An Empirical Research on the Development of Students' Multiple Intelligences Based on the System of Diverse Assessment for College English Class

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Abstract—**This paper, first of all, lists some problems we are facing in assessing students' performance for college English class, and then addresses three interrelated propositions. First, a valid and reliable multiple assessment system for the multiple intelligences development should be built. Second, the teacher can make use of it to create multiple intelligences instruction. Third, this system can be used by teachers and students to promote the use of strength–based learning activities to enhance instructional practice as well as personal development. Evidence gathered from questionnaires and conferences is supportive of these three propositions.**

Keywords—relationship; multiple assessment system; multiple intelligences development; teaching experiment

I. INTRODUCTION

The development of college students' multiple intelligences, which includes linguistic intelligence, cooperative intelligence, cultural intelligence, and communicative intelligence etc. in college English class is one of the major teaching goals. The implementation of the teaching goals is indispensable to the building of the system of diverse assessment, which covers the assessment content, the assessment tools, and the assessment subject (Qu, 2009). What is the relationship between the development of college students' multiple intelligences and the system of diverse assessment? This is what the research tries to focus on.

II. REVIEW OF THE TRADITIONAL TEACHING ASSESSMENT SYSTEM FOR COLLEGE ENGLISH CLASS

The traditional teaching assessment system for college English class is based on the Behaviorism Theory and the Structural linguistics Theory. The former believes that human behavior is an indispensable part of human life, and that the educational goal is to transmit the knowledge of the world from the teacher to the students, and that learning is a process of accepting what the teacher says. Under the guidelines of these theories, the traditional teaching assessment system is characterized as follows: what is to be assessed lays special emphasis on linguistic intelligence; test is the major way to assess students' performance, and the teacher is playing the leading role in the course of

assessment. The subsequent problem is that the focus of teaching assessment is only on linguistic intelligence, rather than on other intelligences, such as cooperative intelligence, interpersonal intelligence, intrapersonal intelligence, and self-cognitive ability. This situation needs to be changed.

III. ASSUMPTION

Teaching assessment systems play an important role in helping teachers to understand what the students think and what the students do while also enhancing students' intelligences development. In the book Teaching What Matters Most, Richard W. Strong, Harvey F. Silver, and Mathew J. Perini (2001) see assessment as both a window and a ladder. As a window, assessment "reveals how students are thinking," and as a ladder assessment "helps both the teacher and student determine which way is up." Assessment helps teachers to "understand how our students think, what interests and learning styles provoke and deepen their thoughts, and what intelligences attract their attention and their understanding." "Assessment determines how close to or how far from a given standard our students' performances are, and what gaps in content, weaknesses, and skills need to be addressed to improve performance." As a result, it is an important job to build an assessment system different from the traditional one.

The Multiple Intelligences Theory opens a window for teachers to review the traditional assessment system and strive to build a multiple assessment system. Gardner views intelligence as an integration of linguistic intelligence, mathematical and logical intelligence, interpersonal intelligence, intrapersonal intelligence, musical intelligence, spatial intelligence, naturalist intelligence, and bodily-kinesthetic intelligence. Gardner's theory argues that students will be better served by a broader vision of education, wherein teachers use different methodologies, exercises, and activities to reach all students, not just those who excel at linguistic and logical intelligence. These intelligences appear in everybody in different ways and different intensities, which make a person's intelligence different from others. Different people might be good at a particular intelligence in learning. The MI Theory breaks the traditional idea that schools should put emphasis on the development of logical

intelligence and linguistic intelligence. What the students show in classroom activities is not a single intelligence, but the comprehensive embodiment of multiple intelligences. As far as assessment system is concerned, the MI Theory maintains that the focus of assessment should be on the development of student's multiple intelligences. The multiple assessment system for College English class in China, based on the development of students' English language intelligence, focuses on the improvement of student's intelligences like cooperation, creativity, self-reflection, spatial etc.

Is there any relationship between the development of students' multiple intelligences and the multiple assessment system?

From 2015 to 2017, I conducted a two-year classroom experiment. The questionnaires and conferences with students prove that there is a close relationship between them. The following is what I did.

IV. AN EMPIRICAL STUDY

A. Choosing Experiment Objects

Choose 40 second year students from the Department of Computer Science as the research objects. These students' examination scores were lower when they attended the college. Their linguistic intelligence and other intelligences like cooperation, creativity need to be improved.

B. Grouping Experiment Class

Based on the grouping principle of "Heterogeneous in one group, the homogeneity among the groups," each group is formed in a diverse way. Eight relatively stable study groups were set up with each group having 5 members.

C. Orienting the Roles of the Teacher and Students in the Class

Students should be as participants, communicators, learners, explorer, problem-solvers, and the teacher acts as a helper, facilitator, adviser, and guide.

Choose the unit "Understanding Science" as an example to present the procedures of teaching experiment.

D. Designing the Assessment Goals or Contents

By the end of this unit, students will be able to use at least ten words from the unit vocabulary to make a short play and present it in the class; have a better understanding of the usage of 82 words and phrases, as well as the structures like "as many as / as much as / and as + be + p.p."; grasp the expository writing skills and write an expository composition with the title My Favorite Scientist; ask and answer questions regarding the unit, as well as the outside reading materials related to the unit; construct a mind map and a group portfolio, perform a short drama, and complete a debate; self-reflect their learning process and outcomes by writing journals; make a study plan and a study strategy to complete learning tasks of the unit.

E. Defining Assessment Tools

Test paper: used to test students' vocabulary skills. Mind map: used to assess the cognition power of vocabulary and the text understanding; students' creativity, imagination, cooperation etc. Debate: used to assess students' cooperation, bodily-kinesthetic intelligence, and linguistic intelligence. Oral presentation: used to assess students' linguistic intelligence, especially oral spoken English.

Portfolio: used to use samples from a range of students' work, such as writings, drawings, notes, extracts from projects, and performances on their tests to assess their linguistic intelligence (mainly writing), creativity, cooperation etc. Questionnaire: used to collect the data of students' learning psychology and learning behavior. Classroom-based observation: used to assess students' performances, especially participation in group activities, cooperation with others, etc. Conferences and interview: used to assess students' learning process, strategies and approaches that they use in the performance of language-related tasks. Journals: used to assess what the students have learned by reflecting their learning process through writing.

F. Building Rubrics

Build rubrics for mind maps, portfolio, debate, expository writing, and oral presentation.

G. Designing a Test Paper and a Questionnaire

The test paper contains vocabulary, grammar, structures, antonyms, word-building, etc. The questionnaire is concerned with the relationships between students' multiple intelligences development and multiple assessment system.

H. Designing Autonomous Learning Tasks for Students

(1) Make a plan for group study and a strategy of study.

(2) Choose at least 10 words from the unit vocabulary and make a short play.

(3) Discuss the topics based on the text:

In what way have science and technology changed the world we live in? Give examples.

What is your attitude towards science? Is science a good or bad thing and in what way in what way?

What can be done to ensure that the public can make informed decisions about the changes science and technology will bring about?

Students read the text, and answer the questions. (omitted)

(4) Make a mind map based on Science and Our Life. Then, summarize the text based on the mind map and the three topics given above.

(5) Choose one of the two topics: (1) Science is a good thing, or (2) Science is a bad thing, discuss with group members and then debate in the class.

(6) Read Writing Strategy: How to Write an Expository Essay and finish a writing of an expository composition with the title My Favorite Scientist.

(7) Construct a group portfolio.

I. Assessment

(1) Vocabulary test: students finish the test at a given time.

(2) Play presentation: each group presents a short play. The teacher and other groups make an assessment.

(3) Topic presentation: each group presents one of the three topics given before class. The teacher, with the students, makes an assessment.

(4) Question and answer: teacher and students exchange questions.

(5) Mind map presentation: each group shows its mind map of *Science and Our Life* simultaneously in class, and then selects a representative to explain it. The teacher and the students make an assessment.

(6) Classroom debate: two groups represent their ideas. The teacher and the students make an assessment.

(7) Composition presentation: the teacher explains the main points of expository writing in the class. First of all, all the group members read their compositions, and then single out one excellent to show before class. Teachers and students assess.

(8) Students' self-reflection: students fill in a self-reflection sheet.

(9) Questionnaire: students complete questionnaires in class.

(10) Conferences and interview: the teacher holds an informal discussion, and interviews students in groups or individually.

J. Gathering and Putting Information in Order

According to the assessment goal, the teacher has to gather the information needed to assess students' performance in English class.

As far as the students' linguistics intelligence is concerned, the information to be gathered should be as follows:

(1)Test scores; (2) Short play assessment rubric; (3) Group debate assessment rubric; (4) Topics presentation; (5) Exchanges of question and answer record; (6) Mind map assessment rubric; (7) Composition assessment rubric.

As for the cooperation, the information to be collected should be:(1) Groups debate;(2) Mind map construction; (3) Short play assessment rubric; (4) Oral presentation;

In regards to self-reflection, the information to be collected should be: (1) Self-reflection sheet; (2) Conferences and interview record; (3) Questionnaire; (4) Students' journals;

In regards to learner autonomy, the information to be collected should be: (1) Self-study learning plan and strategy; (2) Group learning goals; (3) Access to learning materials, such as notes; (4)Use of reference books;

In regards to interpersonal intelligence, the information to be collected should be: (1) roles in group study; (2) frequency of participation in group activities;

In regards to creativity (creative idea and works), the information to be collected should be: (1) mind map; (2) debate; (3) topics discussion;

K. Information Analysis

Based on the information gathered, the teacher and students work together to make an intensive analysis of the information collected.

L. Information Feedback

After the information analysis is over, the teacher gives feedback to each student, each group, and the whole class. The purpose is to find out what the students should be improved, impel them to adjust their study strategies, help them to improve their learning methods, and achieve their learning goals.

Feedback should consist of the combination of quality and quantity. The individual's grade ranking in the class reflects the quality of their acquired knowledge in the given time period.

V. EXPERIMENTAL RESULTS

A. Questionnaire

The questionnaire involves the students' recognition of the multiple assessment system, students' multiple intelligences development, and the relationship between the multiple assessment system and the students' multiple intelligences development. Nearly 91% of students have recognized the multiple assessment system and hold a positive attitude to its application in the English classroom. As far as the relationships between the multiple assessment system and the students' multiple intelligences development, 89.5% of students say they either "agree" or "agree very much" with the system. 83.5% of students agree on the idea that the multiple assessment system can develop their multiple intelligences. As for the idea that the multiple assessment system can enhance cooperation, 86.2% of students express "approval." As for the relationships between the multiple assessment system and the linguistic intelligence development, 88.1% of college students believe the multiple assessment system involves them more in class activities. They show great interest and enthusiasm in activities like oral presentation, role play, and debate, which are high promotions to their spoken English and writing level. The group sets a goal, a strategy, and a plan, and uses self-control and self- reflection, in order to improve their independent learning abilities. 84.8% of students either "agree" or "agree very much" with this.

B. *Conferences and Interview*

Teacher interviews students individually and in groups.

Teacher: What do you think of the multiple assessment system?

Student A: The multiple assessment system is an open system, which embodies the openness in what is to be assessed, how evaluation is to be done.

Student B: This system can help us to develop our abilities in an all-round way.

Student C: It gives us the right to self-assess and peer-assess, which is better than what was done only by the teacher assessment.

Student D: On what to assess, it involves not only linguistics intelligence but also other intelligences.

Teacher: Compared with the traditional assessment system, after we introduced this new system to our class, what is the greatest change in what you are doing and what you are thinking?

Student A: I am enthusiastic about that I am able to participate in the classroom activities. I used to be inactive answering questions or presenting my work, because the focus of assessment was only on the master of the language skills, not on our participation, cooperation, etc. I think it necessary for me to be active in class.

Student B: I used to be an audience in the classroom when I was in high school. I seldom had opportunity to accomplish the learning task through cooperation. The multiple assessment system provides us more chances to participate in the classroom activities, such as collaboratively constructing a portfolio and making a mind map. Through cooperation, I find more joy in the creative work.

Student C: The multiple assessment system changes my role from knowledge receiver to a knowledge explorer, I like building a mind map and a portfolio with my classmates. I like thinking in different ways.

Teacher: Does the multiple assessment system promote your intelligence in an all-round way?

Student A: I have learned how to make a study plan, and how to make a self-reflection.

Student B: Class activities like short plays, oral presentation, exchange of questions and answers, topic debate, and mind map presentation, really provide us more chances to speak English and write in English. As a result, our linguistic intelligence has been improved.

Student C: In the process of building the mind map of *Science and Our Life*, we put our brain together and tried to straighten out the problems, which is useful to improve our cooperation .The construction of mind map really helps us to have a better understanding of what we have learned, and most importantly, it can stimulate our imagination and creativity.

VI. VERIFICATION OF THE TEACHING EXPERIMENT

Evidence from the questionnaires, conferences, and interviews with the students, during the past two-year teaching experiment, is supportive of the relationships between the students' development in multiple intelligences and the multiple teaching assessment system.

VII. CONCLUSION

The intent of this study was to explore the relationship between the college students' multiple intelligences and the system of diverse assessment. Throughout the experimental study, we found that there is a close link between them, which is supportive of the three propositions we proposed before the research. The research has given a light to college English teaching, that is, the teacher should make use of the system of diverse assessment to create multiple intelligences instruction to promote the use of strength-based learning activities to enhance instructional practice as well as personal development.

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