RESEARCH ARTICLE

A PRELIMINARY RESEARCH ON MULTIPLE INTELLIGENCES THEORY'S EFFECTS ON TRANSFORMING TRADITIONAL EXTENSIVE ENGLISH READING TEACHING METHODS IN CHINA'S COLLEGES

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ABSTRACT

This paper, based on Gardner's theory, tries to reveal college students' intelligence preferences in reading comprehension and aims to explore Multiple Intelligence (MI)'s effect on the transformation of traditional extensive English reading teaching methods. To achieve the goal, teachers have to overcome traditional views and change teaching methods or styles to meet the needs of reading practice, for there are some disadvantages in traditional way of reading teaching. It is important because teaching affects learning styles and reading ability is a key element of one's overall qualities. With the help of quantitative and qualitative research methods, the experiment collects the reliable data to smooth the way of the study. The paper points out that MI theory's influence on the transformation of EFL extensive reading-teaching methods proves to be positive. It also holds that to reform the traditional reading teaching methods does not mean to abandon all of it, or to teach in its opposite ways. As for the EFL reading class, special attention should be paid to linguistic intelligence, not teach all concepts of subjects using all of the intelligences. And the assessment is likely to "elicit a student's full repertoire of skills and yield information that is useful for subsequent advice and placement" (Gardner, 1993:178). Therefore attention should be given to performance-based and task-based language testing in which students experience real-world tasks in the target language (Norris, 2000). To realize the successful transformation of reading teaching methods, teachers should team up with colleagues so that they can increase both their own and the students' educational options.

Key words: Multiple Intelligence (MI) ; reading; teaching Methods; transform

INTRODUCTION

Since EFL reading carries great weight in foreign language teaching, great efforts have been exerted to improve students' reading ability. And a good understanding of how students learn and how the teachers teach becomes a key point in the changing society. Teachers are required to change their teaching styles to

meet the needs of reading teaching. The teacher's role is changing. To improve the quality of reading teaching, four concrete problems should be solved. The first one is to transform the EFL reading teaching methods, which is essential to other transformations of reading teaching. In this respect, it calls for bottom-up model's integration with the top-down model and schema theory. The second one is to clarify the relationship between intensive reading and extensive reading. As this paper intends to explore an effective way to teach extensive English reading for non-English majors, it is necessary to make the relationship clear. In a word, intensive reading can be characterized as a slow, detailed reading process, but extensive reading is a fast, general reading process. The third thing to do is to complement proper background knowledge. The fourth is to put emphasis on the instruction on reading strategies and reading skills.

In order to achieve this transformation, Multiple intelligences (MI) theory proposed by Howard Gardner was introduced. In Gardner's definition, "Intelligence is a bio-psychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture"(Gardner, 1999a: 34). Gardner identified seven intelligences (1983) and has since added an eighth (1995, 1999a). According to Gardner, each person is unique and has a blend of intelligences (1999:45) namely linguistic, logical/mathematical, spatial, bodily/kinesthetic, interpersonal, intra-personal and naturalist intelligences. Gardner's discovery of Multiple Intelligences is a dynamic one and the list is not to be final or exhaustive. The point is not the exact number of intelligences, but the plurality of the intellect (Christison, 1998). *Gardner's proposal of MI theory has resulted in educator's change of focus in research. Compared with other fields, research on the application of MI theory to EFL program is sparse. Generally speaking, the research could be classified into two categories (Feng Ruimin, 2004): (1), Educators (e.g. Christopher, 1997) use survey technique to improve students' awareness of their MI profiles; (2) educators (e.g. Tucker, 1994; Smagorinsky, 1994) adopt a qualitative approach to delve in the influence of learner's MI profile on their second language learning. It has served as a rallying point for a reconsideration of educational practice of the last century.

This research intends to conduct surveys and experiment study to explore implementation of Multiple Intelligences theory in reforming the existing EFL extensive reading teaching model. If research result is positive, it will have great practical significance to EFL extensive reading for non-English majors. To conduct this research, quantitative and qualitative methods should be used. As for the quantitative method, a combination of data collection techniques is employed, including questionnaires and collection of students' test scores. As for the qualitative research methods, the researcher also conducts interviews with the participants in class, asking them their attitudes, interests and habits towards reading Text B&C. At the same time, the researcher does simple classroom observation for multiple intelligence inventory can only provide clues to various intelligences. The single best tool for assessing students' multiple intelligence, however, is probably one readily available to all of us: simple observation (Armstrong, 2000:37). Valuable information and data in this paper were collected from classroom observations.

The Current Situation of EFL Reading teaching in China's colleges

Since EFL reading carries great weight in foreign language teaching, great efforts have been exerted to improve students' reading ability. And a good understanding of how students learn and how the teachers teach becomes a key point in the changing society. Teachers are required to change their teaching styles to meet the needs of reading teaching. The teacher's role is changing. No longer can teachers expect to be fountains of wisdom and convey knowledge to passive students. Rote learning of skills and total reliance on the textbook are out of step in the information age and higher-order thinking. To improve the quality of reading teaching, four concrete problems should be solved: the necessity of changing teaching methods, the necessity of clarifying the relationship between intensive reading and extensive reading, the necessity of complementing proper background knowledge and the Necessity of the Instruction on Reading Strategies and Reading Skills. How can the educators transform the existed teaching methods reasonably? How can the educators effectively involve proper cultural knowledge and reading skills into teaching process? Howard Gardner's theory of Multiple Intelligences (MI) is worth mentioning. MI can provide a new and comprehensive

way to apply these reading skills more effectively. This theory can act as a bridge to successful EFL reading teaching.

Theoretical background

Howard Gardner, Professor of Education and Co-Director of Project Zero at the Harvard Graduate School of Education, put forward the MI theory in 1983. The theory first swept the worlds of education, cognitive science and developmental psychology with the publication of his treatise, *Frames of Mind*. Traditionally, intelligence is defined as a uniform cognitive capacity people are born with. This capacity can be easily measured by short-answer tests. Many educators, researchers, students and parents have long rejected multiple choices testing as a measure of intelligence. Traditional academic intelligence is not totally necessary and in many cases it is clearly not sufficient. Multiple intelligence theory has served as a rallying point for a reconsideration of educational practice of the last century. MI challenged traditional beliefs in the fields of education and cognitive sciences. In Gardner's definition, "Intelligence is a bio-psychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture"(Gardner, 1999a: 34). *He endeavored to define intelligence in a much broader way than psychometricians.

Gardner identified seven intelligences (1983) and has since added an eighth (1995, 1999a). The list is not meant to be final or exhaustive. The point is not the exact number of intelligences, but simply the plurality of the intellect. Each person has raw biological potential. We differ in the particular intelligence profiles with which we are born and the ways in which we develop them.

The following section summarizes descriptions and contains quotations of the eight intelligences from Gardner's books *Frame of Minds* (1983) and *Intelligence Reframed* (1999).*

Linguistic intelligence allows individual to communicate and make sense of the world through language. Poets exemplify this intelligence in its mature form. Students who enjoy playing with rhymes, who pun, who always have a story to tell, who quickly acquire other language------including sign language------all exhibit linguistic intelligence.

Logical-mathematical intelligence enables individuals to use and appreciate abstract relations. Scientists, mathematicians, and philosophers all rely on this intelligence. So do the students who "live" baseball statistics or who carefully analyze the components of problems------either personal or school-related------before systematically testing solutions.

Spatial intelligence makes it possible for people to perceive visual or spatial information, to transform this information, and to recreate visual images from memory. Well-developed spatial capacities are needed for the work of architects, sculptors, and engineers. The students who turn first to the graphs, charts, and pictures in their textbooks, who like to "web" their ideas before writing a paper, and who fill the blank space around their notes with intricate patterns are also using their spatial intelligence. While usually tied to the visual modality, individuals who are visually impaired can also exercise spatial intelligence to a high level.

Bodily-kinesthetic intelligence allows individuals to use all or part of the body to create products or solve problems. Athletes, surgeons, dancers, choreographers, and crafts people all use bodily-kinesthetic intelligence. The capacity is also evident in students who relish gym class and school dances, who prefer to carry out class projects by making models rather than writing reports, and who toss crumbled paper with frequently and accuracy into wastebaskets across the room.

Musical intelligence allows people to create, communicate, and understand meanings made out of sound. While composers and instrumentalists clearly exhibit this intelligence, so do the students who seem particularly attracted by the birds singing outside the classroom window or who constantly tap out intricate rhythms on the desk with their pencils.

Interpersonal intelligence enables individuals to recognize and make distinctions about others' feelings and intentions. Teachers, parents, politicians, psychologists and salespeople rely on interpersonal intelligence. Students exhibit this intelligence when they thrive on small-group work, when they notice and react to the moods of their friends and classmates, and when they tactfully convince the teacher of their need for extra time to complete the homework assignment.

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Intra-personal intelligence helps individuals to distinguish among their own feelings, to build accurate mental models of themselves, and to draw on the models to make decisions about their lives. Although it is difficult to assess who has this capacity and to what degree, evidence can be sought in students' uses of their other intelligence------how well they seem to be capitalizing on their strengths, how cognizant they are of their weaknesses, and how thoughtful they are about the decisions and choices they made.

Naturalist intelligence allows people to distinguish among, classify, and use features of the environment. Farmers, gardeners, botanists, geologists, florists, and archaeologists all exhibit this intelligence, as do students who can name and describe the features of every make of car around them.

Apart from the above intelligences, Gardner proposed Existential Intelligence as a candidate, which refers to be the human inclination to ask very basic questions about existence. However, it lacks good brain evidence on its existence in the nervous system. After further experimental tests, he made the decision not to add it in the list. Rather he took it as a semi-intelligence "at least for now", "At most, I am willing, Fellini-style, to joke about 8 1/2 intelligences."(1999:66). Gardner's discovery of Multiple Intelligences is a dynamic one and the list is not to be final or exhaustive. The point is not the exact number of intelligences, but the plurality of the intellect (Christison, 1998).

Methods

During the term from September 2013 to January 2014, a research project was undertaken to explore the effects of MI on the transformation of traditional EFL extensive reading teaching methods. The research follows quantitative and qualitative designs aiming to investigate the practical application and significance of MI theory in EFL reading class.

The Experimental Study

The experimental study is about the process of specific application and the significance of using MI in English reading class. It is done with one class of 43 students in Shandong Economic University. This chapter briefly describes the research design in the following aspects: objectives of the study, subjects involved, methods, data-collection instruments and designed teaching procedures.

Participants

The students involved in the experimental group were 43 sophomores of Shandong Economic University. They are composed of 28 male students and 15 female students from Class 2, Information Technology Major. These students are going to attend CET 4 Examination in June 2006. In terms of English proficiency, they are almost at the same level. As the experimental group, students from Information Technology Major should be taught with the help of MI theory. The researcher chooses the Texts B& C in the third volume of the book of *21st Century College English* which is their teaching textbook as research material. Text B aims to provide a systematic knowledge about reading skills and C is complementary reading material. Both B and C belong to extensive reading and fit for the subjects' English levels.

Data Collection

The study is conducted mainly using quantitative research methods. A combination of data collection techniques is employed, including questionnaires and collection of students' test scores. As for the qualitative research methods, the researcher also conducts interviews with the participants in class, asking them their attitudes, interests and habits towards reading Text B&C. The single best tool for assessing students' multiple intelligence, however, is probably one readily available to all of us: simple observation (Armstrong, 2000:37). Valuable information and data in this paper were collected from classroom observations. Consequently, the researcher does simple classroom observation for multiple intelligence inventory can only provide clues to various intelligences.

Procedures

According to the conventions of the teaching practice, Text B should take up no more than 90 minutes and Text C is not included in classroom. Since there is no precise requirement on Text C, students seldom read it after class. In this experimental study, the researcher gave 90 minutes to extensive reading, 70 minutes for Text B and 20 minutes for reviewing Text C. the experimental class was organized in MI theory and various

activities were designed based on students' multiple intelligences. The students' participation, interest in English learning, results in exercises, grade of tests in both classes were recorded to make comparison.

Preparing Stages

At the beginning of study, the students in experimental class were asked to do three questionnaires. The first one was the pretest about students' extensive English reading habits, such as their learning interest, attitude. The second one was to check reader autonomy. The third one is to check subjects' multiple intelligences. Aside from the 3 questionnaires, a brief introduction should be given to the students. At the end of experimental study, the questionnaires about students' extensive reading habits and autonomy were done in experimental class once again to compare the changes of students' habits, interest and attitude in English reading after treatment. Then the researcher analyzes the questionnaire about MI and divides the students in experimental class into several groups according to students' intelligence combination: students with strong linguistic intelligence; students with strong logical-mathematic intelligence; students with strong spatial, students with strong bodily-kinesthetic intelligences, students with strong musical intelligences, students with strong interpersonal intelligence and students with strong intra-personal intelligences. As for the particular study, the number of MI groups can be reduced according to actual situation in the experimental class. In addition, there was a questionnaire for the researcher to check her intelligence profile. Only when the instructor has a clear idea about her own multiple intelligences, can she monitor the classroom activities properly and make up for her weak intelligences accordingly. During the process of study, the interviews and the continuous assessments were conducted, too.

Implementation Stage

According to the analysis of 43 students' MI in experimental class, the researcher divided the students in experiment class into three groups in the light of the students' intelligence combination: visual readers, auditory readers and bodily-kinesthetic readers. The division of groups is favorable for organizing class activities. Sometimes learning activities are similar to the ones used in traditional class.

In order to help the English teachers gain a better understanding about how MI theory applies to classroom reading teaching combined with the description in chapter 4 about various teaching methods and activities, one more referential teaching plan on Text

This questionnaire was done in the experimental class (43 students) in ten minutes. This one was aimed to investigate students' multiple intelligences, and find out the combination of each student: what is each student's strong intelligence and what is their weak intelligence. The following figure is about the data of MI questionnaire collected by SPSS. Through figure 4.1.3.a, each student' multiple intelligences combination can be clearly perceived. Take the first student for example, her linguistic, music and intra-personal intelligences are strong, her logical-mathematical and bodily-kinesthetic intelligences are weak, and the other three kinds, namely spatial, interpersonal and natural intelligences are intermediate.

During this research, the researcher has interviewed more than half of the students for several times. From the informal interview at the beginning of the study, the researcher got to know that students found extensive reading uninteresting, not important, and so lack of attention. In their opinion, extensive reading (Text B and C) is not the key points in their final examination, so it is no use to study it hard. Due to the ignorance of the teachers, students have no precise ideas about EFL extensive reading.

The author also talked with students in order to discover what they consider to be their most highly developed intelligences. When they talked about the MI theory, the students said they liked the method very much. In reading classes, they could gain a feeling of success. They can make good use of their strong intelligences and compensate their weaknesses at the same time. The class was more and more interesting, and the interviews helped the researcher to adjust the teaching plans to students in time.

Data Analysis and Discussion

For the ease of analysis, tables and frequency counts are used here. Detailed analyses of the previous mentioned questionnaires have produced finding supportive to the application of MI-based EFL reading teaching methods.
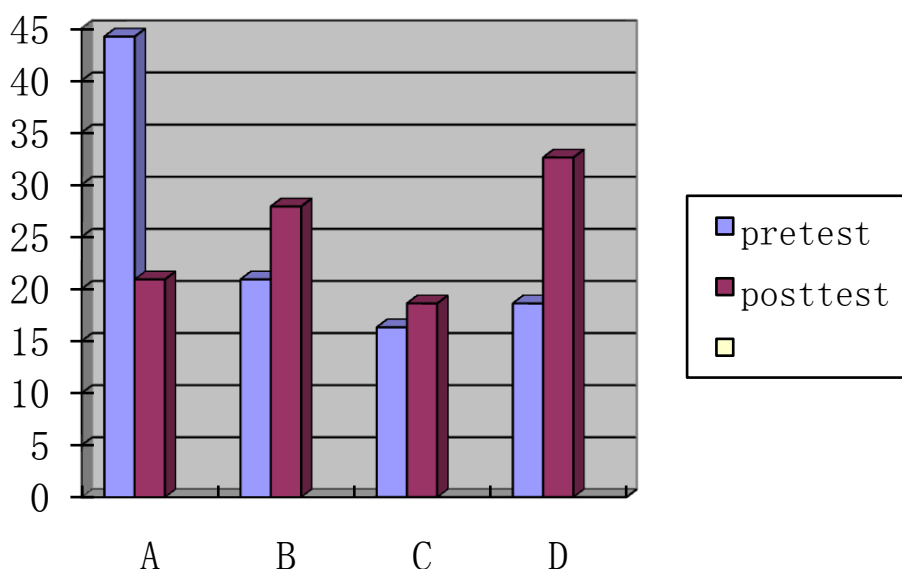
Figure 4.2.1.2 (A: vocabulary and grammar; B: reasoning ability; C: background knowledge; D: reading skills)

The major findings of the study are summarized below:

1. **MI theory's influence on the transformation of EFL extensive reading teaching methods proves to be positive.**

Using MI theory transform the role of the teacher. It makes the teachers be more conscious of students' distinct abilities and learning strengths. This, in turn, will allow teachers to incorporate different learning types and teaching strategies in curriculum. It helps individual teachers transform existing lessons or units into multimode learning opportunities for students. It can be truly satisfying to teach individual differences. One can observe students' enthusiasm, engagement, and achievement increase and experience the expansion of one's own intellectual capacities (Linda Campbell, Bruce Campbell, and Dee Dickinson, 1992:173). The sample-teaching plan can be seen just as one tip of the iceberg, it illustrates MI theory's integration with reading class for one particular lesson. And the comparison of pretest and posttest questionnaires about students' reading habits and reading autonomy can indicate the positive effect of the new synthesized EFL extensive reading teaching method.

In this integration, MI theory and extensive reading process interact with each other. On the one hand, based on MI theory, diverse appropriate classroom activities can be derived to transform the reading model, to exercise the reading skills, and to incorporate background knowledge; on the other hand, the reformed reading process can strengthen students' multiple intelligences and help them compensate their weaknesses. By utilizing this reformed teaching method, students show more interest in classroom than before and most of them are not passive anymore. Their reading proficiency and confidence have been both strengthened.

Since students' intelligences are developing all the time and the text involved are of different types and contents, the process of the integration should be dynamic. It calls for teachers' continuous efforts on curriculum planning and assessments. Only this can ensure MI theory's influence on reading teaching always to be positive.

2. **Misunderstandings to be clarified**

As with any educational approach, there are considerations and precautions to take in implementation. The researcher outlined some of these precautions:

1. To reform the traditional reading teaching methods does not mean to abandon all of it, or to teach in its opposite ways. Teachers should analyze the traditional reading teaching methods carefully and adopt the useful parts according to the actual situation of their classes.

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2. Do not attempt to teach all concepts of subjects using all of the intelligences. It can be done, but is not necessary. Avoid trivial uses of intelligences, simply to 'check off' another intelligence. Be sure to apply meaningful, connected uses (Gardner, 1999a). As for the EFL reading class, special attention should be paid to linguistic intelligence. Proper classroom activities can only be carried out after the analysis of the text and the assessments of students' intelligences' combination and the former classroom achievements. Therefore there are no fixed classroom activities.

3. Assessment should be continuous. In Gardner's eyes, assessment is defined as "the obtaining of information about the skills and potentials of individuals and useful data to the surrounding community" (1993:174). The basic principles of MI assessment are diversity, authenticity and expansibility. Apart from the traditional evaluations as memory test, essay exams, use a variety of innovative testing procedures such as oral interview, term papers, computer-based and web-based tests & presentations, portfolio, self and peer assessment, conferencing, diaries and learning log, etc. Attention should be given to performance-based and task-based language testing in which students experience real-world tasks in the target language (Norris, 2000). The assessment is likely to "elicit a student's full repertoire of skills and yield information that is useful for subsequent advice and placement" (Gardner, 1993:178).

Limitations

1. The study was conducted only within 4 months; this may have negative skewed the results obtained.
2. The study was done with only one class of students; this may also limit the extent to which the results can be generalized to other student populations. The relatively small size of the sample prevents the researcher from making stronger claims about the generalization of the findings.
3. MI requires teacher's teamwork. The researcher conducted this research all by herself, so she could not do something consciously to explore and bring the students' strengths into full play. The EFL teachers naturally choose classroom activities that complement their own multiple intelligences profile (Christison, 1998). In this case, teachers should team up with colleagues so that they can increase both their own and the students' educational options.
4. During the implementation, the researcher also found that some topics are much harder to pursue with MI than others. In that case, the researcher must balance the pursuit of MI with standardized tests and curriculum demands. There are also profound conflict in assessment practices and assumptions.

With these in mind, however, implementing of MI theory in EFL reading class indicates increased multimode skills, improved attitudes and behavior, and other benefits.

Recommendation for Future Research

Due to the limited scope of the research project, further research is needed at both macro-level and micro-level. For further research, several recommendations are offered.

1. Macro-level Research

I.   One result of the program not observed in the research was the effect it had upon the teacher. Due to the nature and limitation of the program, it is impossible to do research about this aspect. However, when teachers adopt MI theory to instruction, they confront unavoidable demands. Time is needed to develop multimode lessons; to work as team members, etc. MI lesson planning absolutely takes more time than other kinds. Teachers cannot just walk and wing it but have to be well prepared. Limitations of the study prevent the researcher from doing such observations. So research can be done about teachers and their perceptions of students before and after MI.

II. The nature and forms of assessment before and after MI is also a significant topic. A multiple intelligences approach to learning does not end at the instruction and student experiences. The assessment must also follow an MI philosophy.

2. Micro-level Research

Further research of this level can focus on the MI-based classroom activities and students' performance and reactions.

REFERENCES

[1]. Armstrong, T. Multiple Intelligences in the Classroom, 2nd edition. Virginia, ASCD Association for Curriculum Development, 2000, p16, p37.

[2]. Christison, Mary Ann. Applying Multiple Intelligences Theory in Preservice and Inservice TEFL Education Programs. English Teaching Forum, 1998, April-June: p.3-13.

[3]. Feng Ruimin, Multiple Intelligences Theory and EFL Learning: Case Studies of Four Chinese First – year Undergraduates. The Fourth Intelligence on ELT in China-Program and Abstracts, 2004, p.233-234.

[4]. Gardner Howard. Frames of Mind. New York: Basic Books Inc, 1983.

[5]. Gardner, H. Are Three Additional Intelligences? The Case for the Naturalist Intelligence. Howard Project Zero. Cambridge, MA: president And Fellows of Howard College, 1995

[6]. Gardner Howard. Multiple Intelligences: The Theory in Practice [M]. New York: Basic Books, 1993.

[7]. Gardner, H. Intelligence reframed: Multiple intelligences for the 21st century. New York: Basic Books, 1999a.

[8]. Norris, J.M. Purposeful assessment [J]. English Teaching Forum. 2000, 38/1: p.18-19.

[9]. Sternberg, R.j. The Triachic Mind: A New Theory of Human Intelligence. New York: Penguim Books, 1988,p42.

[10]. 田式国深化理顺系突特点—英专业教语问题思考,成都四川外语学院报, 2002, 第8卷8期155−157。

[11]. 文炳 英语能成功路,上海上外清资出版社2003, 64−78。

[12]. 大英课要求(试行),教部高等教司,上海上海博资出版社2004。

[13]. 21世大英语第册,上海复大出版社高等教资出版社2000。

[14]. www. Thirteen.org / edonline/concept2class/month1/#3