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**MULTIPLE INTELLIGENCE PROFILE IN LANGUAGE LEARNING: AN
ERITREAN CONTEXT**

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Abstract:

All Multiple Intelligences (MI) play different roles in the learning and in the teaching. In this regard, the present paper attempts to examine the multiple intelligence profile of students, especially sophomores (2nd year diploma students of English Language Teaching (ELT)) in Eritrea. The present study examines the role of MI in language learning through the latest version of the Multiple Intelligences Profiling Questionnaire (MIPQ III) that is based on Howard Gardner's (e.g., 1983, 1999) MI theory. For the present study the participants were 80 sophomores (2nd year students in ELT diploma) from the Eritrea Institute of Technology. Samples were selected using the non-probability sampling technique. To find the potential relationship between the types of intelligences statistical analysis was conducted in three phases. Primarily, internal consistency of the data was assessed through reliability analysis. Using SPSS, frequencies were computed in each demographical variables of the questionnaire. Correlation analysis was conducted to evaluate the internal relationship among the factors of multiple intelligences. Results show that the multiple intelligence factors such as Linguistic Intelligence, Logical-mathematical Intelligence, Spatial Intelligence, Bodily-kinesthetic Intelligence, Musical Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence and NI- Naturalist Intelligence are having strong statistical positive significance between each and every factor of MI.

Keywords: *Multiple Intelligence, sophomore, English as Foreign Language, Gardner's Multiple Intelligence Theory, Language Learning.*

1.0 Introduction

English Language Teaching (ELT) has been presently receiving the attention in Northeast Africa, essentially in the case of students reading in the universities. The reason is that English is required for joining many higher studies at the universities and high-paying professions. Per se, the teachers who teach English as a foreign language (EFL) at the educational institutions have so many problems like making the pupils absorb efficiently because they do not know pupils' various capabilities like their intelligences and inclination in the learning. The teaching methods can be made useful, efficient, and motivating by optimising the talents of the students via the tutoring techniques that are on the basis of Multiple Intelligences (MI) Model, which is also the aim of this paper.

The concept of human potential is rejuvenated by the educational specialists with the help of MI theory proposed by Gardner (1983). This theory defied the traditional view of intelligence, which the people have imbibed tacitly from the culture that they belong to psychology or overtly from the educational courses they have undergone. Gardner (1983) rebuffed the stable and monolithic conception of intelligence and he did not endorse the idea of finding and estimating the intelligence with the help of tests. According to him, humans have a sequence of relatively independent intelligences rather than a single intelligence as described by the Intelligent Quotient (IQ).

Gardner (1983) observed that the human beings possessed minimum of 7 discrete units of intellectual operation. A measurable and observable ability was assigned to each unit. Intelligence is defined by Gardner (1999) as a "bio-psychological potential for information processing that can be

activated in a cultural setting to solve problems or fashion products that are of value in a culture” (p.33-34). While the conventional definition of intelligence included only mathematical and verbal intelligences which were said to be operating under IQ, this new outlook of Gardner on intelligence is rather novel. He initially listed 7 intelligences. Then, an additional intelligence was added to make them 8. These were linguistic intelligence (understanding of written and spoken language, the capability to learn languages and the ability to utilise language in order to achieve goals), logical mathematical intelligence (the ability to examine the problems using the logic, perform mathematical operations, and explore the issues technically), spatial intelligence (the ability to realise and work on the patterns of wide space those utilised, for example, by pilots and navigators as well as the patterns of very confined areas), bodily-kinesthetic intelligence (the capability of utilising the whole body or the body parts like mouth or hands of an individual to provide solution for the problems or fashion products), musical intelligence (talents that govern the composition, performance, and appreciation of patterns in music), interpersonal intelligence (the potential of an individual to realise the motivations, intentions, and desires of another individual and subsequently working efficiently with other people), intrapersonal intelligence (potential to realise oneself, to derive an one's own efficient working model comprising of a person's fears, desires, and capacities - and to apply this information efficiently in controlling a person's life) and naturalist intelligence (the potential of an individual to understand the fauna and flora to distinguish subsequently in the world, also use his capability usefully).

As per the MI model, the individuals possess complete range of intelligences. The similar potential profiles are not possible for two individuals. They do have various experiences, in spite of the genetic materials being the same. It cannot be said that an individual can act intelligently, if he or she has strong intelligence (Gardner, 2006a). Contrarily, the foundations of the MI model are presented by Fleetham (2006). They are, each individual is clever inherently; there are at least 8 ways of demonstrating the intelligence; the intelligences can work in tandem; each person possesses his/her intelligence; and there is a potential for the intelligences to grow and develop. In short, the core of the MI theory is that all the individuals are intelligent.

However, the application of MI theory differs according to the educational institution. The MI model can be utilised by the teachers according to the needs of their pupils and the way the model fits the culture and the learning environment (Hoerr, 2000). Fleetham (2006) has also admonished that the theory of MI is neither a catch up programme nor a strategy, nor is it a curriculum. On the other hand, it is a philosophy and since 80s, it has been used widely all over the globe. Richards and Rodgers (2001) have opined that MI model is entirely a philosophy that is based on the learners and it explains the multiple dimensions manifested by the human intelligences, which must be recognised and improved in the educational sector. They have also stated that, for the MI based language teaching there is no suggested or specific syllabus.

However, in order to substitute what is known as syllabus, Lazar (as cited in Richards & Rodgers, 2001) suggests a fundamental developmental sequence. There are 4 phases in this sequence. They are arousing the intelligence, optimising the intelligence, tutoring with/for the intelligence, and imparting the intelligence. After the arrival of MI theory in 80s, various researches were done on several fields of educational sector consisting of English as second language/English as foreign language (ESL/EFL) classes at several levels. As the educational experts all over the globe started to celebrate this theory, the research community fostered the interest in this theory and examined the role of this theory and its efficiency. As an instance, Ibnian and Hadban (2013) probed the implications of MI theory in the field of ELT. Their research revealed that, by utilising various intelligences and tasking the students with various activities that could encouragingly influence their learning process, the students of ELT classes could achieve inspired learning.

Andrews et al. (2006) in yet another research examined the impact of teaching the grammar on writing development. However, according to his study, the effect of teaching the grammar was negligible. However, the efficiency could be achieved in teaching the sentence combination. As there was inadequate quality of the study, he recommended conducting further researches. Madkour and Mohamed in their study tried to research the effect of the MIs of the university students on the proficiency of the language and the motivation. The research identified that, in order to increase the proficiency in the language, the conventional form of teaching led the students to memorising the rules of the language, which proved to be ineffective. However, when the MI profiles of the students were known, the students were highly optimistic, which did help with their language learning (Madkour & Mohamed, 2016). In a study done by Derakhshan and Faribi, the researchers investigated the impact that made by MI theory on teaching and learning English. The various literatures they produced in their research identified that the MI theory had been found as an important parameter in the language learning process of the students and its role was found to be significant (Derakhshan & Faribi, 2015). The researchers Larsen-Freeman and Anderson (2011) said that the unique and particular strengths of the students were understood by the teachers who applied MI theory rather than the teachers who did not use the MI theory in their teaching process. These two researchers are of the opinion that while everyone has the intelligences as suggested by MI theory, they are not evenly distributed in that person.

In general, there are three vital issues with teaching English language. They are gaps between the main educational ideas and EFL, inability to bring the real life situation to the classroom, and scarcity of the appropriate content in the subject matter. The trainee teachers will benefit from the MI theory that will mitigate the above issues to a greater extent and it will also help the students to learn a foreign language. It will also optimise their commitment, skills, and knowledge in this 21st century. In order to facilitate the EFL teachers to apply the MI theory in their teaching, the theory needs to be added to their training programmes and the educators must be encouraged to employ this theory. It is worth mentioning three areas in this regard. First one is finding the MIs in the learners. EFL teachers should know both their own MI profiles and it is not enough. In addition, they should be knowledgeable about their students' MI profile, which will help the students know where they stand. Second area is development of the curriculum and MIs. The day-to-day lesson plan, weekly plans, and yearly plans are designed based on MI theory. This will pave the way for the learners to stress their strength in any of the MIs in such curricular plans. The third area is the assessment of MIs. In the process of teaching and learning, the MIs play several roles. All MIs play different roles in the learning and in the teaching. There is a chance when the educators could open the gates to the trainee teachers and serviced teachers in their training process to identify the components of these intelligences for themselves and to study how to evaluate them while educating their students. In this regard, the present paper attempts to examine the multiple intelligence profile of students, especially sophomores (2nd year diploma students of ELT) in Eritrea.

The rest of the paper is as follows: section 2 reveals the methodology adopted in the paper, section 3 discerns the results and discussion of the paper and section 4 concludes the research.

2.0 Methodology

2.1 Participants

For the present study, the participants were sophomores (2nd year students in ELT diploma). 80 sophomores who participated in the study were from Eritrea Institute of Technology. Out of 80 sophomores, 48 were males and 32 were females whose age ranged from 19 to 24.

2.2 Materials

Multiple intelligence profiling questionnaire III (MIPQ III) is a self-rating questionnaire with five-point Likert scale (Tirri & Nokelainen, 2011) and is based on Howard Gardner's multiple intelligence theory (Gardner, 1983, 1991, 1995, 1999, 2000, 2006b). To assist both, learners in their self-reflection and

teachers to understand their student's strengths are the main aim of MIPQ. First version (Tirri & Komulainen, 2002; Tirri et al., 2003) of MIPQ measures seven dimensions 1) Linguistic, (2) Logical-mathematical, (3) Musical, (4) Spatial, (5) Bodily-kinesthetic, (6) Interpersonal and (7) Intrapersonal intelligence and as the second version (8) Spiritual intelligence (Nokelainen et al., 2006) which is based on Spiritual Sensitivity Scale (SSS) was added. In the present (9) Environmental intelligence which is based on Environmental Sensitivity Scale (EnSS) was added (Gardner (1999); Morris (2004) and (Wilson, 1998)). However, in the present paper, spiritual intelligence dimension is not used on the premise that religious ideologies are not considered when it comes to general Multiple Intelligence profiling of student.

2.3 Procedure

Samples were selected using the non-probability sampling technique. Every participant was called individually to complete the questionnaire. With the same wordings the students answered the questions, they were asked to use Likert-scale to answer the questions which ranges from 1 to 5 whereas 1 denotes totally disagree and 5 denotes to totally agree. The attitude of the students towards the statements that measures Multiple Intelligence was then evaluated.

2.4 Statistical analyses

The data was first entered into an excel file and then exported into SPSS 20.0 version. Thus, using SPSS software the current study was analysed. Statistical analysis was conducted in three phases. Primarily, internal consistency of the data was assessed through reliability analysis. Using SPSS, frequencies were computed in each demographical variables of the questionnaire. Correlation analysis was conducted to evaluate the internal relationship among factors of Multiple Intelligence.

3.0 Results

In order to find the potential relationship between the types of intelligences there are three phases of analysis and their results are discussed.

Phase 1: Descriptive statistics

The first phase of the analysis is the descriptive statistics of the multiple intelligence factors.

Table 1: Descriptive statistics of multiple intelligence factors

	N	Mean	SD	Min	Max
Linguistic Intelligence	80	4.806	0.668	1.50	5.00
Logical-mathematical Intelligence	80	4.709	0.680	1.50	5.00
Spatial Intelligence	80	4.831	0.619	1.50	5.00
Bodily-kinesthetic Intelligence	80	4.850	0.638	1.50	5.00
Musical Intelligence	80	4.803	0.693	1.50	5.00
Interpersonal Intelligence	80	4.850	0.676	1.25	5.00
Intrapersonal Intelligence	80	4.834	0.628	1.75	5.00
Naturalist Intelligence	80	4.841	0.727	1.00	5.00

Table 1 reveals the descriptive statistics of multiple intelligence factors. Linguistic Intelligence has mean 4.806, standard deviation 0.668, maximum 5.00 and minimum 1.50. Logical-mathematical Intelligence has mean 4.709, standard deviation 0.680, minimum 1.50 and maximum 5.00. Spatial Intelligence factor has mean 4.831, standard deviation 0.619, minimum 1.50 and maximum 5.00. Bodily-kinesthetic Intelligence has mean 4.850, standard deviation 0.638. Musical Intelligence factor has 4.803, standard deviation 0.693, maximum 5.00. Interpersonal Intelligence has mean 4.850, maximum 5.00 and minimum 1.25. Intrapersonal Intelligence factor has mean 4.834, standard deviation 0.628 and Naturalist Intelligence has mean 4.841, standard deviation 0.727.

Phase 2: Reliability analysis

The second phase of the analysis is based on the internal consistency of the data, which was assessed through reliability analysis and was tested with Cronbach's alpha.(Cronbach, 1970) In this study we consider alpha levels of the reliability analysis against Nunnally (1978, pp. 245-246)

Table 2: Reliability Analysis of Multiple Intelligence factors

	No. of Items	Mean	Cronbach's Alpha
Linguistic Intelligence	4	4.806	0.962
Logical-mathematical Intelligence	4	4.709	0.966
Spatial Intelligence	4	4.831	0.980
Bodily-kinesthetic Intelligence	4	4.850	0.981
Musical Intelligence	4	4.803	0.985
Interpersonal Intelligence	4	4.850	0.991
Intrapersonal Intelligence	4	4.834	0.960
Naturalist Intelligence	3	4.841	0.990

Table 2 depicts the reliability analysis and descriptive statistics for the Multiple Intelligence in language learning. The Cronbach's alpha values are ranging from 0.960 to 0.991, which indicates that the acquired data are good for additional analysis since, the Cronbach's alpha values are above 0.900. Also, the mean values indicate that the study respondents agree and strongly agree with the statements of the following factors namely, Linguistic Intelligence, Logical-mathematical Intelligence, Spatial Intelligence, Bodily-kinesthetic Intelligence, Musical Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence and Naturalist Intelligence (Mean>4.70).

Phase 3: Correlational analysis

The third phase of the analysis is based on the correlation analysis was conducted to evaluate the internal relationship among factors of multiple intelligence.

Table 3: Correlation between multiple intelligence variable

	LI	LMI	SI	BKI	MI	INTER	INTRA	NI
LI	1	.900**	.950**	.977**	.938**	.974**	.947**	.970**
LMI		1	.865**	.875**	.823**	.883**	.835**	.878**
SI			1	.961**	.946**	.946**	.969**	.946**
BKI				1	.939**	.976**	.944**	.980**
MI					1	.928**	.941**	.933**
INTER						1	.928**	.971**
INTRA							1	.936**
NI								1

**P<0.05

Where LI- Linguistic Intelligence, LMI- Logical-mathematical Intelligence, SI- Spatial Intelligence, BKI- Bodily-kinesthetic Intelligence, MI- Musical Intelligence, INTER- Interpersonal Intelligence, INTRA- Intrapersonal Intelligence and NI- Naturalist Intelligence, Table 3 shows the linear relationship between multiple intelligence factors. The findings show that the factor Linguistic Intelligence has highest statistical linear relationship with Logical-mathematical Intelligence, Spatial Intelligence, Bodily-kinesthetic Intelligence, Musical Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence and Naturalist Intelligence. Logical-mathematical Intelligence has highest statistical linear relationship with Spatial Intelligence, Bodily-kinesthetic Intelligence, Musical Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence and Naturalist Intelligence. Spatial Intelligence has highest statistical linear relationship with Bodily-kinesthetic Intelligence, Musical Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence and Naturalist Intelligence. Bodily-kinesthetic Intelligence has highest statistical linear relationship with Musical Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence and Naturalist Intelligence. Musical Intelligence has highest statistical linear relationship with Interpersonal Intelligence, Intrapersonal Intelligence and Naturalist Intelligence. Interpersonal Intelligence has highest statistical linear relationship with Intrapersonal Intelligence and Naturalist Intelligence. Intrapersonal Intelligence has highest statistical linear relationship with Naturalist Intelligence. In the whole, these results specify that there is a positive linear relationship between each and every factors of Multiple Intelligence. Hence, if one factor is increased by value, then the other factor is also increased by value. The correlation values are ranging from 0.823 to 0.980.

4.0 Discussion

The findings are consistent with several studies; major motivation of this study is that the teaching methods can be made useful, efficient, and motivating by optimising the talents of the students via the tutoring techniques that are on the basis of Multiple Intelligences (MI) Model. The researcher has referred many scientific studies for analysing the usefulness of self-report measures before discussing about MI scales. “*one possible exception [to exercise a professional bias] pertains to the use of a self-report questionnaire to measure all the variables in a study*” is stated by Campbell (1982, p. 219). The Cronbach's alpha values are above 0.900 in the present study. The mean values indicate that the study respondents agree and strongly agree with the statements of the following factors namely, Linguistic Intelligence, Logical-mathematical Intelligence, Spatial Intelligence, Bodily-kinesthetic Intelligence, Musical Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence and Naturalist Intelligence (Mean>4.70).

The present study showed strong statistically significant relation between Linguistic Intelligence and Logical-mathematical Intelligence. In line with that Asassfeh (2014) states that the make of 'conjunction' or 'Logical Connectors'(LCs) recommends that these expressions create a capacity where logical/mathematical intelligence and linguistic intelligence are probable to overlap. His study results revealed that mathematical/ logical intelligence is significantly greater than linguistic intelligence among EFL students. Apart from learning skills, MI in teaching has not showed any influences, however Dolati and Tahriri (2017) contends that only logical-mathematical type of teachers were affected through their dominant intelligence type and other intelligence types has not any significant influence on the types of class activities. Accepting the theories of Gardner indicates a drastic departure from the traditional educational systems. Diversified instruction was suggested to ensure that students with various intelligence profiles are provided an opportunity to benefit from this variety. In addition, it supports EFL learners to learn the lessons quickly by various modes of instruction (Dolati et al., 2016). This type of instruction is called as MI-inspired instruction for which numerous studies have been done to prove its effectiveness in education.

In learning skills, Hajhashemi et al. (2012) contends that the effective readers may have lower

musical intelligence. This also shows that effective readers may be not effective in 'musically' lesson learning.

The present study showed there is a positive linear relationship between each and every selected multiple intelligence factor. In line with that Younas et al. (2015) resulted that five MI including Linguistic, Bodily, Musical, Intrapersonal and Interpersonal are the influencing factors for learning English language. However, the present study showed positive significant impact of all selected eight MI factors on language learning skills.

Derakhshan et al. (2015) contends that no single method of writing teaching can best suit every types of learners since writing is shown to be differentially related to different types of intelligence and since human beings enjoy different levels of the various types of intelligence, the logical result to be drawn is that learners will experience differential success no matter how they are taught writing (Zarei & Mohseni, 2012). Sadeghi and Farzizadeh (2012) concluded that the components of MI had a significant correlation with writing ability. In the second or foreign language classrooms, it is possible to motivate learners by different activities relating to the different intelligences

Khonbi and Mohammadi (2015) proved that multiple intelligence and language learning strategies are related to each other among EFL learners. Arnold and Fonseca (2009) asserts that the current dynamic growing world is requiring much skills from citizens who are using or knowing more than one language with good listening and speaking abilities, who have potential to off set and succeed personal aims, who are effective in search for information necessary to continue learning outside the classroom, who have potential for team work, citizens who are efficient and who know how to solve multiple problems in any given context, and using MIT in the language classroom can help to promote these goals. Furthermore, Camargo and Mezzomo (2015) also emphasized that when accessing various area (s) of interest related to multiple intelligences, can develop further development of verbal linguistic/ language intelligence with a deficit or alteration in it. This is evident that the internal relationship among factors of multiple intelligence.

5.0 Conclusion

The language learning includes the interaction of numerous aspects in relation to human intelligences. This indicates the importance of an analysis of learners' intelligences in EFL learning and teaching. The present study examines the role of MI in language learning through the latest version of the Multiple Intelligences Profiling Questionnaire (MIPQ III) that is based on Howard Gardner's (e.g., 1983, 1999) MI theory. Correlation analysis was conducted to evaluate the internal relationship between the identified factors of Multiple Intelligence. Presently, MI theory provides chances for professors to consider teaching, learning and evaluation from a range of viewpoints, through providing multiple intelligences' needs. The present study results show that the multiple intelligence factors such as Linguistic Intelligence, Logical-mathematical Intelligence, Spatial Intelligence, Bodily-kinesthetic Intelligence, Musical Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence and NI- Naturalist Intelligence are having strong statistical positive significance between each and every factors of multiple intelligence. The findings mentioned in this paper give important information to teachers and educators on how MI influences the students' language learning abilities. In this regard the present study demands that every educational authority, teachers, and curriculum developers should implement these important elements into their programs, for the benefit of the teachers, the program itself, and the students. Furthermore, there is a chance when the educators offer the opportunity to the trainee teachers and serviced teachers in their training process to identify the components of these intelligences for themselves and to study how to evaluate them while educating their students.

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