Possibility of Implementing Multiple Intelligence Theory Based English Instruction for Remedial Purposes

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Abstract

Declining English skills among new university students have been reported over the years in Japan. Some solutions adopted to overcome this problem include implementing remedial courses, facilitating support centers, and introducing Content and Language Integrated Learning (CLIL). However, in the present circumstances, university students' English levels have been becoming progressively worse for years, and the English ability gap among students has widened. This study proposes using multiple intelligence (MI) theory as a more radical measure to respond to these challenges. MI theory is believed to offer an efficient approach, although such an approach is rarely observed at the university level in Japan. This is a pilot study, which will become the foundation for constructing instruction courses based on MI theory. It is designed to identify the intelligence type of Japanese students whose major is related to rehabilitation and welfare, and to examine correlations between students' intelligence and other variables in terms of cognitive, psychological, and behavioral aspects. The study involved 147 first and second year students. Two types of questionnaires were administered to these students. The data were stored in SPSS and used for descriptive and correlational analysis. This study found unique characteristics of participants' MI profiles as well as gender differences. From the correlational analysis, some significant correlations were found between students' MI profiles and their perspectives and attitudes toward English. Future studies can use these findings to describe ways of constructing and implementing MI theory-based English instruction for remedial purposes.

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Statement of the Problem

Because globalization highlights the importance of communication skills in English, the Japanese government took various measures to build a system in which individuals are able to control English language. However, reports of falling English skills among new students are of great concern to universities. Responding to such a situation, various measures, including implementing remedial courses, proficiency-based classes, pre entrance education, and Content and Language Integrated Learning (CLIL) approach, were introduced.

Despite these measures, university students' English levels are getting worse and the English ability gap in students has widened over the years. The target university of this study faces the similar issue. The results of English placement tests have been heading downhill for seven years. Although English classes at the university use CLIL, students who have lower English skills struggle with requirements and have low motivation for English classes. Therefore, the possibility of using Multiple Intelligence (MI) theory in English learning is suggested. MI theory, introduced by Howard Gardner, takes into account individual differences and needs and helps teachers to make use of students' strengths and compensate their weaknesses.

According to Garner, individuals possess eight or more intelligences, which include linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, naturalistic, interpersonal, and intrapersonal intelligence. Identifying leaners' intelligence profiles has strong ramifications; teachers can accommodate different individuals more successfully according to their orientation to learning. In order to apply MI theory to university classrooms in Japan, it is necessary to identify MI characteristics of students and examine the related variables.

Purpose of the Study

The study is divided into two parts.
The aims of the first part are to find:
① Rehabilitation majors' perceptions and attitudes toward English and English classes
② Participants' English language performance
③ Rehabilitation majors' MI profiles
④ Gender differences of MI

The aims of the second part are to find:
① Correlations between students' MI profiles and their English performance
② Correlations of students' MI with their perceptions and attitudes toward English language learning

Significance of the Study

There are numerous studies on MI in primary and secondary school students. However, research in higher education is limited, especially in Japan. Increased concern about low levels of English proficiency and diversity among university students suggests that universities need radical measures to respond effectively. MI theory is believed to offer some efficiency. Available studies related to MI theories at university level focus on various majors in different foreign countries. However, as far as is known, no studies focus on students who are majoring in a rehabilitation or welfare. Therefore, this study will add reliability and validity to different populations regarding MI profiles and their relation to psychological, behavioral, and cognitive aspects. This investigation will help design and implement effective English classes. Under MI theory based instruction, students who are not academically or linguistically strong in English could have more options for learning, and be more motivated. It is hoped the study will help utilize individualized, student-centered strategies work in large student cohorts.

Literature Review

The literature review section will present as follows:
1) MI Theory
Summary of MI Theory
Description of each intelligence
Implications of MI theory
2) University students' profile of MIs
Differences among majors
Japanese students
Gender differences
3) MI profiles and correlational studies

1) MI Theory

Summary of MI Theory

MI theory was developed by Howard Gardner. He defines intelligence as "the ability to solve problems, or to create products, that are valued within one or more cultural settings" (Gardner, 1983/2003). Gardner, therefore, establishes a broader concept of intelligence, rather than seeing it dominated by a single ability. Gardner argues that human beings possess several intelligences that relate to a person's unique aptitude and set of capabilities. These intelligences are independent of each other and each individual has a different profile of intelligences. He also argues that intelligences can be strengthened if they have an environment that nurtures them, and weakened if ignored.

Description of the 9 Intelligences

The following are the intelligences Gardner proposes (1983/2003):
Interpersonal Intelligence. The ability to understand the intentions and feelings of others. The ability to interact effectively with others with verbal and nonverbal communication skills.

Intrapersonal Intelligence. The ability to recognize and understand oneself, develop a sense of self-awareness, and introspective awareness of beliefs and thought processes.

Logical-Mathematical Intelligence. The ability to complete mathematical operations such as calculations and quantifications, detect patterns, reason deductively, and think logically, abstractly, and conceptually.

Linguistic Intelligence. Having well-developed verbal skills. The abilities to manipulate languages effectively, to memorize and comprehend complex written languages, and to have mastery of spoken language.

Naturalist intelligence. The ability to recognize and categorize living things, such as plants and animals, and have sensitivity to the natural world.

Bodily-Kinesthetic Intelligence. The ability to control, manipulate, and coordinate bodily movement with well-developed mental abilities and physical skills.
Visual/Spatial Intelligence. The ability to interpret visual images accurately and

abstractly, have spatial reasoning, manipulate images, and have good graphic and artistic skills.

Musical Intelligence. The ability to recognize, reproduce and create musical pitches, tones, timbre, and rhythms, and have a talent for singing and playing musical instruments.

Existential Intelligence. The ability to deal with deep questions about human existence, such as the meaning of life, why do we die, and how did we get here?
Although MIs are anatomically distinct, they very rarely operate independently (Gardner, 1983/2003).

Implications of MI Theory

According to Gardner (1983), education and society tends to value only mathematical or linguistic intelligences, which excludes those who develop different types of intelligence. Using MI in educational settings is believed to create more opportunities to develop the potential of all individuals in which learners manage their own learning, value their strengths, and increase motivation. Knowing MI exists, teachers can create an effective learning environment in which students' value and promote their strengths. At the same time, teachers can review their approach from different perspectives, to ensure they meet different needs and interests of students.

2) University students' MI profiles

Differences Among Majors

Although the number of studies involving MI theory and practice at the university level is limited, research available attempted to identify the profiles of students in different majors.

The following two studies focused on MI profiles of engineering students.

Salehi and Gerami (2012) focused on 50 university students majoring engineering to find the relation between intelligence types and achievement score. Results revealed that logical-mathematical intelligence scored the highest, followed by interpersonal and body-kinesthetic intelligences. Linguistic intelligence was the lowest in these students.

Faller and Jubilo (2013) involved 413 engineering students, and found that the top three intelligences were logical-mathematical, musical, and body-kinesthetic. Both studies found that engineering students possess high logical-mathematical intelligence.

The following studies focused on students of different majors, including chemistry, athletics, government, and English.

Kutz and Campbell (2013) studied 85 athletics students (AS) and revealed that body-kinesthetic intelligence was rated highest, followed by intrapersonal intelligence, while verbal intelligence was the lowest. A study by Shahzada, Ghazi, Khan, Iqubal, and Shabbier (2011) involved 714 government major students and found that females rated themselves higher than males in perceived intelligence. For females, the highest intelligence was body-kinesthetic, followed by intra and interpersonal intelligences. For males, the highest was also body-kinesthetic, followed by inter and intrapersonal intelligences. For both genders, the lowest were musical followed by logical intelligence. Firozjael, et al. (2013) aimed to identify the relation between MIs, learning behavior, and English learning, involving 50 English major students. It was found that the highest was musical followed by naturalist, while the lowest was logical followed by visual intelligence.

Japanese Students

Although few studies have focused on the MI profiles of Japanese university students, a study by Tsuneyasu, Akutsu and Suzuki (2008) involved 44 Japanese students whose majors comprising technology, international studies, education, and agriculture. The technology majors were found to rank high in linguistics, spatial, and natural intelligence while international majors tended to have higher scores on each intelligence, compared to other majors, and were especially high in logical-mathematics, musical, and intrapersonal intelligence. Education and agricultural majors have similar MI profiles. Yamauchi (2014) studied 25 nursing students and found the most prevalent intelligence was musical followed by interpersonal, while the least prevalent was logical-mathematical, followed by linguistic intelligence. As described above, research on various majors indicates distinguishing characteristics are attributable to different groups. However, the limited number of studies as well as the sample sizes makes it difficult to draw a definitive conclusion.

Gender Differences

Some MI research examined gender differences. The following studies found no significant differences between males and females.

Saricaoglu and Arikan (2009) involved 144 (78 female and 66 male) students and found no significant gender differences in intelligence types. Only linguistic intelligence displayed a variation, but it was not significant (sig. 2 tailed=.020) Masoomeh's study (2013) involved 40 university students whose English levels were intermediate. Findings indicated that linguistic, logical, and musical intelligence were more common among females. Significant differences between genders were only found in linguistic intelligence in which females shows higher intelligence.

On the other hand, other studies have found significant gender differences. Shahzada, et al. (2011) involved 714 government majors, including 379 males and 335 females. It was found that overall female students rated themselves higher than males. Females rated higher in terms of perceived linguistic intelligence, visual/spatial intelligence as well as inter and intrapersonal intelligence. On the other hand, male students rated themselves higher in logical/mathematical intelligence. Sadeghi (2013) studied 112 female and 138 male university students. It was found the mean scores of visual and interpersonal intelligence were high in both groups. However, the female group showed the highest score in interpersonal, followed by visual/spatial intelligence.

In the above-mentioned Faller and Jubilo's study (2013) revealed that males possessed the highest body-kinesthetic, logical-mathematical, and musical intelligences whereas females had the highest musical, interpersonal, and logical-mathematical intelligences. Hanafiyeh (2013) investigated 140 students, aged 18 to 24. The study revealed that intrapersonal, linguistic, logical-mathematical, and musical intelligences were common among females. Significant differences between males and females were recorded in linguistic intelligence.

In conclusion, gender differences in MI profiles show mixed results and are not conclusive.

3) MI profiles and Correlational Studies

Many studies using MI theories measure MI profiles in relation to other variables such as dispositions, attitudes, and cognitive abilities.

The following studies focus on learning behavior.

Mohammadzadeh and Jafarigohar (2012) studied relations between MI and willingness to communicate, measured by the Willingness to Communicate (WTC) scale developed by McCroskey (1987). It involved 517 university students, which result indicates that linguistic, musical, and interpersonal intelligence were significantly correlated with willingness to participate in L2 communication. Firozjael et al (2013) aimed to identify the relation between MIs, learning behavior, and English learning. The study found some linkages between MI, preferred learning styles, and English performance. Students' attitudes toward language learning were positively correlated to musical and intrapersonal intelligences, while anxiety was related negatively with visual intelligence. A kinesthetic learning style was related to naturalist intelligences. English performance was related to intrapersonal intelligence. Yi-an (2010) focused on 2425 college students to identify the role of MI in foreign language learning behavior and performance. In relation to motivation, musical and interpersonal intelligences showed a strong correlation with motivation while body /kinesthetic intelligence showed a negative correlation.

Some studies focused on the relations with affective domains, such as anxiety and self-efficacy. Saidi and Khorsravi (2013) aimed at investigating the possible interface between three intelligences, including linguistic, inter- and intrapersonal intelligence and foreign language classroom anxiety in 110 Iranian EFL learners. It was found a low negative correlation between these intelligence types and foreign language classroom anxiety. Among the components of foreign language classroom anxiety, test anxiety and fear of negative evaluation correlated with linguistic intelligence. Zarei and Taheri's study (2013) involved 148 university students. Regarding relations between the learner's linguistic, inter and intrapersonal intelligence profiles and their foreign language classroom anxiety, the study revealed a negative low correlation. The study suggests that musical and linguistic intelligences were predictors of general self-efficacy.

While the above studies focused on psychological and behavioral aspects and their relation to MI, some research studied correlations of MI with cognitive aspects,

language proficiency, such as listening, writing, reading, vocabulary, and grammar skills. Naeini and Pandian (2010) studied the relation of MI to listening proficiency. The participants were 60 university students, including 50 females and 10 males. Their listening comprehension proficiency was measured using the listening section of a TOEFL test. The results indicated no significant relation between the listening score and any MIs.

The above mentioned Salehi and Gerami's study (2012) examined the relation between intelligence types and achievement test scores that included grammar, vocabulary, reading comprehension, and idioms. The results revealed a low correlation between achievement scores and MIs. The study also found that intrapersonal and body-kinesthetic intelligence are negatively correlated with achievement scores significantly. Razmjoo (2008) studied 278 Ph.D. candidates, examining the relation between language proficiency and MIs. The results indicated no significant relation between language proficiency and intelligences in terms of combination, or any type of intelligence in particular. Moreover, he concluded that no intelligence type was a predictor for language proficiency.

The above three studies found no significant correlations while other studies reveal contrary findings. Saricaoglu and Arikan (2009) examined the relation between MIs and success in grammar, listening, and writing, involving 144 university students. The results indicated a positive relation between writing scores and musical intelligence, while a significant negative correlation was found between grammar and bodily-kinesthetic, spatial, and intrapersonal intelligences. Javanmard (2012) studied the relation between MI and vocabulary performance on 115 English majors. The study found body-kinesthetic intelligence had a positive relation with vocabulary test scores and body-kinesthetic and musical intelligences were better predictors of vocabulary test performance. Hanafiyeh (2013) sampled 140 university students to study language success and its relation to MIs. The study revealed a negative correlation between test scores in grammar and bodily-kinesthetic, spatial, and intrapersonal intelligences, whereas there was a positive correlation between musical intelligence and writing.

Razak and Zaini (2014) focused 60 science-oriented students. Students' reading competency was measured by the Reading Competency in the Malaysian University English Test (MUET). The findings showed a positive correlation of the students' reading scores with musical and interpersonal intelligences, while intrapersonal and verbal-linguistic intelligences showed negative correlations. However, the study

revealed that MIs cannot predict students' reading skills and suggested this was due to individual differences in learning styles rather than MI preferences. In the aforementioned Yi-an study (2010), it was found that musical and verbal/linguistic intelligences were positively related to student listening scores, while naturalist intelligence was negatively related. Moreover, reading scores were related to musical and linguistic intelligence, while visual/spatial intelligence was negatively related.

Although the above studies mentioned mixed results, two studies found a negative correlation between grammatical skills and body-kinesthetic, visual/spatial, and intrapersonal intelligences. Moreover, all five studies showed positive correlations of musical intelligences with language proficiencies, such as writing, listening, and reading. Throughout the review of research on MIs, university student profiles, gender differences, and the possible relations between MI and different variables in psychological, behavioral, and cognitive aspects were revealed. However, as mentioned above, few studies focused on Japanese students, and, of those, the number of participants was very limited, which makes difficult to generalize results. In order to propose a MI based approach to improve low English performance in Japanese university students, studies involving larger samples are necessary. The current study focus on approximately 150 students in rehabilitation majors, such as Physical Therapy (PT), Occupational Therapy (OT), and Welfare and Psychology. The study proposes to develop a new approach based on MI theory.

Participants

The study participants comprised 147 first and second year students, including 92 males and 55 females who take required English classes. One hundred three are OT, 33 are PT, and 11 are Welfare and Psychology (WP) majors.

Research Methods

The questionnaire was completed in class. The purpose of the study, students' confidentiality, and the right to accept or refuse participation was explained. Participants were also advised that responses could be anonymous. Two types of questionnaires were completed. One consisted of Yes-No questions, Likert scale questions, and multiple answer questions. It elicited students' background information, perspective, and attitudes toward English learning and current classes. The second questionnaire was the MI profile test, modified by the author, but based on Gardner's MI Model. (Questionnaires are available on request.) In addition, a participant

placement score (35 points total) and a final score of the first semester (80 points total) were used for this study.

Data Analysis

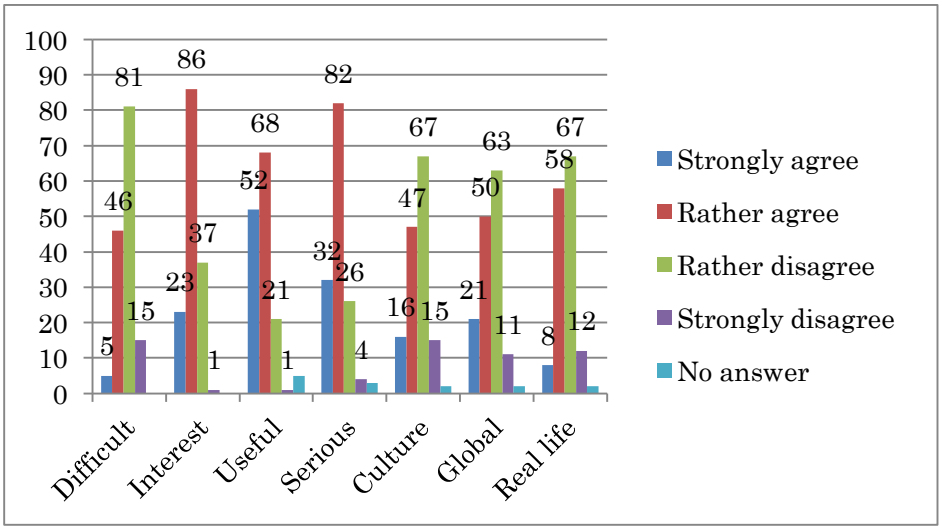
The data were stored in SPSS software. Both descriptive approaches, which include rank order, numerical interpretation, distribution, and frequency, and correlational approaches were applied. To examine gender differences in MI, an independent sample t-test was performed. The data was also analyzed inferentially by means of correlation analysis.

Results

The results are described in a manner corresponding to the aims of this study stated the above.

The first part describes in the following four points:

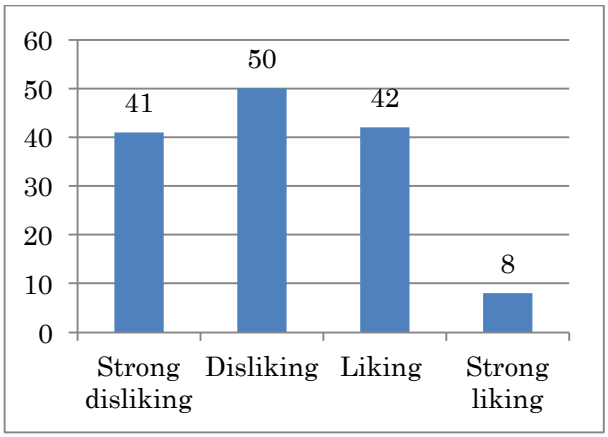
① Rehabilitation major perceptions and attitudes toward English and English class.
Graph 1 describes participants' responses on questions related to their perception and attitudes toward English and English classes. The words in the chart indicate the following statements with which participants agreed or disagreed:
Difficult: I feel the current English class is difficult.
Interest: I feel the contents of English classes are interesting.
Useful: I believe the current English classes will be useful to my future.
Seriously: I am working on English classes seriously.
Culture: I am interested in learning about different cultures.
Global: I have a feeling the world is globalized.
Real life: I can't relate English to my real life situation.



Graph 1: Students' Perceptions and Attitudes toward English and English Classes

As indicated the above, 34% participants found current English classes difficult (N=51 - 46+5); however, 74% (N=109-23+86) believed the content of the English classes were interesting. One hundred and twenty participants (81.6%) believed learning English was useful for their future and 114 (78%) stated they worked on English classes seriously. Forty-three percent (N=63) wanted to learn about other cultures and 48% (N=71) were aware of globalization, whereas 44.9% (N=66) could not relate English learning to their real lives.

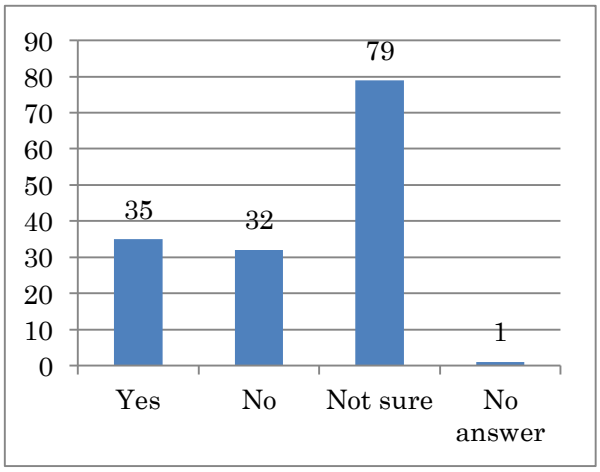
The next graph shows students' attitudes toward English.



Graph 2: Students' Attitude to English and English Classes

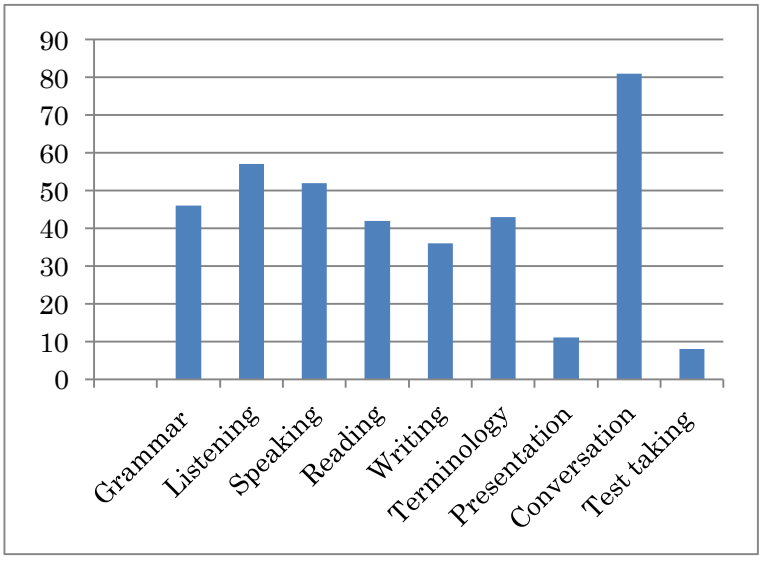
As indicated above, 64% respondent disliked English while 36 % liked it. Those who stated they disliked English very much comprised 29%, whereas 6% had a strong liking.

The following graph shows whether students would take English classes as an elective.



Graph 3: Students' Perceptions on English as an Elective

This revealed that less of than quarter (24%) would take English even it were an elective, while almost same percentage (22%) said they would not. Over half (53%) claimed that they were unsure. The study also examined the kinds of English skills the participants desired to acquire and the result is shown in Graph 4.



Graph 4: Desired Skill Improvement

The vertical axis indicates the number of responses to a multiple responses questionnaire. The most desired skills were conversation, followed by listening and

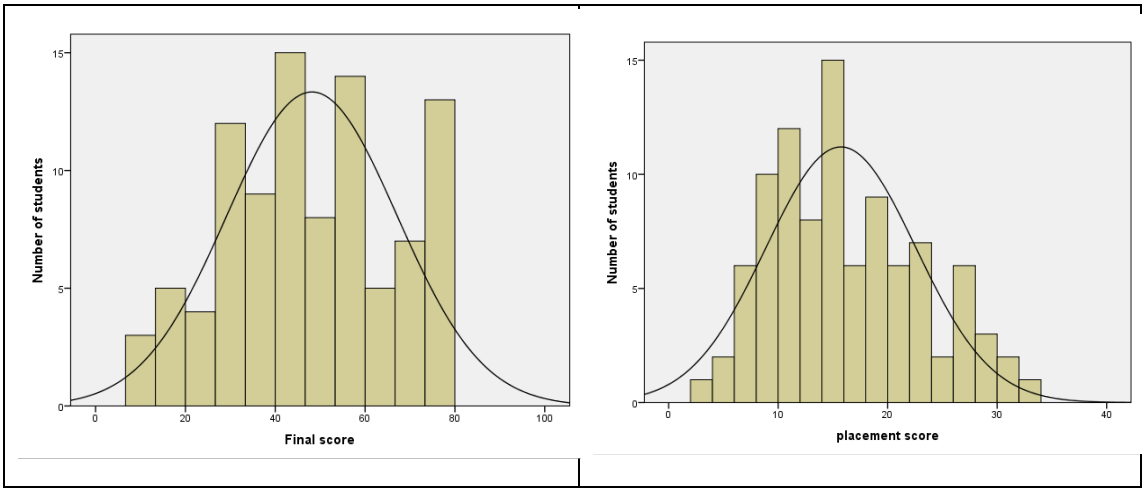
speaking. Only limited number of participants expressed a desire to improve testing or presentation skills in English.

② Descriptions of participants' English performance

Table 1 shows the participants' final and placement scores, and the graph 5 indicates score distribution of both examinations.

	Lowest	Highest	Mean	SD
Final score (80 point full mark)	7	80	48.16	18.946
Placement test score (35 point full mark)	3	32	15.73	6.839

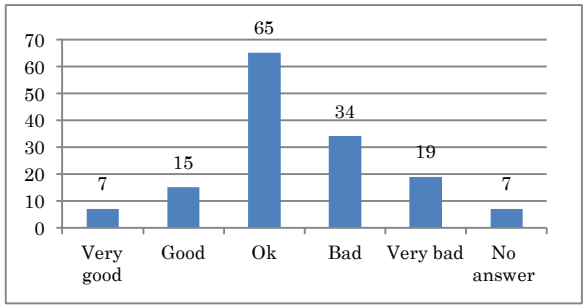
Table 1: Participants' final and placement scores



Graph 5: Final and Placement Test Score Distribution

The mean of the final score is 48.16 of the 80 points full mark test. Also revealed, is a huge gap between the highest (80) and the lowest (7) scores with a standard deviation of 18.946. In terms of placement test score (35 points= full mark) the mean is 15.73. Similar to the result of the final score, a huge gap between the highest (32) and the lowest (3) was revealed by the analysis.

Participants' English performance in high school was revealed by self-evaluation. The results are as follows:



Graph 6: Students' Self-Evaluation of High-School English

As shown by Graph 6, more than half of respondents evaluated their high-school English as very good (N=7 4.8%) good (N=15 10.2%), and Ok (N=65 44.2%), while the rest self-rated as bad (N=34 23.1%) and very bad (N=19 12.9%). About one-third believed their English grade was not good while less than one-fifth believe they were good at it.

Table 2 shows the result of a correlational analysis of participants' English performance, including final and placement scores and self-evaluation of high-school English grades. Regarding the proficiency scores, it shows a significant relation between participants' final score and the placement score (r=.272, p < .005), but not with their self-evaluation on high-school English.

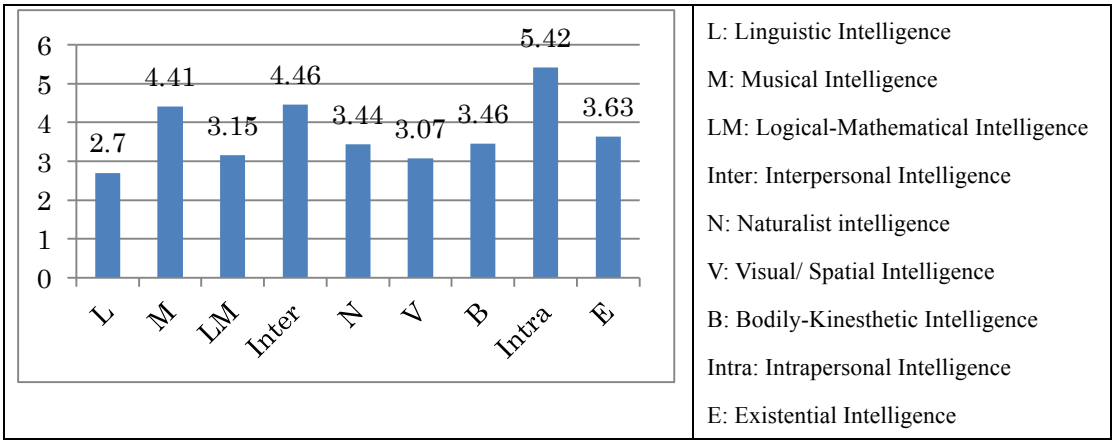
		Final score	Placement test score	High-school English grade
Final score	P	1	.272**	.047
	Sig.(2tails)		.008	.648
	N	95	94	95
Placement test score	P	.272**	1	-.180
	Sig.(2tails)	.008		.078
	N	94	96	96

** Correlation is significant at the 0.05 level (2-tailed)

Table 2: Corrections of Participants' English proficiency

③ Rehabilitation majors' MI profiles

The following graph describes the participants' medium score (max=10 points) for each intelligence.

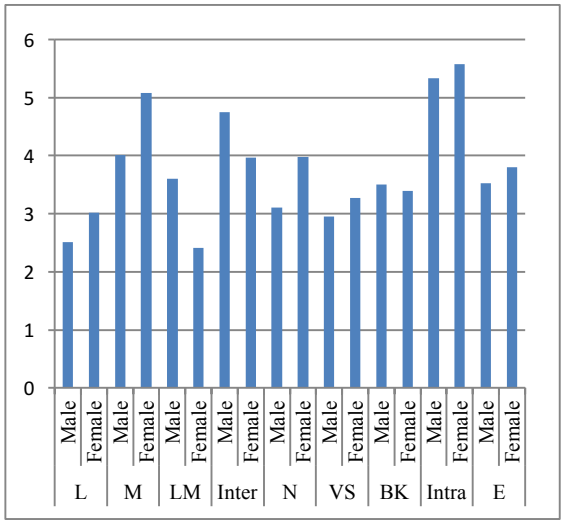


Graph 7: Participants' mean scores of MI

As indicated by Graph 7, intrapersonal intelligence had the highest mean score (5.42) followed by interpersonal (4.46) and musical intelligence (4.41). The lowest was linguistic intelligence (2.70) followed by visual/spatial (3.07) and logical-mathematical intelligence (3.15).

④ Gender differences of MI

The next graph (Graph 8) shows the medium scores of each intelligence by gender.



Graph 8: Gender Differences of Each Intelligence

As indicated, for females, the three highest mean scores of MI, in order, were intrapersonal (5.57), musical (5.08), and interpersonal (3.96), while the lowest was logical-mathematical (2.41), followed by linguistic (3.02). For males, the highest mean score was also intrapersonal (5.33), followed by interpersonal (4.75) and musical (4.75). The lowest was linguistic (2.51), followed by visual/spatial.

	Leven's test		Test for population mean						
								95% confidence interval	
Intelligence	F	Sig.	t	df	Sig. 2tails	Mean dev	SE	LCL	UCL
L	.256	.614	-1.630	134	.105	-.514	.315	-1.137	.110
M	.014	.907	-2.521*	134	.013	-1.067	.423	-1.904	-.230
LM	.097	.755	2.846*	134	.005	1.188	.418	.362	2.014
Inter	1.431	.234	1.998**	134	.048	.792	.397	.008	1.577
N	.108	.743	-1.961	133	.052	-.873	.445	-1.754	.008
VS	.694	.406	-.805	133	.422	-.322	.400	-1.114	.469
BK	.990	.322	.312	133	.755	.108	.345	-.575	.791
Intra	8.623	.004	-.598	128	.551	-.235	.393	-1.014	.543
E	1.114	.293	-.696	133	.487	-.280	.402	-1.076	.516
** Correlation is significant at the 0.05 level * Correlation is significant at the 0.01 level (2-tailed)									

Table 3: T-test Results for gender differences

Table 3 indicates T-test results for examining gender differences. Significant gender differences were observed in logical-mathematics (t= 2.846, p < .001), in which males showed a higher mean score; musical (t= -2.521, p < .001), in which females showed a higher mean score; and interpersonal (t=1.998, p < .005), in which females showed a higher mean score.

The second part of this section describes the following two points, which all involves a Pearson's correlational analysis.

① Correlations of students' MI profiles and their English performance

Table 4 indicates the correlation between MI profiles and participants' placement test scores, scores of the final examination, and self-evaluation on high-school English grades.

		Lingui.	Music	Logic	Inter	Natural	Visual	Body	Intra	Exist
Final score	Pearson	-.086	.053	.095	.149	.036	.050	.229*	.165	.018
	Sig. (2tailed)	.428	.627	.382	.171	.741	.652	.035	.132	.871
	N	86	86	86	86	85	85	85	85	85
Placement score	Pearson	.023	-.034	.119	-.008	.046	.079	.039	-.070	.164
	Sig. (2tailed)	.830	.754	.271	.943	.673	.467	.722	.517	.128
	N	87	87	87	87	87	87	87	87	87
High school grade	Pearson	-.124	-.111	-.088	-.155	-.094	-.135	-.108	-.024	-.140
	Sig. (2tailed)	.149	.199	.306	.071	.277	.117	.214	.781	.105
	N	136	136	136	136	135	135	135	135	135

** Correlation is significant at the 0.05 level (2-tailed) * Correlation is significant at the 0.01 level (2-tailed)

Table 4: MI profiles and students' English performance

As indicated, there were no correlations except that bodily-kinesthetic intelligence has a weak, but a significant relation with students' final scores (.229 at p < .001).

② Correlations between students' MI profiles and perceptions and attitudes

Table 5 shows the results of the analysis.

		difficult	interest	useful	elective	seriously	culture	global	dislike	like	real
Ling.	P	.084	-.114	-.077	-.083	-.059	-.049	-.049	.153	-.049	-.047
	Sig.	.331	.186	.373	.336	.495	.571	.571	.075	.573	.587
	N	136	136	136	136	136	136	136	136	136	136
Music	P	.019	-.203*	-.001	-.120	-.046	-.097	-.097	.131	-.098	-.095
	Sig.	.827	.018	.988	.163	.594	.262	.263	.129	.255	.270
	N	136	136	136	136	136	136	136	136	136	136
Logic	P	.147	-.067	.036	-.113	-.093	-.059	-.060	.038	-.059	-.058
	Sig.	.088	.436	.681	.189	.282	.496	.491	.659	.492	.502
	N	136	136	136	136	136	136	136	136	136	136
Inter	P	.043	-.104	.047	.057	-.031	-.079	-.079	.195*	-.080	-.078
	Sig.	.623	.229	.589	.510	.720	.361	.358	.023	.355	.365
	N	136	136	136	136	136	136	136	136	136	136
Natural	P	.186*	-.105	-.112	.018	-.106	-.070	-.071	.145	-.071	-.068
	Sig.	.031	.224	.196	.831	.223	.417	.415	.093	.411	.431
	N	135	135	135	135	135	135	135	135	135	135
Visual	P	.087	-.079	-.164	-.120	-.072	-.087	-.087	.129	-.087	-.085
	Sig.	.315	.361	.057	.167	.404	.318	.318	.135	.315	.325
	N	135	135	135	135	135	135	135	135	135	135
Body	P	.150	-.195*	-.067	-.155	-.062	-.062	-.062	.151	-.063	-.060
	Sig.	.082	.023	.438	.072	.474	.478	.476	.080	.469	.489
	N	135	135	135	135	135	135	135	135	135	135
Intra	P	.210*	-.173*	.064	-.089	-.049	.030	.029	.130	.029	.031
	Sig.	.015	.045	.463	.305	.576	.734	.741	.134	.739	.721
	N	135	135	135	135	135	135	135	135	135	135
Exist	P	.212*	-.256**	-.090	.051	-.154	-.144	-.145	.148	-.145	-.142
	Sig.	.013	.003	.297	.557	.075	.095	.092	.088	.094	.101
	N	135	135	135	135	135	135	135	135	135	135

** Correlation is significant at the 0.05 level (2-tailed) * Correlation is significant at the 0.01 level (2-tailed)

Table 5: Relations between MI and Participants' Perceptions and Attitudes

As indicated, positive correlations were found with students who feel difficulty with English and naturalistic (.186 p<.001), intrapersonal (.210 p<.001) and existential (.212 p<.001) intelligences. There was a correlation between interpersonal intelligence and students' dislike of English. Meanwhile, a negative correlation was found in students who are interested in English with musical (-.203 p<.001) bodily-kinesthetic (-.195 p<.001), intrapersonal (-.173 p<.001) and existential (-.256 p<.005) intelligences.

Discussion and Implications

The two main objectives of the study were to investigate the MI characteristics of Japanese university students and examine the relation of a particular intelligence with cognitive, psychological, and behavioral variables.

The descriptive data of this study revealed the overall characteristics of this sample group. Although many (64%) do not like English in general, they were likely to show interest in learning about other cultures and the majority was aware of globalization. Moreover, they believe English is useful for their future. Regarding current English classes, they thought it was difficult, but interesting and at an appropriate level. The skills students desired to acquire most were conversation, followed by listening and speaking skills, while presentation or test-taking skills were least desired. It seems that taking English tests, such as the TOEIC or EIKEN Test, or presenting their research in English speaking conferences in the future may not be included in their vision. Rather, these participants showed their desire to acquire practical and immediate use of English skills for their daily lives or future careers. It seems the connection between the real world and English learning should be strengthened so that students are motivated to learn and use various English skills. Moreover, participants showed a negative or passive attitude for taking elective English classes. Currently, the participants are taking English classes designed on a content- and conversation-based approach, intended to impart meaningful, pragmatic, and useful English. However, the result of the study raises questions about current practice. Reforming English classes is necessary to change students' views and attitudes which motivate them better to take English classes, even if elective.

Regarding to their English performance, the noteworthy feature of this group was a large gap between the high and the low scorers. In such a mixed-ability level group, the main concern is the level and the content of classes. Designing instructions that more students can understand, maintaining classes for the lower level students, and

motivating higher or more complex learning for higher-level students are the biggest challenges.

MI Profile Characteristics

Although gender differences were found in this study, the most prominent intelligences among these students were intrapersonal, musical, and interpersonal respectively. On the other hand, the least relevant was linguistic intelligence. According to Gardner, people with high linguistic intelligence have well-developed verbal skills (1983/2003). From this standpoint, linguistic intelligence may have a strong relation with English language performance. As this sample group has low linguistic intelligence, this could contribute to their lower performance of English. However, the study revealed that there are no significant relations between linguistic intelligence and the three types of English performance. Yet, the literature review on linguistic intelligence showed mixed results and is not conclusive. Therefore, such MI profiles with low linguistic intelligence should not take for granted and need to be carefully considered.

The study also conducted correlational analyses examining relations between particular intelligences and participants' attributional factors such as attitudes and psychological states. The discussion here thus focuses on three dominant intelligences, including intrapersonal, musical, and interpersonal, found in this group. People with high intrapersonal intelligence are good at recognizing and understanding themselves, developing a strong sense of self-awareness, and having introspective awareness of their beliefs and thought processes. Those with high musical intelligence have the ability to recognize, reproduce, and create musical pitches, tones, timbre, and rhythm. They are good at singing, composing music, and playing music instruments. People with high interpersonal intelligence understand the intentions and feelings of others. They interact effectively with others and use effective verbal and nonverbal communication skills. The correlational analysis revealed that interpersonal intelligence is correlated with students' dislike of English and musical intelligence is negatively correlated with students' interests toward English and English learning. Moreover, intrapersonal intelligence is correlated with students' difficulty with English and negatively correlated with their interest in it. These three intelligences had no relation to desired skills. Negative feelings and attitudes, as well as difficulty among this group, could lead to low motivation. Working on affective filters should be considered. Meanwhile, in the current situation, students' recognition of their MI characteristics can be an effective tool to improve motivation. For example, students

who have high intrapersonal intelligence may have strong affective variables, such as self-esteem and anxiety. They may be good at understanding their own feelings and monitoring their learning process. When these students recognize their weaknesses and strengths, the instructors' role is to make this recognition beneficial. Independent work, individualized projects, and personal journals, in which students can monitor their learning process and achievement, may motivate learning.

Overall, the study concludes that MIs do not play a significant part in students' cognitive domain, such as English language performance. However, some intelligences are found to be related to behavioral and psychological domains. It is not easy to implement activities that stimulate all different intelligence features, since each individual has a different MI profile and different levels of English proficiency. However, the current research provides a good opportunity to examine existing curriculums or instruction from different perspectives. Students' recognition of their own intelligences, making use of these, and utilizing MI principle based instructions may be beneficial in the ESP classroom for development of student-centered teaching techniques.

Limitation of the Study

Although the current study provided quantitative evidence in an MI study on Japanese university students, the results may not apply to different populations. This research is a small-scale study, focused on rehabilitation university majors. However, this preliminary study provides a foundation for further research in which MI theory based instruction will be designed and implemented.

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