The Development and Application of the Multiple Intelligence in Higher Education in China

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Abstract. Howard Gardner’s theory of Multiple Intelligence (MI) was conceived in the 1980s. Nowadays Gardner’s Multiple Intelligence take the great role and greatly promote the curriculum reformation and quality education of primary and secondary schools. But we haven’t so much exploration of enhance the reformation of higher education by this theory. In this paper, I will briefly outline the theory of Multiple Intelligence and classification, as well as the analysis and research the main education views. I also explore the development and application of the Multiple Intelligence in Chinese or Shanghai institutes of higher education, the influence and the guidance to the students and teachers in teaching affairs. Sincerely hope to offer the useful effective reference for the reformation practice in our higher education.

Introduction

1880s, Galton (British biologist) create the Intelligence Test (also IQ-test). In 1905, Binet and Simon (French psychologist) create the assessment scale.

However, psychologists and educators have different views about what is intelligence and how the intelligence formed and developed for a long time. In 1983, Howard Gardner (American Educational Psychologist) create seven Multiple Intelligences. Gardner conceived that the traditional concept of intelligence is based on intelligence tests and examinations, mainly focus on the language expression and mathematical inference, so it can’t really reflect the students’ ability. The traditional intelligence has neglect its multiple development and the importance of different individuals.

This essay has explored and researched the situation of MI in Chinese higher education from the application of it. It also objectively analysis the attitude to the view of MI by the document literature. As to a teacher, the teaching level is directly affect the students’ achievement and study interests. Therefore, teachers should devote themselves to the feasibility of MI’s applying in teaching and how to use the MI in class teaching. I hope the MI could give some enlightenment to the teaching field through the research of Chinese higher education.

What is Gardner's Multi-Intelligence Theory and Why this Educational Theory is Important?

Theory of multiple intelligence proposed by Gardner, is a new theory of human intelligence structure. In that theory one’s intelligence has something with inherited genetic factors. But the experience culture background and the social environment also play the great role. He considered that “An intelligence is the ability to solve problems, or to create products, that are valued within one or more cultural settings” [1]. He thought “all societies value different types of intelligences” [1]. Therefore, the conception of the MI theory is “the capacity to solve problems or to fashion products that are valued in one or more cultural settings” [2]. Gardner claims we all possess all of these intelligences but in varying degrees of strength, skill and limitation. Just as we all look different and have unique personalities and temperaments, and we also have different profiles of intelligences. No one kind of intelligence is better than another each intelligence has its own sphere of expertise intelligences are independent of each another.
According to a wide range of information, research results and repeated screening, Gardner and the colleagues of Project Zero, initially identified seven types of human intelligence from the other candidates, including linguistic, logical-mathematical, musical, bodily-kinesthetic, spatial, interpersonal and intrapersonal varieties. I’ll describe them and their Chinese representatives as follows:

**Linguistic intelligence.** Linguistic Intelligence is often called verbal intelligence. It has mastery of language and the ability to manipulate language to express oneself rhetorically or poetically. It also uses language as a means to remember information. Its representative is *Luxun*, who is a great writer, thinker and revolutionist. He was good at describing the details by words and actions to reveal the essence relationships between soul and characters, expressing the yearning of prospection and hope, but also revealing the worst instincts of nation. His famous motto is: One who serves with all effort and loyalty despite others' criticism, and it has inspired countless youth.

**Logical/mathematical intelligence.** Logical/mathematical intelligence has the ability to detect patterns, reason deductively and think logically. It’s often associated with scientific and mathematical thinking. And the representative is *Chen jingrun* who is a famous mathematician. He is not gifted in language, and has a twist in one's tongue, so he was rejected to the have classes, only to correct homework. However, he studied the Goldbach Conjecture and other problems of number theory and these are still far ahead in the world. He is known as the first person to create Goldbach Conjecture.

**Visual/spatial intelligence.** Visual/spatial intelligence always gives one the ability to manipulate and create mental images in order to solve problems. This intelligence is not limited to visual domains. Gardner notes that spatial intelligence is also formed in blind children. Its representative is *Fan Zeng* whose historical figure-paintings was fresh and elegant, chic and vibrant, natural and unrestrained elegance. Meanwhile he was good at long poems, calligraphy, and was known as one of the top ten artists in modern China.

**Musical intelligence.** Musical intelligence encompasses the capability to recognize and compose musical pitches, tones, and rhythms. Auditory functions are required for a person to develop this intelligence in relation to pitch and tone, but it is not needed for the knowledge of rhythm. Its representative is *Langlang*. Langlang could be able to play the melody of a song after listening to theme song of the television show when he was three years old. He liked playing piano and could play it for one or two hours but never felt tired when his father accompanied him to play piano. So his parents found that his son was not only a musical talent but also able to endure hardship. He shows the great intelligence of music which make him gain the outstanding achievement and to be one of the greatest Chinese piano artist.

**Bodily/kinesthetic intelligence.** Bodily/kinesthetic intelligence has the ability of one’s one mental abilities to coordinate one’s own bodily movements. This intelligence challenges the popular belief that mental and physical activities are unrelated. And its representative is *Yaoming* who is the intelligence in basketball field, also our symbol and pride of Chinese basketball. He is not a talent when he was born, but he has gained his achievement by his persistent hardworking and his outstanding height in born.

**Interpersonal intelligence.** Interpersonal intelligence has the ability to recognize feelings, intentions and motivations of others. The representative is Premier *Zhou Enlai*. He is Chinese Premier and foreign minister since 1949 when the Republic of China. He had made and carried out many impotent diplomacy policy, visited a lot of countries of Europe, Asia and Africa, and receive the leaders and friends all over the world. He’s preeminent diplomatic capability has made great contribution to China and the whole world.

**Intrapersonal intelligence.** Intrapersonal intelligence has the ability to understand one’s own feelings and motivations and the ability to use that information to regulate one’s own life. Its representative is *Zhang Haidi* who is a writer of disabled. She finished the whole education after her suffering from high-level paraplegia. And then she began to study acupuncture and moxibustion and became a doctor in the local district. So she is the representative of Interpersonal Intelligence in China.
The important point is the so-call multiple is a vague and open conception. The number of the MI elements might be increasing as well as increase of the civilization knowledge. We must concern that Gardner adds to the list a new naturalist intelligence in 1996.

**Naturalist intelligence.** Naturalist intelligence has the ability to recognize and categorize plants, animals and other objects in nature. And the representative is Yuan Longping who is the agronomists, experts in hybrid rice breeding. He devoted himself to the theory research of hybrid rice breeding and the technology practice for a long time so that he is regarded the Father of hybrid rice breeding.

Howard Gardner also argues that the concept of intelligence should be broadened and proposes that there is not a single intelligence, but rather that there are nine, maybe more. Meanwhile, the Existential Intelligence is accepted. After that the Spiritual and Moral intelligence are just emerged in current days, still being examined.

**Existential intelligence.** Existential intelligence has the sensitivity and capacity to tackle deep questions about human existence (i.e., the meaning of life? why do we die? how did we get here?)

**Spiritual intelligence.** Spiritual intelligence has the ability to grasp cosmic and transcendent truths depends on affective characteristics. We have as yet no scientifically reliable way of investigating such traits. Meanwhile it’s also the precursor to existential intelligence.

**Moral intelligence.** Moral intelligence “is a concern with those rules, behaviors and attitudes that govern the sanctity of life – in particular, the sanctity of human life and, in many cases, the sanctity of any other living creatures and the world they inhabit” [3]. But Gardner believes, that until we accept the existence of a moral realm is it then possible to speak of moral intelligence, and if we speak of a moral code then Gardner cannot accept the term moral intelligence.

### Development of Multiple Intelligences in China

An agreement of the international cooperation program——“Practical Study on Taking Multiple Intelligence as References to Develop Student Potentiality” was reached in the third DIC annual meeting, Beijing, in 2004. It was also set as a key topic of the tenth five-year-long program of the Chinese Society of Education (CSE) with the task of promoting the application of multiple intelligences in Chinese schools. As a matter of fact, multiple intelligences can be used not only in kindergartens and elementary schools, but also can be used in high schools, universities, academies and on-job training.

Multiple Intelligences is concerned greatly in the application of Chinese high education. It is the best representation of quality education, encouraging that students’ hobbies and characteristics should be developed to the full. Although we have already realized the limitation of exam-oriented education and admitted the importance of quality education for the development of the students, the traditional ideas have not changed so that students could not realize their individual development for many reasons, which makes the application of MI not keep pace with the theory exploration. According to our present sorted materials, it’s rather pathetic that there are so fewer related specific class practice s and document literatures though the MI teaching has already taken its importance in China. And these collected materials have just been at the theoretical level though they are very important to the MI teaching views. Some top colleges have adapted reformation and practice, but they have not formed a scientific and regular curriculum system.

### Application of Multiple Intelligences in China’s Higher Education

How many curriculums are there using MI? This is a very important issue with great concern. I’ve learned about the situation of MI through by searching for document literatures and with the help of some experts, teachers and students. According to the author’s statistics, it’s very common for higher education to use the MI. Main subjects are as follows:
Table 1. Application of Multiple Intelligences in China’s Higher Education.

<table>
<thead>
<tr>
<th>Class Courses</th>
<th>Practical writing</th>
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<tbody>
<tr>
<td>Chinese lesson</td>
<td>Composition assessment</td>
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<td>Integrated activities</td>
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<td>Math lesson</td>
<td>Software course</td>
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<td>English lesson</td>
<td>Reading lesson</td>
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<td>Professional English course</td>
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<td>Music lesson</td>
<td>Carl Orff music education</td>
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<td>Physical education</td>
<td>Tennis</td>
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<td>Aerobics</td>
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<td></td>
<td>Yoga</td>
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<td>Track and field</td>
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<td></td>
<td>Martial art</td>
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<td>Art lesson</td>
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<td>Geography lesson</td>
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<tr>
<td>Computer</td>
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<td>School-based curriculum lesson</td>
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<td>Ideological and Political Course</td>
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The table above shows that in Chinese higher education there’re more than 10 kinds of MI used in the class teaching because the application of MI has already been concerned by the public. These subjects are studied for the present practice in teaching. All these shows that teachers start class with MI on purpose to enrich their students’ knowledge and develop divergent thinking. It can help maintain the classroom discipline and promote the students’ motivation and interests.

From the study of application of multiple intelligences in Chinese higher education, it is found that students’ multiple intelligence has been practiced through the application. For example, teachers began to attach importance to the communicative function of language and the relationship between language and culture due to the MI teaching method. In teaching, reading literal works, newspapers and magazines really practice the students’ linguistic intelligence and logical/mathematical intelligence. Watching movies and TV help them develop interpersonal intelligence and linguistic intelligence.

Meanwhile the art class and the music class cultivate the language intelligence, enrich the music intelligence and expand the space intelligence. It also develops the self-awareness intelligence, exercise the body-sense intelligence, enhance the mathematical logic intelligence and promote interpersonal intelligence.

It is noteworthy that few lesson will contain parts that correspond to all types of intelligence, but a key recommendation of multiple-intelligence theory for the classroom is that teachers seek to include a variety of presentation modes in each lesson to expand the number of students who are likely to succeed [4].

The research shows that teachers should adapt some funny and efficient ways to guide the students, give them multiple teaching method and affect their intelligence development.
**Further Development and Comment**

Multiple Intelligence is concerned greatly in the application of Chinese high education. Although we have already realized the limitation of exam-oriented education and admitted the importance of quality education for the development of the students, the traditional ideas have not changed so that the students could not realize their individual development for many reasons, which makes the application of MI not keep pace with the theory exploration. According our present sorted material, it’s rather pathetic that there are so fewer related specific class practice and document literature though the MI teaching has already taken its importance in China. And these collected materials have just stay at the theoretical level though they are very important of the MI teaching views. Some top colleges have adapted reformation and practice, but they have not formed a scientific and regular curriculum system.

For instance, our undergraduate courses and their main content is the poems so as that let the students to be useful and qualified youth. And the curriculum arrangements emphasis on multiple knowledge and cultivating their appreciation of music, drawing and calligraphy. However the way of teaching does still not focus on the students’ individuals so that their knowledge is still stay in a subject area and cannot develop their advantages.

In addition, there’re some disadvantages of MI in teaching experiment. For examples, some schools are forced to carry out the MI experiment, but the teachers don’t want co-operate with each other’s, even refuse adjusting their class schedule. Meanwhile giving the students new conception in the process of multiple experiment is not a good way to go. So we must attach importance to their richness and specifications of MI.

As to an art teacher, painting, music and dancing are all useful. It is necessary for the schools to cultivate the students’ linguistic intelligence, spatial intelligence, musical intelligence and bodily-kinesthetic intelligence. Meanwhile it is noteworthy that the talents with abilities are various, so the teachers should praise different kinds of students to let them to be clever and useful.

**Conclusion**

This study shows that MI theory has a great value and guidance in our higher education and teaching field. Gardner’s MI theory thought that everyone has different intelligence level. So the MI teaching view is focus on the students and their differences, and adapts multiple teaching content and mutual activities between teachers and students. We are pleased that the emerge of MI theory has already changed people’ ideas and becomes the new angle of the carry-out of worldwide educational innovation and our quality education.

**References**


