task, network, baidu and google would slip out from students’ mouth when they are asked how to find documents. Now, they are clear that there are other ways to find documents they need, such as books, papers, thesis, internet and database. Students have learned to use key words, author, and subject to find materials they need through various kinds of database. Thirdly, the task-based teaching method improves students ability to study, organize, write and make PPT, as well as command of langue and power of expression. Fourthly, during this progress, students become more cooperative with their classmates.

3.2 Problems in task-based language teaching method in the application of inorganic and analytical chemistry teaching Although the task-based language teaching method achieves outstanding effects in the education of inorganic and analytical chemistry, there are still problems to be improved. Firstly, some students are not enthusiastic in task-based teaching form and treat it as extracurricular work. Secondly, the division of work in this teaching form is too mechanical. By assigning work to certain students, each student can be only responsible to his work, which restrains the improvement in other aspects. Therefore, teachers should encourage students to join other groups after finishing his work. Thirdly, some groups are not good at communication. The entire task is finished by team leaders and some competitive teammates. Fourthly, some students pay much attention to PPT and the performance of speaker, while neglect the subject of analytical chemistry in agricultural science. Hence, it is advisable to add question procedure at the end of report, or to ask students to conclude their achievements in either verbal or written form.

4 Suggestions on the application of task-based language teaching method in inorganic and analytical chemistry teaching

4.1 Close connection of task-based teaching method and examine system The examine items in present task-based teaching method isn’t concrete, so students are worried about their performance not being appreciated by teachers. Freshmen haven’t changed their ideas of examination and what they care about is score. Therefore, during the implementation of such teaching method, it is suggested to consider students’ performance into the final score.

4.2 Teachers’ guidance Students’ knowledge is built up under teachers’ guidance. Teachers should follow students’ performance and provide supervision. When students meet problems, teachers are supposed to help them figure out. After students finishing the task, teachers would make comments and point out their shortcomings. On the other hand, students are advised to report to teachers their achievements now and then so as to get teachers’ guidance. Only through cooperation among teachers and students can the objection of task-based teaching method be realized.

4.3 Organic integration of task teaching method, traditional teaching method and multi-media teaching method Traditional teaching method and multi-media teaching method are two teaching methods that are widely applied in inorganic and analytical chemistry teaching. Traditional teaching method depends on teachers’ verbal and written langue, which is easy to understand. However, it outputs little information and emphasizes teachers’ leading role. Though the application of multi-media education enriches the subject, some courseware stay in the computer and can not get into students’ mind, for students would not need to take notes and the class is dull. The application of task-based language teaching method gets wide attention from students and improves students’ ability to make PPT and to analyze problems. The task-based language teaching method can not replace traditional teaching method and multi-media teaching method, but instead it makes up the shortcomings in traditional teaching method and multi-media teaching method. As a kind of new teaching method, there are few studies on the application of task-based language teaching method in science teaching and there is room to improve.

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compulsory education stage. For example, in South Korea and Japan, schools in compulsory education stage in remote villages or in Seoul and Tokyo share almost the same hardware facilities and teachers’ level[17].

2.3 Providing teachers with development space and fully motivating their working enthusiasm Feasible incentive policies should be formulated to attract and keep excellent teachers in rural area, such as establishing teaching achievement prize for rural teachers with high qualities and strong teaching ability and providing no-interest housing loan for young teachers who earn low salaries and do not have personal houses. For subjects lacking teachers, high salaries should be offered in order to attract outstanding college graduates or in-service teachers to work in rural area, being engaged in teaching.

Training for rural teachers should be strengthened and schoolwork burden should be reduced. Firstly, role of various education training institutions should be fully played and the open training system with internal training strength of educational administration as the subject and participated by various training institutions in society should be established to effectively promote teachers’ training. Meanwhile, the effect of current training institutions should be fully exerted. Secondly, establishment of training team should be strengthened. Teachers should be supported and encouraged to further their education and improve theoretical knowledge to better adapt to the new requirements of teaching reform. Communication among teachers in different schools should be encouraged and strengthened and various teaching resources should be fully utilized to form convenient, flexible and effective cooperation mechanism. Lastly, training methods and contents should be enhanced. According to the actual conditions of schools and teachers, various training methods should be actively explored, such as in-service training, customized training as well as off-job training. Long-distance training should be carried out with modern educational technology, making it possible for most rural teachers to participate in teaching theory and quality training.

3 Conclusions
Education is of fundamental importance to the fulfillment of our great long-range mission. To achieve the balanced development of compulsory education between urban and rural areas is a conspicuous issue which affects the education of children in rural area and the enhancement of comprehensive quality of the Chinese nation. Therefore, fairness of compulsory education is the main part of educational equity. Compulsory education involves the equity of educational rights and educational opportunities. Compulsory education tests the ruling idea and decision wisdom of governments at all levels and evaluates their social credit. The government should ensure the required resources for compulsory education in society, strengthen the adjustment of inner allocation, allocation in urban and rural areas as well as regional allocation of national education resources, distribute educational resources equally, guarantee the balanced development of compulsory education and provide equal educational opportunities for every student.

References

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