

## *Original Paper*

# An Investigation on the Multiple Intelligences of English Major Undergraduates in a University in Jiangxi Province

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### **Abstract**

*The Multiple Intelligences theory is composed of eight various intelligence, which concludes all aspects of human beings. Every individual has a different degree of these eight intelligences, but these eight intelligences are conducive to the overall development of persons and are in line with the current talent training goals of college English majors. So as to make better use of Multiple Intelligences theory in college English majors' teaching, this paper did a survey of multiple intelligences to English major students in a university of Jiangxi Province. The results reveal that the level of multiple intelligences of English majors in the university is in a general state, and their weaknesses intelligence and superior intelligence are music intelligence and naturalist intelligence respectively. What's more, the results provide three aspects of enlightenments for a better use of Multiple Intelligences for further college teaching: based on students' current multiple intelligences; make use of students' learning styles and learning strategies; enable students to get overall development. It is hoped that the article could offer some inspiration to current teaching of English majors in universities, and also provide some new ideas for better use of the teaching method guided by the theory of Multiple Intelligences.*

### **Keywords**

*Multiple Intelligences, English majors, English teaching*

### **1. Introduction**

The theory of Multiple Intelligences was firstly proposed by American scholar Howard Gardner in 1983, which has broken through the traditional view of unitary intelligence. Since then, with its continuous improvement, the Multiple Intelligences has become a theory that is composed of eight intelligences: linguistic intelligence, logical-mathematical intelligence, spatial intelligence, musical intelligence,

bodily-kinesthetic intelligence, interpersonal intelligence, intrapersonal intelligence, and naturalist intelligence. In the meanwhile, once this theory has been put forward, it has captured academic circles' extensive attention for a long time, and almost all stages of language learning have applied it as a way to teach students.

Multiple Intelligences theory is a learner-centered teaching theory, which stresses that teachers should comprehend the current situation and differences of learners' all aspects of intelligences, and apply corresponding teaching methods to promote and develop every aspect of students' intelligence. Regarding language teaching, the theory of Multiple Intelligences aims to improve the intelligence of students in all aspects through language teaching. Consequently, teachers are required to use various methods in the process of language teaching.

At present, most of the research objects about multiple intelligences are language learners in elementary and middle schools, so there are few investigations and applications of Multiple Intelligences theory on college students. Hence, this article intends to investigate the multiple intelligences of English major undergraduates in a university in Jiangxi Province for acquiring the current situation and characteristics of English major students' multiple intelligences. Also, this research desires to better use the teaching method guided by Multiple Intelligence theory to improve English major undergraduates' daily teaching, and makes up for the research on Multiple Intelligence theory about English major undergraduates.

## **2. Literature Review**

### *2.1 The Concept of Multiple Intelligences Theory*

The interpretation of the concept of Multiple Intelligences theory is greatly based on the viewpoint of Howard Gardner, the proponent of this theory, to explain the definition and composition of Multiple Intelligences theory.

In the book *Frames of mind* (Gardner, 1983), Gardner has given the definition of intelligence: the ability to solve problems that one encounters in real life; the ability to generate new problems to solve; the ability to make something or offer a service that is valued within one's culture. According to the definition, it can be obviously seen that intelligence is the capacity to solve problems and create something under the certain social culture and value standard, which shows that the dimensions of intelligence are diverse rather than one aspect. Thus, the Multiple Intelligence concludes eight types of intelligence as following.

The first type is the linguistic intelligence. It refers to the capacity of listening, speaking, reading and writing (Huo, 2000), which enables people to describe, express and communicate through language. This intelligence is the kind of intelligence that lawyers, writers, editors and translators are good at.

The second type is the logical-mathematical intelligence. This intelligence is the ability of rational thinking and logical deduction, which is able to reason the relation between things, and be interested in new scientific discoveries. This intelligence usually manifests in doctors, engineers and scientists.

The third type is the spatial intelligence. It relates to the capacity to perceive and distinguish colors, graphics, space as well as directions, colors, shapes, and it relates to people who prefer to take advantage of graphics to memory things. This type of intelligence is the intelligence that architects, sculptors and painters do well in.

The fourth type is the musical intelligence. This intelligence mainly involves the ability to feel, discern, memorize and express music (Huo, 2000), being able to create, memorize and express through songs, and having a certain sensitivity to pitch, rhythm and melody. Singer and composer possess higher intelligence of this kind.

The fifth type is the bodily-kinesthetic intelligence. It refers to a person's body coordination ability that is able to better control his body and uses it to express their thoughts. This type of intelligence is the intelligence that athletes, craftsmen and dancers are good at.

The sixth type is the interpersonal intelligence. This intelligence is the capacity to get on well with others; to detect and distinguish the intentions of others and to make respond accordingly. What's more, individuals with high interpersonal intelligence are more willing to help people in need. Teachers, salesmen, and politicians have high levels of such intelligence.

The seventh type is the intrapersonal intelligence. It includes the ability of self-cognition, which enables an individual to recognize his own merits and demerits, to master his own emotion, and to plan his future life. This type of intelligence can regulate the happiness and adaptability of people in various fields.

The eighth type is the naturalist intelligence. This intelligence refers to the capacity to observe and distinguish different things in nature. People with high naturalist intelligence are more likely to touch and love nature; to be obsessed in the research of plants and animals. This intelligence is the one that gardeners, astronomers and naturalists do well in.

## *2.2 Related Research on the Theory of Multiple Intelligences in English Teaching*

### *2.2.1 Related Research Aboard*

The research on the Multiple Intelligence Theory aboard started earlier than at home, and the studies on multiple intelligences from the theoretical and empirical perspectives are relatively rich. In recent years, research focuses on the correlation between Multiple Intelligences and other issues like students' learning strategies and learning styles (Akbari & Hosseini, 2008; Wu & Alrabah, 2009; Mirzaei, Domakani, & Heidari, 2015), and there are some studies about the specific language skills (for example, Handayani, 2016).

Razmjoo (2008) made an investigation to 278 doctoral students in order to know the current situation of doctoral students' multiple intelligences, the gender differences of multiple intelligences, and the effectiveness of a certain type of multiple intelligences for English learning. Through the data collection and analysis, there was no significant relation between doctoral students' linguistic intelligence and English achievement and there was no significant difference in multiple intelligence between males and females. In the meanwhile, Razmjoo (2008) found that all types of multiple intelligences could not

predict the English language proficiency of Iranian doctoral students. However, one thing should be noticed that the subjects of this research are doctoral students whose age and professional fields are vary greatly, which will affect the final results of the research.

For the sake of exploring the possible relationship between multiple intelligences level and various learning strategies, Akbari and Hosseini (2008) conducted the multiple intelligence questionnaire and learning strategy questionnaire to 90 college students. By the analysis of data collected, they found that different learning strategies had a positive correlation with the level of multiple intelligences, but the correlation was relatively low. Furthermore, the metacognitive and cognitive learning strategies were closely related to the all types of multiple intelligences. Nevertheless, the number of the research objects and the background introduction of the research objects may not large enough to be representative of the results.

Wu and Alrabah (2009) investigated college English learners in different cultural backgrounds from Taiwan and Kuwait universities so as to know the relation between students' learning styles and multiple intelligences. This study aimed to gain more information about the multiple intelligences and learning styles of students in the two different cultural backgrounds, and to know the influence of prominent learning styles on prominent multiple intelligence types.

The study mainly applied the questionnaires, and through the data collected, it was found that Taiwanese college students got the highest score in visual intelligence while Kuwaiti college students obtained the highest score in interpersonal intelligence. Moreover, Taiwanese college students preferred to have the visual learning styles while Kuwaiti college students showed a preference for extroverted learning styles, thus it could be seen that the learning styles have effect on the multiple intelligences. In addition, the study puts the research of learning styles and multiple intelligences in an intercultural context, which provides some pedagogical enlightenments for teachers in various cultural regions. However, the research method used in the study is relatively single.

Mirzaei, Domakani, and Heidari (2015) did a research to investigate the relation between the reading strategy used by successful English as Foreign Language (EFL) readers and the multiple intelligences level of those readers. Through the questionnaires, interview and TOFEL reading tests, they found that successful EFL readers were in high level of linguistic intelligence, logical-mathematical intelligence and intrapersonal intelligence; metacognitive and cognitive strategies were positively correlated with these intelligences. This research has a meaningful effect on the future English reading teaching, but it is needed to do more further researches to see whether there will be the same results for English learners in different levels.

In order to explore the influence of interpersonal intelligence on the oral presentation of Indonesian students, Handayani (2016) launched a three-month oral course based on the interpersonal intelligence to students, and also conducted observations and interviews to students. By analyzing the data collected, Handayani (2016) found that interpersonal intelligence had a significant effect on Indonesian students'

oral presentation, which meant that students with higher interpersonal intelligence could have stronger oral presentation. However, the research time of this study is not long enough to see the long-term impact of interpersonal intelligence on the oral presentation ability of students. What's more, students' oral presentation ability is affected by many factors that are required to be considered into future research.

### 2.2.2 Related Research at Home

The research on the Multiple Intelligences theory in our country began at the end of the 20th century. The early stage was mostly the introduction of the Multiple Intelligence theory (for example, Huo, 2000); later more and more scholars (Li & Yan, 2002; Song & Wen, 2006) combine the Multiple Intelligences theory with English teaching or other teaching methods, and they put forward some suggestions on English language teaching guided by the Multiple Intelligences theory. At the same time, some researchers apply the theory of Multiple Intelligences to conduct some empirical research on English language teaching.

The research on the theoretical part can be divided into three categories. The first category is the introduction to the Multiple Intelligences theory; the second category is the guidance for English language teaching, and the third category is the combination of the Multiple Intelligences theory and other teaching methods in English teaching.

Huo Liyan (2000) summarizes the structure and connotation of the Multiple Intelligences theory, and points out four aspects of the main connotation of the theory: each individual's intelligence has its own characteristics; intelligence mainly has two aspects of ability; environment and education affect an individual's intelligence development, and treat intellectual problems in a multi-dimensional way. In the meanwhile, in the process of intelligence development, the growth environment and educational environment have a certain influence on the development of an individual's intelligence. Therefore, teachers should pay more attention to the characteristics of individuals and help them gain the overall development in English teaching.

Li Zhiying and Yan Hanbing (2002) combined the Multiple Intelligence theory with English language teaching, and proposed the principle of system design, the principle of teaching students in accordance with their aptitude, the principle of linguistic intelligence priority, the principle of simple activities first, the principle of technology integration and the principle of multi-dimensional evaluation in the combination. Especially in the principle of system design and the principle of linguistic intelligence priority, Li Zhiying and Yan Hanbing (2002) introduced the teaching activities with an integration of the Multiple Intelligences theory and English language teaching in a detail way, which could provide some inspirations and guidance for better using the Multiple Intelligences theory to design classroom activities in English language teaching.

Song Xuesong and Wen Xu (2006) studied the Multiple Intelligences from a new perspective, and they applied the Multiple Intelligences theory into the task-based language teaching method to cultivate students' overall ability. They also put forward the realization of the Multiple Intelligences theory in the

task-based language teaching in English classes from four aspects: the first one is providing a wide range of teaching materials and a variety of activities in English classes; the second one is in daily English teaching, teachers are required to apply various teaching methods; the third one is paying close attention to students' weak intelligences, and the fourth one is implementing more diversified evaluations. In effect, Song Xuesong and Wen Xu (2006) have developed students' multiple intelligences when designing the task-based language teaching activities. In addition, through various activities, all types of students' multiple intelligences have improved, leading to better development of students.

Regarding the empirical part of the research, most of the studies are about the effectiveness of the Multiple Intelligences theory in English language teaching (Wang, 2007; Pei, 2008; He, 2016), and some of the studies are about the correlation of the Multiple Intelligences theory and learning strategies or learning styles (for example, Ma, 2012). What's more, most of the research objects are primary and middle school students, and small part of them are vocational school and college students.

In order to explore the adaptability, positive effects and significance of the Multiple Intelligences theory in college English teaching, Wang Yi (2007) did an experimental study to 110 freshmen. Through the questionnaires, interviews, observations, English tests and grouping experiment, Wang Yi found that the design of English classroom activities should be in accordance with students' current intelligence situation, and the linguistic intelligence was not only related to language learning. This study gives us some enlightenments on applying the Multiple Intelligences theory to college English teaching, but the length of the study is four months that is unable to know the long-term effects of using the Multiple Intelligences theory in college English teaching. In addition, the description of the teaching methods used by the control group is not enough.

Pei Zhengwei (2008) made a qualitative and quantitative study on 60 sophomores of English major in two classes so as to know the effectiveness of the Multiple Intelligences theory on English major students and the impact of the Multiple Intelligences theory on the development of students' intelligence.

Besides, the multiple intelligences mode was adopted by the experimental group, which was with the main features of cooperative learning and diversified activities. The results revealed that the multiple intelligences mode had a significant effect on enhancing students' speaking and writing ability. In the meanwhile, this mode enables students to improve the logical-mathematical intelligence, naturalist intelligence and interpersonal intelligence. However, the experimental objects are 60 sophomores of English majors, which may not represent the situation of all English major students in the college.

In order to know more about the status quo of junior high school students' multiple intelligences, the correlation between the Multiple Intelligences theory and English scores, and the relation between each type of multiple intelligences and English scores, He Yuan (2016) made an investigation to 180 Junior Two students. According to the analysis of data collected, it was found that those junior high school students had high level of naturalist intelligence; there was no relation between the level of multiple intelligences and English scores, but the linguistic intelligence and interpersonal intelligence were

positively related to the English performance. However, the method of collecting data in the research is single, and whether the research objects are representative should be explained in the study.

Ma Ke (2012) conducted an investigation to 178 non-English major college students for acknowledging the relevance of learning strategies and the Multiple Intelligences theory; the influence of the Multiple Intelligences theory on using the learning strategies. Through the establishment of the regression model analysis, Ma Ke (2012) reckoned that the factors that affected the choice of learning strategies were not only the linguistic intelligence; the Multiple Intelligences theory was positively associated with the learning strategies, and each type of multiple intelligences had a different influence on the choice of learning strategies. Additionally, the research provides new ideas for the cultivation of the learning strategies that guided by the Multiple Intelligences theory. However, it is required to further research to see whether this result is applicable to English major students.

### **3. Research Questions**

The research attempts to know the current situation of the multiple intelligences of English major students in a university for better taking advantage of the English teaching method that based on the Multiple Intelligences theory to teach English major students. Moreover, this research tries to answer the following three questions:

- a) What is the overall situation of the multiple intelligences of English major students in a university? What are the characteristics of them?
- b) What are the various dimensions of the multiple intelligences of English major students in a university?
- c) How to make good use of the Multiple Intelligences theory to guide better teaching to English major students?

### **4. Methodology**

#### *4.1 Participants*

This study surveyed 78 juniors of English major in a university in Jiangxi Province, ranging in age from 19 to 23 years old, and most of them are 21 years old. They come from the Foreign Languages College and the Public-funded Normal College; among them, there are 5 males and 72 females, and the gender information of one student is missing.

#### *4.2 Instrument*

This research mainly applies the quantitative research method, which is based on the Multiple Intelligences questionnaire. The design of the Multiple Intelligences questionnaire refers to the Multiple Intelligence questionnaire designed by Cun Ye (2013) for college students. On this basis, the questionnaire is modified and finally be integrated into a set of 40 questions with eight dimensions questionnaire for English major students.

Furthermore, the questionnaire is composed of two parts; the first part is about the personal information (college, major, grade, etc.) and the second part is the main part of the questionnaire that contains 40 questions. The questionnaire adopts a five-point Likert scale ranging from 1 (totally not compliance) to 5 (fully compliance). After returning the questionnaire, the collected data are inputted into SPSS 23.0 for reliability testing. The Cronbach's alpha of the results shows in Table 1 is 0.915, indicating that this questionnaire has high reliability.

**Table 1. Reliability Statistics**

Cronbach's Alpha	N of Items
.915	40

## 5. Results and Discussion

### 5.1 The Overall Situation and Characteristics of English Major Students' Multiple Intelligences

Table 2 shows the overall multiple intelligence scores of 78 English major undergraduates in a university in Jiangxi Province and the scores of each dimension. From the table, it could be obvious seen that the average scores of the 78 English major students' multiple intelligences is 131.12, which indicates that the multiple intelligences of these undergraduates are at the general level. What's more, the minimum score is 82, the maximum score is 175, and the standard deviation of the overall multiple intelligence score is 17.88, which reveals that the scores of the multiple intelligences within students are quite big.

According to Table 2, it is acknowledged that the average scores of the various dimensions of the multiple intelligences of these 78 English major students from high to low are: the naturalist intelligence, the interpersonal intelligence, the logical-mathematic intelligence, the intrapersonal intelligence, the spatial intelligence, the bodily-kinesthetic intelligence, the linguistic intelligence and the musical intelligence. Among them, the naturalist intelligence and the interpersonal intelligence have higher scores: 17.90 points and 17.21 points; the linguistic intelligence and the musical intelligence have the lower scores: 15.44 points and 14.53 scores.

As a result of this, it can be seen that the multiple intelligences' level of the English major undergraduates in a university in Jiangxi Province is at the general level, and the linguistic intelligence and the musical intelligence should be improved. In addition, it is necessary for teachers to use the Multiple Intelligence theory to guide the daily teaching and to improve the overall level of students' multiple intelligences.



**Table 2. Descriptive Statistics of the Overall Scores and Each Dimension**

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Overall scores	78	82.00	175.00	131.12	17.88
Linguistic intelligence	78	9.00	22.00	15.44	2.62
Logical-mathematical intelligence	78	10.00	25.00	16.97	2.58
Spatial intelligence	78	8.00	23.00	16.35	3.18
Musical intelligence	78	5.00	25.00	14.53	5.10
Bodily-kinesthetic intelligence	78	9.00	24.00	15.83	3.18
Interpersonal intelligence	78	7.00	25.00	17.21	3.09
Intrapersonal intelligence	78	5.00	25.00	16.90	3.30
Naturalist intelligence	78	10.00	25.00	17.90	3.64

Note. the highest score of the multiple intelligences is 200 points, and the lowest score is 40 points; the highest score for each dimension is 40 points, and the lowest score is 5 points.

## 5.2 The Eight Dimensions of the Multiple Intelligences of English Major Undergraduates

### 5.2.1 The Linguistic Intelligence

Table 3 demonstrates the scores of the linguistic intelligence. We can see from the table that the average score of item 3 is the highest, which is 3.51 points; the average score of item 5 is the lowest, which is 2.45 points. Item 3 is about the discipline tendency; generally speaking, English major students are more likely to learn the language subjects, so the average score on this question is the highest. Item 5 relates to the oral ability of students; the lowest average score manifests that most of the students are not confident enough in their oral ability or unwilling to express themselves, which is a very common phenomenon in daily teaching.

However, for English major undergraduates, it is unexpected to see that the average score of the linguistic intelligence is in the low ranking. Although some researchers (Wang, 2007; Razmjoo, 2008) have proved that language learning is not only related to the level of the linguistic intelligence or the linguistic intelligence does not have a significant relation with language learning ability. In effect, it is crucial to know more about the reasons on low level of English major undergraduates' linguistic intelligence, and help them improve the linguistic intelligence.

**Table 3. Descriptive Statistics of the Linguistic Intelligence**

Item	N	Minimum	Maximum	Mean	Std. Deviation
Item1	78	2	5	3.27	.71
Item2	78	1	5	2.97	.93
Item3	78	1	5	3.51	1.00
Item4	78	2	5	3.23	.84
Item5	78	1	5	2.45	.82

Note. the highest score for each item in the Multiple Intelligences Questionnaire is 5 points, and the lowest is 1 point.

### 5.2.2 The Logical-Mathematical intelligence

Logical-mathematical ability highlights the capacity of rational thinking and logical reasoning. The logical-mathematical intelligence is in the top three in the overall multiple intelligence scores, indicating that the English major undergraduates in the university have certain logical mathematical ability. Furthermore, as is shown the score of the logical-mathematical intelligence in the Table 4, item 6 gets the highest average score of 3.74 points while item 7 has the lowest average score of 2.78 points. Item 6 is about the search for the logic and laws of things, which is a significant manifestation of the logical-mathematical intelligence; item 7 is about the love towards board games, which enables to improve the logical thinking capacity, but board games are lack of fun. The reason for the low score of the item 7 is that students are not interested in this type of game.

In addition, in order to find the impact of the logical-mathematical intelligence on English as the second language learners, Šafranĵ (2016) implemented the methods based on detective reasoning, detecting patterns and logical thinking, and Šafranĵ found that applying the logical-mathematical intelligence into the second language teaching is able to improve students' English language proficiency. This result also gives teachers an inspiration that they are required to pay more attention to the cultivation and improvement of students' logical-mathematical intelligence.

**Table 4. Descriptive Statistics of the Logical-Mathematical Intelligence**

Item	N	Minimum	Maximum	Mean	Std. Deviation
Item6	78	2	5	3.74	.78
Item7	78	1	5	2.78	.98
Item8	78	2	5	3.55	.83
Item9	78	2	5	3.47	.66
Item10	78	2	5	3.42	.80

Note. the highest score for each item in the Multiple Intelligences Questionnaire is 5 points, and the lowest is 1 point.

### 5.2.3 The Spatial Intelligence

The spatial intelligence ranks the fifth among the eight dimensions, and it is a kind of intelligence that English major students need to enhance. As it can be seen from Table 5, item 13 has the highest average score of 3.64 points; item 11 has the lowest average score of 2.92 points. Item 13 is about the sensitivity of colors, and most English majors are sensitive to colors. Item 11 is about the sense of direction; the low score of this question shows that most English major undergraduates have a poor sense of direction.

In terms of the research on the spatial intelligence, most scholars (for example, Yani, Mulyadi, & Ruhimat, 2018) employ it in mathematics and geography subjects for exploring the relationship between the spatial intelligence and the subject learning. Consequently, in daily English teaching, teachers rarely train the spatial intelligence of students or utilize relative strategies to improve the spatial intelligence of students. As a matter of fact, utilizing the real space and visualizing tools such as movies and diagrams as the assistance for teaching could improve students' spatial intelligence (Huang, 2003).

**Table 5. Descriptive Statistics of the Spatial Intelligence**

Item	N	Minimum	Maximum	Mean	Std. Deviation
Item11	78	1	5	2.92	.95
Item12	78	2	5	3.53	.77
Item13	78	2	5	3.64	.66
Item14	78	1	5	3.14	.96
Item15	78	1	5	3.12	.93

Note. the highest score for each item in the Multiple Intelligences Questionnaire is 5 points, and the lowest is 1 point.

### 5.2.4 The Musical Intelligence

The musical intelligence is the perception of the rhythm and pitch of music and the capacity to express through music. Among all types of multiple intelligences, the musical intelligence has the lowest average score, which indicates that it is the most lacking intelligence for English major undergraduates in the university.

Table 6 demonstrates the five items of the musical intelligence. Item 19 has the highest average score of 3.41 points; item 16 gets the lowest average score of 2.44 points. Moreover, item 19 refers to the degree of loving singing, and most of the undergraduates like to sing. Item 16 is about the ability to play one musical instrument; however, most of the students can not play one musical instrument. This phenomenon has a direct relation to the current educational environment since parents always pay close attention to students' academic performance rather than the cultivation of students' interest in musical instruments. Thus, most English major undergraduates are at low level of the musical intelligence.

However, the musical intelligence has a certain positive impact on English learning. Lu Qi and Wang Yong (2011) explored the relationship between the musical intelligence and college students' listening ability. After half a year of music training for 200 college students with different majors, they found that students' listening performances have improved. Hence, it can be known that the musical intelligence has a certain positive influence on the teaching of English listening, so it is very vital to improve the musical intelligence of English majors in this university.

**Table 6. Descriptive Statistics of the Musical Intelligence**

Item	N	Minimum	Maximum	Mean	Std. Deviation
Item16	78	1	5	2.44	1.21
Item17	78	1	5	2.90	1.19
Item18	78	1	5	3.03	1.19
Item19	78	1	5	3.41	1.26
Item20	78	1	5	2.76	1.27

Note. the highest score for each item in the Multiple Intelligences Questionnaire is 5 points, and the lowest is 1 point.

### 5.2.5 The Bodily-kinesthetic Intelligence

The bodily-kinesthetic intelligence with low score ranks six in the multiple intelligence score, manifesting that the bodily-kinesthetic intelligence of English major undergraduates of the university is generally low. We can see from the Table 7 that item 25 gets the highest average score of 3.53 points and item 21 has the lowest average score of 2.87 points. Additionally, item 25 is about the tendency of practical learning, and the high score shows that most English major graduates prefer to learn knowledge in practice; item 21 is about the preference of doing sports, and the low score indicates that most students have little interest in sports and be lack of doing exercise.

Nigo (2009) proved that the application of the bodily-kinesthetic intelligence enables students to enhance their oral communicative ability through experiment, indicating that the improvement of the bodily-kinesthetic intelligence is useful to English learning of English major undergraduates. In the meanwhile, Ji Lingzhu (2004) suggested that total physical response, body language, role-play and other activities could be applied to enhance students' bodily-kinesthetic intelligence, which could also increase the fun of learning.

**Table 7. Descriptive Statistics of the Body-Kinesthetic Intelligence**

Item	N	Minimum	Maximum	Mean	Std. Deviation
Item21	78	1	5	2.87	1.09
Item22	78	1	5	3.13	1.10
Item23	78	1	5	3.36	.95
Item24	78	1	5	2.95	.84
Item25	78	1	5	3.53	.82

Note. the highest score for each item in the Multiple Intelligences Questionnaire is 5 points, and the lowest is 1 point.

### 5.2.6 The Interpersonal Intelligence

The interpersonal intelligence stresses the recognition and correct response to others' feelings and intentions. This intelligence ranks second in the multiple intelligence, which is consistent with the research result made by Hao Mei and Fu Hongxia (2006) on non-English major postgraduates. The result manifests that students' life in the college has generally enhanced the interpersonal skill. Besides, Table 8 reveals the scores of the interpersonal intelligence. As it can be seen from the table, item 28 gets the high average score of 3.88 points; item 29 has the lowest average score of 2.82 points. Item 28 is about the numbers of close friends, and most English major students have 2 close friends; item 29 is about the level of leadership, and only a few English major undergraduates obtain strong leadership.

Handayani (2016) investigated the effect of the interpersonal intelligence on improving the oral capacity of Indonesian students. And through a three-month experiment, it was found that the interpersonal intelligence has a positive influence on students' oral capacity. What's more, He Yuan (2016) investigated the relationship between the multiple intelligences of junior high school students and their English performance, and found that the interpersonal intelligence has a positive influence on the English performance of junior high school students. Consequently, the interpersonal intelligence has positive effects on junior high school students' English learning; teachers are required to apply related teaching methods to enhance students' interpersonal intelligence, leading to better learning effect of students.

**Table 8. Descriptive Statistics of the Interpersonal Intelligence**

Item	N	Minimum	Maximum	Mean	Std. Deviation
Item26	78	1	5	3.64	.74
Item27	78	1	5	3.40	.80
Item28	78	1	5	3.88	.93
Item29	78	1	5	2.82	.96
Item30	78	1	5	3.46	.85

Note. the highest score for each item in the Multiple Intelligences Questionnaire is 5 points, and the

lowest is 1 point.

### 5.2.7 The Intrapersonal Intelligence

The intrapersonal intelligence ranks in the middle position of the multiple intelligences, which illustrates that this type of intelligence needs to be improved for English major undergraduates. As is shown in the Table 9, each item of the intrapersonal intelligence is above 3 points but the average score is low. Item 32 and item 33 both get the highest average score of 3.58 points, and item 35 has the lowest average score of 3.00 points. In addition, item 32 and item 33 is about the ability of reflection and introspection, which shows that most English major undergraduates obtain this ability; item 35 is the tendency of keeping diaries and recording life, which is a hard habit to keep on. However, writing diaries is a nice way to exercise students' intrapersonal intelligence.

With regard to the intrapersonal intelligence, Ji Lingzhu (2004) reckoned that it was useful to improve students' intrapersonal intelligence by cultivating independent learning, recording learning situation and concentrating on energy. These means provide a reference to improve students' intrapersonal intelligence.

**Table 9. Descriptive Statistics of the Intrapersonal Intelligence**

Item	N	Minimum	Maximum	Mean	Std. Deviation
Item31	78	1	5	3.50	.73
Item32	78	1	5	3.58	.92
Item33	78	1	5	3.58	.73
Item34	78	1	5	3.24	.94
Item35	78	1	5	3.00	1.03

Note. the highest score for each item in the Multiple Intelligences Questionnaire is 5 points, and the lowest is 1 point.

### 5.2.8 The Naturalist Intelligence

The naturalist intelligence highlights the recognition of animals and plants and the love of nature, which is the highest average score of English major undergraduates in the university. Moreover, the result is the same as the survey result made by He Yuan (2016) on the multiple intelligences of junior high school students, manifesting that in the college, students still have the curiosity to observe and be close to nature. It is manifest in the Table 10 that compared with other multiple intelligences, the average score of each item of the naturalist intelligence is higher than other intelligences.

Item 36 has the highest average score of 3.82 points and item 37 gets the lowest average score of 3.36 points. In addition, item 36 is the love for plants, and most of the English major students like plants; item 37 is about the natural activities (for example, collecting insects). In fact, some natural activities could be

a hobby, and English major students have less interest in it.

**Table 10. Descriptive Statistics of the Naturalist Intelligence**

Item	N	Minimum	Maximum	Mean	Std. Deviation
Item36	78	2	5	3.82	.89
Item37	78	1	5	3.36	.93
Item38	78	2	5	3.62	.81
Item39	78	2	5	3.38	.90
Item40	78	2	5	3.72	.91

Note. the highest score for each item in the Multiple Intelligences Questionnaire is 5 points, and the lowest is 1 point.

## 6. Pedagogical Enlightenments

### 6.1 Based on Students' Multiple Intelligences

When implementing the teaching methods guided by the Multiple Intelligences theory, teachers should know the specific situation of students' multiple intelligences so as to give full play to strong intelligences and improve weak intelligences. According to the investigation of the 78 English major undergraduates, it can be seen that the current level of the English major students' multiple intelligence is general, so there is still great room to improve. Besides, the investigation reveals that the naturalist intelligence, the interpersonal intelligence and the logical-mathematical intelligence are the superior intelligences while the bodily-kinesthetic intelligence, the linguistic intelligence and the musical intelligence are the weak intelligences. Therefore, in daily teaching, teachers are required to design multiple activities to help students enhance their weak intelligences and utilize their advantageous intelligences.

Li Zhiying and Yan Hanbing (2002) integrated the multiple intelligences with English teaching, and proposed that games, experiments, and opera performances could train students' bodily-kinesthetic intelligence; word games, recitation contests, and English story writing could improve students' linguistic intelligence; dubbing, imitating, singing English songs, etc. could enhance students' musical intelligence. In fact, the activities are those rarely used in daily teaching. Because of ignoring the use of these activities, students' bodily-kinesthetic intelligence, linguistic intelligence and musical intelligence are difficult to develop.

In the meanwhile, teachers should pay attention to two requirements when implementing the Multiple Intelligence theory. First of all, when teaching English major students, all activities should at the basis of the linguistic intelligence. For English major students, the improvement of the linguistic intelligence is helpful to learn English. Secondly, teachers should take fully advantage of the linguistic intelligence to improve students' weak intelligences. After knowing the situation of students' multiple intelligences, the

design of activities should be based on it in order to better apply the Multiple Intelligences theory to improve students' various intelligences. Moreover, when designing the classroom activities, teachers need to pay close attention on both weak and strong intelligences of students, and the design should be composed of various intelligences.

These two suggestions have higher requirements for teachers' teaching level and multiple intelligences. For making better use of the Multiple Intelligences theory in teaching, teachers need to continuously improve their teaching capacity and the theoretical level of the Multiple Intelligences theory, better designing various teaching activities to help students enhance the overall level of multiple intelligences.

### *6.2 Utilize Students' Learning Styles and Learning Strategies*

At present, many researchers at home and abroad have done a lot of related studies on learning styles, learning strategies and multiple intelligences. Akbari and Hosseini (2008) found that metacognition and cognition learning strategies are the most closely related to all types of multiple intelligences. Baleghizadeh and Shayeghi (2013) explored the relation between the preference of learning styles and multiple intelligences of adult English learners. And they concluded that the linguistic intelligence had a significant relationship with the tactile and auditory learning styles, the logical-mathematical intelligence was positively related with individual learning style, and the body-kinesthetic intelligence had a positive correlation with kinesthetic and group learning styles.

Consequently, different learning styles and learning strategies are closely related to the Multiple Intelligences theory, and teachers could take advantage of students' learning strategies and styles to improve their multiple intelligences. Thus, in daily teaching, teachers should first help students know their own learning styles and strategies for better teaching. What's more, learning styles and learning strategies have a certain impact on students' multiple intelligences. When facing various teaching tasks, teachers could make use of students' learning styles and strategies, and help them optimize and develop their learning styles and strategies to improve their multiple intelligences.

### *6.3 Use the Multiple Intelligences to Achieve Overall Development*

The current college education stresses getting rid of the shackles of traditional education, allowing students to get the overall development. The Multiple Intelligences theory highlights students as the center, and teaching should be based on the characteristics of every student. Furthermore, when implementing the Multiple Intelligence theory to guide teaching, teachers should carry out various activities and apply a variety of teaching methods, which are beneficial for students' development.

The teaching method guided by the Multiple Intelligences theory emphasizes overall development of people on the basis of the concept of teaching students in accordance with their aptitude, which meets the needs of current talents' cultivation and the requirements of overall development. For English major students, the teaching method guided by the Multiple Intelligences theory should not only improve their linguistic intelligence, but also utilize the daily teaching to enhance other aspects of intelligences, making students get all round development and being the talents needed by the society.



## 7. Conclusion

In order to better cultivate English major students and improve their overall qualities, teachers need to know the state of students' multiple intelligences and fully utilize the theory to teach students. This paper makes an analysis of the Multiple Intelligences investigation on 78 English major undergraduates in a university in Jiangxi Province, and understand the state and characteristics of multiple intelligences of English major students in this university, which could provide some enlightenments for further applying the Multiple Intelligence theory to teach. In the meanwhile, the strong and weak intelligences of English major students reveal deficiencies of daily teaching activities, which are worth of further consideration. All in all, teachers should constantly help English major students understand their own multiple intelligences, design a variety of teaching activities in the classroom, and implement various strategies to help students improve their overall multiple intelligences to get all round development.

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