INTERNATIONAL JOURNAL OF LANGUAGE EDUCATION AND APPLIED LINGUISTICS
ISSN: 2289-7208 E-ISSN: 2289-9294
VOLUME 16, ISSUE 1, 2026, pp. 88 – 97
DOI: https://doi.org/10.15282/ijleal.v16i1.13069

RESEARCH ARTICLE

Investigating Learners' Multiple Intelligences and L2 English Proficiency among Bangladeshi University Students

Sheikh Md. Muniruzzaman* and Sadia Afrin

Department of English, Gopalganj Science and Technology University, Gopalganj-8105, Bangladesh

ABSTRACT – Human intelligence is multidimensional, and each of the dimensions demonstrates unique potential, according to Howard Gardner's multiple intelligences theory. People are not equally strong in every intelligence type; some have a greater influence, while others have less. If L2 English learners' intelligence types can be measured reliably, the more powerful types can be utilized in enhancing academic instruction, and the less powerful ones can be nurtured. This study investigates the major intelligence types of Bangladeshi L2 English learners at Gopalganj Science and Technology University (GSTU), a public university in Bangladesh, and their relationship with their English proficiency. It comprised 88 participants, who were enrolled in the undergraduate program in the English major. Two types of data were collected to answer the research questions of this study. The primary data collection tool was a two-part survey: Part A and Part B. While Part A elicited demographic information of the participants, Part B involved 80 statements categorized into 8 categories of intelligence types to measure participants' intelligences. To measure participants' L2 English proficiency, the semester final scores of a basic English class, accessed from a web-based database, were used. Descriptive statistics and a bivariate correlation test were conducted to answer both research questions. Results demonstrated that participants' most prevalent intelligence types were naturalist, intrapersonal, logical/mathematical, and bodily/kinesthetic; visual/spatial, interpersonal, verbal/linguistic, and musical intelligences were less significant. Moreover, it reports five positive, two negative, and one zero correlations between L2 English proficiency and intelligence types. Findings might contribute to self-understanding and reflection on multiple intelligences and L2 English proficiency for teachers and students alike. The study also recommends formulating a customized policy on the application of MI in English programs at the tertiary level of education in Bangladesh.

ARTICLE HISTORY
Received: 5 September 2025
Revised: 6 February 2026
Accepted: 19 March 2026
Published: 27 March 2026

KEYWORDS
Academic success
Alternative approach
Bangladesh
L2 English proficiency
Multiple intelligences

1.0 INTRODUCTION

It is widely acknowledged that second language (L2) learning is a complex task that requires substantial cognitive capacity (intelligence) for the learners. Literature reveals that intelligence is an integral part of L2 learning. In common parlance, intelligence means intellectual functioning, which is an innate capacity of human beings. In technical terms, according to Gardner (2006), "...intelligence is a computational capacity…" (p. 6). Intelligence refers to the potential to comprehend and accurately employ cognitive processes (e.g., perception, rationality), acclimate to the surroundings, navigate facts, and engage in experiential learning (APA Dictionary of Psychology, 2026). Gardner (1999) metaphorically compares it to an elastic band that possesses elasticity. Multiple intelligences (MI) is a learner-centric framework that acknowledges eight dimensions of human intelligence (Gardner, 1993): linguistic, logical/mathematical, spatial, musical, bodily/kinesthetic, interpersonal, intrapersonal, and naturalist. A human being can employ this intelligence to acquire new knowledge, including second/foreign languages. Human intelligence consists of these dimensions, which have certain characteristics that might contribute to effortless L2 learning. For example, a naturalistic learner demonstrates responsiveness towards nature. They love gardening, cultivating crops, and spending time in nature.

On the other hand, L2 English proficiency refers to an English learner's ability to communicate, interact, and function in English. The four language skills (e.g., listening, speaking, reading, and writing) are required to develop proficiency in any language. Ability to communicate, grammar, vocabulary, fluency, and accuracy are some vital aspects of proficiency. Some internationally recognized English proficiency tests are the International English Language Testing System (IELTS), the Test of English as a Foreign Language (TOEFL), the Duolingo English Test, and the Pearson Test of English. English proficiency is also measured by classroom-based assessments and alternative assessments based on the purpose of the assessment. English proficiency and learners' attributes are connected (Ismail et al., 2020); there might be a correlation between the former and learners' MI. MI can have a crucial impact on language proficiency, academic success, and personal enrichment. In a comparative study between the students from urban and rural areas of Malaysia, Ismail et al. (2020) investigated the top-tier intelligences of the pre-university students based on their socio-economic status and English writing test scores. This study involved sixty university preparatory students divided into two groups: urban and rural. Results demonstrated that urban students outperformed in visual-spatial and environmental intelligence, whereas the rural group outperformed in interpersonal intelligence. Moreover, the urban group (M = 26.12) performed better in the writing test than

*CORRESPONDING AUTHOR | **Sheikh Md. Muniruzzaman** | smmzaman@gstu.edu.bd

the rural group (*M* = 22.10). Therefore, it was revealed that urban participants had better English proficiency than those from rural areas. Hence, it is evident that socio-economic status and English proficiency (writing) are associated; the present research intends to investigate MI and English proficiency in the Bangladeshi context.

In comparison with other Asian countries (e.g., China, Japan), the application of MI-based instruction is rather limited in Bangladesh, as evidenced by the inadequate literature on it. In a mixed-methods study, Tithi and Arafat (2013) explored the implementation of MI in Bangladeshi primary schools, possible barriers, and the accessibility of MI resources. It reported an inappropriate application of MI-based instruction in primary schools in Dhaka City. Teacher motivation, training, inadequate instructional materials, and the traditional assessment systems were responsible for not being able to implement this approach in Bangladeshi primary schools. Das and Cleesuntorn (2019) examined the plausibility of a visual/spatial intelligence (VSI) tools-based approach for mathematics teaching at the secondary level in Bangladesh. They made some lesson plans, integrating some physical and digital VSI tools for teaching mathematics for Grades VII and IX, and the teachers were familiar with those tools. Results demonstrated that approximately 84% of teachers and 86% of students considered VSI tools useful in enhancing mathematics instruction in Bangladesh. Similar tools might be used in English pedagogy at different levels in Bangladesh and other L2 English contexts.

Armstrong (2018) maintains that assessing the type and characteristics of one's MI and nurturing those is the first step before implementing MI for personal enrichment, leading to an experiential understanding. The present study explores the predominant intelligence types among Bangladeshi L2 English learners at GSTU and examines their relationship with English language proficiency. Specifically, it investigates two key issues: first, the intelligence profiles of these L2 English learners, and second, the correlation between their intelligence types and English proficiency. Therefore, this study fills a gap in the existing literature on the correlation between multiple intelligences and L2 English proficiency in an L2 English context. Hence, the overarching goal is to enhance English language learners' different dimensions of intelligence that will help them succeed academically and become lifelong learners. This research is important because once learners' intelligence types are identified, the paramount ones might be integrated in harnessing academic performance, and the underperforming ones can be nourished. Thus, this study will unravel the significance of MI in evaluating a large number of students and maximizing the full potential of the learners.

1.1 The Theory of Multiple Intelligences

Research in MI theory gained momentum in the 1990s (see Gardner, 1983). Given the importance of MI in language pedagogy and its impact on L2 proficiency, it has received prominence and has been investigated in different contexts. It is a multidimensional approach to education. While a good number of approaches and methods are found in second/foreign language pedagogy in the twentieth century (e.g., oral approach, situational language teaching, audiolingual method), MI theory offers a comprehensive and comprehensible account of human intelligence, advocated by Howard Gardner. Intelligence is "a biopsychological potential to process information that can be activated in a cultural setting to solve problems" (Gardner & Moran, 2006, p. 227). MI is considered an alternative approach to language teaching, advocating a student-centered philosophy that focuses on eight dimensions of human intelligence. Richards and Rodgers (2001), Larsen-Freeman (2000), and Armstrong (2018) outline the major intelligence types as presented below.

1. Verbal/linguistic (Word Smart)**:** These individuals (e.g., writers, interpreters, lawyers) are capable of using language creatively and confidently.
2. Logical/mathematical (Number/Logic Smart)**:** They (e.g., programmers, engineers, scientists) can imagine and concentrate logically.
3. Visual/spatial (Picture Smart)**:** This type of learner (e.g., painters, architects, sculptors) is capable of creating mental images and models of the environment.
4. Musical (Music Smart)**:** They (e.g., composers, singers) can intelligently notice music, including tone, rhythm, and melody.
5. Bodily/kinesthetics (Body Smart)**:** This type of person (e.g., crafts persons, athletes) can utilize their body to communicate their ideas.
6. Interpersonal (People Smart)**:** They (e.g., teachers, salespersons, politicians) can read other people easily.
7. Intrapersonal (Self Smart)**:** These learners can realize themselves (e.g., strengths/weaknesses) well.
8. Naturalist (Nature Smart)**:** They have sound knowledge of the natural world.

1.2 MI Practices around the World

Originating in the United States and acknowledged as a Western psychological theory, MI has been implemented in different educational contexts from Asia to Europe to South America. This is because MI theory was accepted as a substantial educational theory among educators and institutions around the world. The United States educators were deeply concerned with the publication of the landmark report, A Nation at Risk, in 1983, showcasing the shortcomings of its education system (Kunkel, 2009). Eventually, the establishment of the Key Learning Community in the United States in 1987 and, later, the first MI-inspired school, Key School, marked the maiden voyage of MI theory. Early proponents of these initiatives followed an MI-based curriculum and revolutionized the education system around the world. MI theory received more prominence in the Chinese context because MI ideas are connected to ancient Chinese classics (Cheung, 2009). In addition to implementing and fostering individualized pedagogical practices, MI-based computerized assessment systems were developed in Macao, China. One software program is the School-Based Multiple Intelligences Learning Evaluation System (SMILES), designed for kindergartens and primary schools. Another computerized assessment program is Brain-Based Recommendations for Intellectual Development and Good Education, a Self-Rating System (BRIDGES), designed for secondary schools. Cheung (2009) reported that obtaining a higher degree of accuracy in MI-based assessments is hard. Although

there was a misunderstanding between the policymakers, MI theory gained tremendous popularity in Chinese educational institutions, ranging from kindergartens to high schools. It turned out to be an influential educational theory in the Chinese curriculum, leading to quality education in China (Cheung, 2009). The development of valid and reliable assessments is challenging due to the complex nature of intelligence types. The major barriers to MI assessment are cultural context and philosophical perspective on education, as reported in Shearer (2009).

One laudatory application of MI theory was adult literacy in late 1996 in Adult Secondary Education, Adult Basic Education, and English for Speakers of Other Languages. At Harvard Graduate School of Education, the Adult Multiple Intelligences Study was designed based on the positive outcome of MI theory in pre-K-12 education (Viens & Kallenbach, 2004). Whereas the standard view of intelligence was unitary, MI theory posed a challenge, advocating a pluralistic perspective. Gardner's works in neuropsychology and cognitive development questioned the traditional view of intelligence. He received further evidence on human nature and cognitive capacities while working with gifted children and adults with brain injuries at Project Zero (Viens & Kallenbach, 2004). With a vision of enhancing scientific, technological, and engineering knowledge among the young generation, a science park, Danfoss Universe, was established in the exhibition called Explorama in Denmark, following the MI theory. Thus, visitors had hands-on experience with MI theory, not only by reading and listening but also by practically getting involved through physical and sensory experiences (Sahl-Madsen & Kyed, 2009). In a similar direction, the Japan Multiple Intelligence Society was established in 2004 because MI theory and traditional performing arts of Japan align well in cultivating different intelligences (Howland et al., 2009). In recent times, intelligent tutoring systems (ITS) have been designed based on MI, contributing to personalized learning. These AI-powered programs address learners' diverse intelligences, adjusting relevant teaching techniques, which can promote learner engagement and performance (De Carvalho et al., 2025).

1.3 The Importance of MI in L2 English Learning

A large body of research is available on the application and effectiveness of multiple intelligence-based instruction in language learning. It has become popular for its multidimensional advantages; the stakeholders highly appreciate multiple intelligence-based education in the curriculum. In a classroom-based study at primary and secondary schools in the United Kingdom, Hopper and Hurry (2000) examined the effectiveness of involving MI in teachers' professional upgradation as well as learner development in an eight-month project. It reported three advantages of multiple intelligence-based instruction for the learners: "increased awareness about the learning process," "increased emphasis on individual learning processes," and "stimulating the active learning process" (pp. 27-29). Thus, students were able to take charge of their learning with the advent of a legitimate framework. In addition to learners, this approach contributed to teachers' professional development, familiarizing them with theory, creating their intelligence profile, and making an action plan to involve multiple intelligences in their classroom instruction. In an American elementary school, Mettetal et al. (1997) examined stakeholders' perspectives and the impact of implementing a multiple intelligence-based curriculum. This study reported a positive attitude of the students, parents, and teachers toward this multidimensional approach to education, suggesting a constructive outcome for student learning. Moreover, teachers learned to acknowledge the diverse talents of the learners, and eventually, it helped them attain self-confidence.

In this direction, Dolati and Tahiriri (2017) designed a mixed-methods study to investigate teachers' intelligence types and their classroom practices. The study involved 30 Iranian male and female English teachers working in private language institutes, all of whom used the same textbook in their classes. Teachers' perception was assessed through semi-structured interviews, and three successive sessions of 30 classes were observed to collect data. The findings revealed that teachers with logical/mathematical intelligence were influenced by their intelligence type in their teaching practices, whereas other intelligence types did not show a notable impact on the classroom activities implemented. Results also indicated some limitations in implementing MI in the classroom, including a lack of sufficient knowledge and practical experience; limited time and challenges with time management; inadequate training and motivation for teachers; insufficient facilities; lack of institutional support; a scarcity of resources for MI-based activities; and the absence of MI-oriented textbooks (Dolati & Tahiriri, 2017). Winarti et al. (2019) conducted a study in MI following a quasi-experimental research design. Their study involved 124 junior high school students, and among them, 63 students were in the experimental group and 61 in the control group. The control group was taught in the class using conventional teaching material, whereas the experimental group was taught using multiple intelligences. Their study finds notable differences between traditional teaching and MI-based teaching strategies. Their findings demonstrate how MI-based classrooms help significantly in developing students' learning abilities. In a similar vein, Xu (2021) conducted a quantitative study involving 359 students at Heilongjiang International University, China, to explore the importance of multiple intelligences in English language learning. The study had three objectives: to identify male and female students' self-perceived MI, to design and implement a task-based English-speaking course integrating MI features, and to evaluate the improvement of the experimental group students' speaking abilities based on complexity, accuracy, and fluency components. The study involved 60 students who were divided equally into experimental and control groups. The findings revealed that students perceived musical intelligence to be the highest, while logical-mathematical intelligence was the lowest. It also indicated that male students' perception is stronger than that of female students', and regarding speaking proficiency, there was a noticeable improvement in the experimental group's performance from the pre-test to the post-test (Xu, 2021). Similarly, Nulhakim and Berlian (2020) investigated the potential of MI on male and female students at the primary level in an Indonesian context, reporting that male participants outperformed their female counterparts.

In addition to normal learners, multiple intelligences have been applied in the curriculum designed for learners with special needs. In an Iranian context, Ghaznavi et al. (2021) investigated the effectiveness of multiple intelligence-based instructions on students with physical challenges in activating their different intelligence types and fostering classroom participation and interaction in a mixed-methods study. Results indicated that this type of instructional approach significantly contributed to triggering learners'

multidimensional intelligence, along with enhancing classroom engagement. Additionally, this study reported that in comparison with L1 Iranian, multiple intelligence-based instruction in L2 English proved to be more efficacious in stimulating the intelligence types of the students with special needs and strengthening classroom interaction. Therefore, in addition to normal classroom settings, multiple intelligence-based instruction can be involved for learners with special needs for teaching both second/foreign languages and other crucial life skills. In a case study in Israel, Yavich and Rotnitsky (2020) investigated the association between academic success and dominant intelligences of junior high school students and reported that logical/mathematical intelligence is a strong indicator of academic achievement, whereas linguistic intelligence is non-dominant. In this regard, Gardner (1999) proposed six steps to start an MI-based initiative at an institution: gathering more knowledge on MI theory and practice, making study groups, visiting MI institutions, attending MI conferences, getting involved in an association of schools, planning and launching MI activities, practices, and programs. Considering the prospects of multiple intelligence-based instruction, Gouws (2007) suggested its integration into outcomes-based education (OBE) in South Africa. Both MI and OBE are learner-centered approaches to education that address learner differences to maximize learning outcomes and ensure academic success. Thus, different intelligences as presented in the MI framework are to be embedded in lesson plans, teaching and learning activities, and assessment methods of the OBE curriculum. Al-Qatawneh et al. (2021) conducted a study employing both a survey method and content analysis of textbooks to explore the integration of MI. The primary objective of the research was to investigate how MI were incorporated into seventh-grade Arabic language textbooks at the intermediate level in Jordan. Findings indicated that the textbooks are dominated by verbal/linguistic, visual/spatial, and interpersonal intelligences, with an unequal representation of the other types of intelligences.

Limited research is available on the correlation between MI and L2 proficiency, and the current study can fill this gap. Whereas earlier studies in the Bangladeshi context examined the feasibility of visual/spatial intelligence tools for mathematics education at the secondary level (Das & Cleesuntorn, 2019) and the execution of MI at the primary level (Tithi & Arafat, 2013), the present study was conducted at the tertiary education level in Bangladesh. Therefore, to facilitate the teaching and learning of L2 English at the tertiary level in Bangladesh, it is important to assess learners' intelligence types and their correlation with their English proficiency. Once the intelligence types are identified, the teachers can design some effective instructional activities and develop materials accordingly. Based on the literature review, this study will investigate the following research questions:

1. What are the major intelligence types of L2 English learners at GSTU?
2. What is the correlation between learners' multiple intelligences and L2 English proficiency?

2.0 METHODOLOGY

2.1 Research Design

This study employed a quantitative research approach, as it measured MI and its relationship with L2 English proficiency (McCombes, 2025). The two variables that were measured and correlated were intelligence types and English proficiency. Therefore, it is both survey research and correlational research. Based on the objectives of this study, a simple random sampling was used. This sampling method has some strengths, such as a higher degree of internal and external validity and a lower scope for sampling bias (Thomas, 2023).

2.2 Participants

Gopalganj Science and Technology University (GSTU) is a public university located in the Gopalganj district in Bangladesh. Bachelor's, master's, and doctoral degrees in different disciplines are offered at this university through 34 departments under eight faculties and three institutes. The Department of English is one of the founding departments that offers Bachelor's in English, Master's in Applied Linguistics and English Language Teaching (ELT), and English Literature and Cultural Studies. Both undergraduate and graduate programs are operated on a semester system in this Department. Students are required to complete 12 years of formal education before entering a bachelor's program in English, and they are selected based on their standing in a competitive university admission test. Currently, this department has 15 faculty members and approximately 300 students. Table 1 presents the demographic information of the participants.

Table 1

Demographic information of the participants

Demographic Information	Descriptive Statistics
Average age (range, *SD*)	22.61 (*SD* = 1.10)
Gender (male: female)	33: 55
Inception of English learning (school: home)	84: 4
Medium of Instruction (Bangla: English)	88: 0

This study involved 88 native speakers of Bangla who were enrolled in the bachelor's program in the Department of English at GSTU. Since the focus of the study is on English language proficiency, the English major students are the participants. During data collection, 27 students were enrolled in the second year, and 61 were in the fourth year of the BA program in English. Among the participants, there were 55 female students and 33 male students. The age range of the participants was from 19 to 25 years, with a

mean age of 22.61 years (*SD* = 1.10). All the participants were L2 English learners, and 84 of them started learning English in school, and 4 at home. All of them received education in the instruction of Bangla during public schooling.

2.3 Instrument

A survey adapted from the Online Professional English Network course conducted by the University of Maryland, Baltimore County (2018), was used to measure participants' intelligence types. Content validity was ensured based on a review by three faculty members in the Department, who specialized in Applied Linguistics and English Language Teaching. Face validity was established through a pilot study involving eight participants. The internal consistency of this eight-item survey was assessed using Cronbach's alpha (α = 0.77), indicating acceptable reliability. This is a self-assessment tool, and anyone interested in the study of multiple intelligences can use it to measure multimodal intelligence types and nurture them accordingly to improve learners' intellectual functioning.

The survey was anonymous since participants were instructed not to write their names on the survey except for identification numbers, which were used to find out their English proficiency scores from a computerized database of students' academic results. The survey had two sections: Part A and Part B. Part A elicited demographic information of the participants (e.g., age, gender, program and year of study, starting place of learning English, and medium of instruction in public schooling). In Part B of the survey, a total of 80 statements were categorized into 8 intelligence types (e.g., naturalistic, bodily/kinesthetic, intrapersonal, interpersonal, verbal/linguistic, logical/mathematical, musical, and visual/spatial). There were 10 statements under each of the intelligence types. The participants were instructed to indicate their perception of each of the 80 statements according to the following scale: 0 = absence of a characteristic, 1 = presence of a characteristic. The survey's instructions and statements were provided in English.

2.4 Data Collection Procedures

Two types of data were collected for this study. To measure L2 English learners' intelligence types, data were collected from two batches of the English classes at GSTU. The researchers visited both classes in person and recruited participants by explaining the study's objectives. Participants were informed that their final scores of the Basic English course would be accessed and used for this study. By signing the printed consent form, participants agreed to participate in the study. After consenting, printed copies of the survey were distributed during class periods. It took approximately 30 minutes to record the responses to the statements on the survey. Participation in this study was voluntary, and no emotional, physical, or community issues were involved. Confidentiality was strictly maintained because only the researchers of this study accessed and processed the dataset.

To measure participants' L2 English proficiency, the test scores of an English class, Basic English (ENG101), were used. This course is required for all students in the first year of the bachelor's program in English, and its objective is to develop their knowledge in grammar, mechanics, and pronunciation, and improve their reading and writing skills. There are two types of assessments in this class: formative (40% marks) and summative (60% marks). While formative assessment is conducted in the form of class attendance (10%), presentation/assignment (10%), and midterm examination (20%), summative assessment is conducted in the form of the semester final exam (60%). Both the letter grade and total score are provided in the result sheet. These scores are considered a reliable measure of their English proficiency because the course is conducted throughout a semester, and their performance is assessed by both formative and summative assessments. While formative assessment is conducted solely by the course teacher, the exam scripts of the summative assessment are examined by two independent examiners, one of whom is the course teacher. The average marks of the two examiners are added to the marks of the formative assessment. For the summative assessment, if there is a difference of 20% or more in any exam script, it is assessed by a third assessor, and the nearest score of either the first or second assessor is used. Therefore, there should be good interrater reliability in the grading process.

2.5 Data Analysis Procedures

This study examined L2 English learners' intelligence types at GSTU. It also investigated the degree of correlation between L2 English learners' intelligence types and their English proficiency. To answer Research Question 1, descriptive statistics (e.g., mean, standard deviation, minimum, maximum) were calculated. To answer Research Question 2, a bivariate correlation was used to examine the direction and strength of the association between L2 English learners' intelligence types and their English proficiency. All statistical assumptions for the correlation were met. Data did not follow a normal distribution, so we did not test for significance using a t-test. We performed the Pearson correlation coefficient (*r*). All dependent variables were continuously scaled. All statistical analyses were carried out in R, with a significance level of α = .05 (R Core Team, 2022).

3.0 RESULTS

3.1 Intelligence Types of Bangladeshi English Learners

The first research question examined L2 English learners' major intelligence types at GSTU. Descriptive statistics (see Table 2) indicated that naturalist learners (*M* = 7.61, *SD* = 1.48) outnumbered the other types of intelligence in this context, which means most of the participants of this study were found to have a close connection with nature. While the majority of the L2 English learners are naturalist learners, intrapersonal learners (*M* = 7.33, *SD* = 1.29) are next to this category in the pool of participants, which indicates that these learners are independent, intuitive, reflective, and thoughtful. The next intelligence type close to the intrapersonal type is logical/mathematical (*M* = 6.9, *SD* = 1.71), which means participants of this study are good at abstract thinking and categorizing thoughts and concepts. Another intelligence type is bodily/kinesthetics (*M* = 6.69, *SD* = 1.6), which is next to logical/ mathematical. It demonstrates learners' athletic, motor, and non-verbal communication skills. Out of the eight types of intelligence, the above-mentioned types are more powerful for Bangladeshi L2 English learners.

Table 2

Intelligence type-wise descriptive statistics

Intelligence Types	Range	Min	Max	Mean	SE	*SD*	95% Confidence Interval	
							Lower	Upper
Naturalist	6	4	10	7.61	0.16	1.48	7.30	7.93
Intrapersonal	6	4	10	7.33	0.14	1.29	7.06	7.60
Logical/ Mathematical	9	1	10	6.9	0.18	1.71	6.54	7.26
Bodily/Kinesthetic	8	2	10	6.69	0.17	1.6	6.35	7.03
Visual/Spatial	10	0	10	6.48	0.19	1.81	6.09	6.86
Interpersonal	9	1	10	6.31	0.22	2.04	5.88	6.74
Verbal/Linguistic	9	0	9	5.34	0.21	1.98	4.92	5.76
Musical	10	0	10	5.09	0.23	2.13	4.64	5.54
All types (k = 8)	10	0	10	6.47	0.07	1.95	6.32	6.61

Note. N = 88

Among the less impactful intelligence types, the least type (*M* = 5.09, *SD* = 2.13) is musical intelligence, which means participants are less passionate about music than they are about nature. Verbal/linguistic (*M* = 5.34, *SD* = 1.98) learners are, to a limited extent, close to musical learners, which shows that they enjoy learning languages, explaining, and communicating concepts. Another less tapped intelligence type is interpersonal (*M* = 6.31, *SD* = 2.04), which means the participants have limited skills in group work and teamwork. Although visual/spatial (*M* = 6.48, *SD* = 1.81) intelligence belongs to the less dominant types, it is close to bodily/kinesthetic intelligence, and it indicates that learners are developing their skills in maps, directions, and pictures.

To sum up, participants in this study demonstrated a solid understanding of their intelligence. While naturalist, intrapersonal, logical/mathematical, and bodily/kinesthetic intelligences are the dominant types based on the mean scores, the less impactful ones are visual/spatial, interpersonal, verbal/linguistic, and musical learners. Thus, it can be deduced that the L2 English learners of GSTU lacked complete readiness to enjoy the benefits of all eight types of intelligences. So, teachers and students should make a deliberate attempt to reach the highest possible level through well-planned programs and activities. Learners could receive maximum output if they had a greater degree of intelligence in all eight levels. Overall, they are in a satisfactory position based on the mean scores of their intelligence types.

3.2 Correlation between MI and L2 Proficiency

The second research question asked about the relationship between learners' intelligence types and L2 English proficiency at GSTU. A bivariate correlation was used to measure this relationship (see Table 3). The two dependent variables are total scores on a specific intelligence category and English proficiency scores. The correlation coefficient ranges from -1 to 1, which demonstrates the strength and direction of the relationship between the variables in a dataset. While a correlation coefficient value of 1 represents a perfect positive correlation, -1 represents a perfect negative correlation (Bhandari, 2023).

Table 3

Correlation between English proficiency and intelligence types

Intelligence Types	*r*
Visual/Spatial	0.17
Logical/Mathematical	0.16
Interpersonal	0.14
Naturalistic	00
Bodily/Kinesthetic	0.03
Intrapersonal	-0.02
Verbal/Linguistic	0.06
Musical	-0.01

Note. significance level of α = .05, power = 0.8, two-tailed

Three positive correlations between L2 English proficiency and intelligence type are considered in this study. First, there is a positive relationship between L2 English proficiency and visual/spatial intelligence (r = 0.17) to a small degree. By squaring the Pearson correlation coefficient (r), we found that 3% (r^2 = 0.03) of the variance in L2 English proficiency can be accounted for by visual/spatial intelligence and vice versa. It indicates that if an L2 English learner's visual/spatial intelligence is increased by 3%, their overall English proficiency will also increase by 3%. Second, there is a positive relationship between L2 English proficiency and logical/mathematical intelligence (r = 0.16) to a small extent. By squaring the Pearson correlation coefficient (r), we found that 3% (r^2 = 0.03) of the variance in L2 English proficiency can be accounted for by logical/mathematical intelligence and vice versa. It suggests that if an L2 English learner's logical/mathematical intelligence is increased by 3%, their English proficiency will also increase by 3%. Third, there is a slightly positive relationship between L2 English proficiency and interpersonal intelligence (r = 0.14). By squaring the Pearson correlation coefficient (r), we found that 2% (r^2 = 0.02) of the variance in L2 English proficiency can be accounted for by interpersonal intelligence and vice versa. It shows that if an L2 English learner's interpersonal intelligence is increased by 2%, their English proficiency will also increase by 2%. One significant finding is that although naturalist intelligence bears the highest mean score in the first research question, it has a zero correlation with English proficiency, as found in the correlation test. So, it could be concluded that there is no relationship between naturalist learners and their English proficiency regarding Bangladeshi learners. Another important finding is that intrapersonal and musical intelligences are negatively correlated with English proficiency.

4.0 DISCUSSION

The findings of this study demonstrate some significant trends among Bangladeshi L2 English learners. The first research question examined L2 English learners' MI at GSTU. Descriptive statistics present a solid understanding of their intelligences. The more powerful intelligences are naturalist, intrapersonal, logical/mathematical, and bodily/kinesthetic. Being nature-smart, these learners are well connected to nature, and they love to interact with their surrounding animals and nature, which helps them grow an appreciation of nature. While intrapersonal learners are independent, intuitive, and self-sufficient, they are good at reflecting and thinking. Although they possess a perfectionist approach, they can work with little external motivation. While logical/mathematical learners are smart in number/logic, they are abstract thinkers capable of categorizing thoughts and concepts. These learners can solve math problems efficiently and explain things rationally. The bodily-kinesthetic learners are body-smart; they learn things by doing. They appreciate sports, outdoor games, and non-verbal communication because they are athletic with good coordination and motor skills. These findings regarding naturalist, intrapersonal, logical/mathematical, and bodily/kinesthetic intelligences are consistent with previous studies (Armstrong, 2018; Larsen-Freeman, 2000; Richards & Rodgers, 2001). Similarly, in their correlational study of MI and academic performance, Mimid et al. (2020) reported intrapersonal intelligence as a paramount type for the 11th graders in an Indonesian context. Abdulaal et al. (2025) reported that intrapersonal intelligence significantly contributed to the grammatical accuracy of English learners' writings. Findings also indicate that logical/mathematical intelligence is more predictive of academic achievement than verbal/linguistic intelligence, a finding further corroborated by Yavich and Rotnitsky (2020) and Dolati and Tahiriri (2017). However, the results do not align with Xu (2021) in that musical intelligence was reportedly a dominant type of intelligence and logical/mathematical intelligence a non-dominant type in their study.

The less impactful intelligences are visual/spatial, interpersonal, verbal/linguistic, and musical intelligences. Visual/spatial learners are picture smart, and they are good at visualizing pictures, drawing and painting, noticing colors and shapes, rearranging furniture and re-designing space, and solving visual puzzles. Unlike intrapersonal learners, interpersonal/people-smart learners appreciate group work, as they love interacting with others. They perform better as team players, as they have better social connectivity. Word-smart learners love reading and writing. They have good public speaking skills and can explain ideas and communicate concepts better. Musical learners are capable of memorizing tunes and songs. Playing a musical instrument and identifying patterns are some of their special skills. These findings are in line with Richards and Rodgers (2001), Larsen-Freeman (2000), Armstrong (2018), and Mimid et al. (2020). However, results are not consistent with Ismail et al. (2020) in that participants from urban and rural areas in their study outperformed in visual/spatial and interpersonal intelligences, respectively. Although visual/spatial, interpersonal, verbal/linguistic, and musical intelligences have been found as less consequential types of intelligence in our study, they can significantly shape multiple dimensions (e.g., cohesion, organization, grammar) of English learners' writings (Abdulaal et al., 2025). One important trend of this study is that none of the intelligences are completely operational based on the mean scores, which means there is ample scope for the learners to enhance different intelligences in this context and other similar contexts. Although this study was conducted concerning a foreign/second language, enhancing one's intelligence might contribute to personal enrichment (Armstrong, 2018).

The second research question investigated the correlation between learners' intelligence type and L2 English proficiency. Five positive correlations between L2 English proficiency and intelligences (visual/spatial, logical/mathematical, interpersonal, verbal/linguistic, and bodily/kinesthetic) are found in this study. Thus, these five intelligences should be given prominence in teaching, learning, and assessment in the English programs at GSTU. Given that MI-based instructions contributed to enhancing English writing performance in a Malaysian context, Ismail and Noorhassanah (2025) recommended a learner-responsive pedagogy highlighting learners' manifold cognitive profiles. This recommendation might be a possible solution to overcome the barriers for L2 English learners in Bangladesh as reported in Muniruzzaman and Afrin (2024). They investigated the challenges that Bangladeshi English-major students face while developing their academic writing skill and results demonstrated that these challenges were primarily brainstorming skill, grammar, vocabulary, mechanics, and first language interference. Furthermore, Gebremeskel et al. (2024) reported the effectiveness of MI-driven reading practices over traditional methods and suggested employing MI-guided reading activities to promote students' reading comprehension in university education. Compared with prior work (Ghaznavi et al., 2021), this evidence extends current understanding by demonstrating an association between intelligence levels and L2 proficiency. Another noticeable trend among

the learners is that although verbal/linguistic intelligence positively correlated with their English proficiency, it was found to be the least impactful type in the first research question. This represents some confusion among the learners regarding their perception and language proficiency, and future research is needed to confirm this finding.

Assessment practices in traditional education systems steadily rely on logical and linguistic intelligences, and non-traditional intelligence is neglected. When certain intelligence types are sidelined, lower confidence and self-esteem grow among learners because they think they have limited talent in language learning (Perdido et al., 2025). The findings of this study can explain this phenomenon. High achievers are considered to have improved intelligence, whereas students with lower academic performance are considered less meritorious, even though students are not quite aware of their strengths and weaknesses. So, this type of study should be conducted to raise awareness among students because the characteristics of the learners can be utilized constructively in accelerating their academic performance. While language learners differ from one another based on their individual learning preferences and styles, learner differences should be acknowledged and addressed in language pedagogy. Husin and Adnan (2023) found a significant positive association between MI and use of language learning strategies (LLS) among science and technology students in Malaysia, and they recommended incorporating MI and students' LLS (e.g., cognitive, memory, and metacognitive) while making lesson plans and instructional materials. In addition to learners, the findings might be helpful for both pre-service bilingual teachers' English teaching competency (Li & Low, 2026) and in-service teachers' classroom instruction planning. Furthermore, in strengthening learners' L2 English proficiency, these insights might be considered while developing curriculum, designing authentic assessment practices, and planning teacher preparedness training in order to optimize the promise of the Common European Framework of Reference for Languages, which has recently brought positive outcomes in secondary education in Malaysia (Sulaiman, 2026). Based on the findings of this study, two assumptions can be made regarding the participants: a) learners are unable to properly utilize their multidimensional intelligences, or b) their intelligence types are not properly tapped and nurtured systematically. If they can successfully use their intelligences, they can succeed both in academia and in real life, like in professional contexts, because verbal/linguistic intelligence alone is not enough to make self-regulated learners who can take responsibility for their learning. A combination of MI can turn learners into autonomous learners who are capable of self-learning. Autonomous learners are competent and intellectually enriched and can excel at attaining their educational goals (Muniruzzaman, 2024). Hence, some proactive and well-rounded learners can contribute to the national development of Bangladesh.

5.0 CONCLUSION

This study examined L2 English learners' intelligence types at GSTU and the extent to which there is a correlation between learners' intelligence types and L2 English proficiency. Findings indicated that the most prevalent types of intelligence among the participants of this study are naturalist, intrapersonal, logical/mathematical, and bodily/kinesthetic intelligence. Although small, this study also demonstrates five positive correlations between L2 English proficiency and visual/spatial, logical/mathematical, interpersonal, verbal/linguistic, and bodily/kinesthetic intelligences. This study is distinctive in that it has investigated the correlation between multiple intelligences and L2 English proficiency, a topic previously unexplored in the literature. Overall, while this study extends existing knowledge on multiple intelligences by applying it to a new context (e.g., Bangladesh), it also fills an identified research gap in the literature. The findings of this study offer some crucial pedagogical implications, making practical contributions by advancing understanding of the association between intelligence types and English proficiency. It provides actionable recommendations for educational institutions and practitioners. Based on this empirical evidence, GSTU administration might organize teacher education/training programs, especially for novice teachers, since they are required to be trained on learners' strengths and weaknesses (e.g., intelligence types).

Besides, English learners are to be familiarized with these categorizations of intelligences. Learner awareness needs to be raised because they should employ their more impactful intelligence types for learning success, and they must nurture other types with support from teachers. Faculty members might consider these findings while planning their lessons and designing materials, not only for language classes but also for other classes in English literature, cultural studies, and applied linguistics and ELT. Some innovative classroom activities can be designed, integrating specific types of intelligence. For example, based on naturalist intelligence, students can be presented with a text on climate change in which they might work on identifying and classifying environmental terminologies and cause-and-effect relationships. This practice might enhance freshmen's reading skills, academic vocabulary, and critical thinking. Similarly, following intrapersonal intelligence, students might be assigned a response paper on Daniel Defoe's *Robinson Crusoe*, which is taught in the first semester of the first year in the undergraduate program in English at GSTU. The writing process would cover outlining the main arguments of the text and connecting with and critically analyzing personal encounters and beliefs.

Based on the limitations of the current study, some future directions are proposed. First, participants might be selected purposefully to distinguish between high achievers and slow learners. Second, this study measured the correlation between intelligence type and proficiency in a basic English course. In future research, other courses can be considered to find more comprehensive results. Third, in further study, a comparison between male and female participants might be made regarding their intelligence types. Fourth, the correlation between students' intelligence types and their performance in different disciplines can be examined to find out their strengths and weaknesses in the learning landscape. Fifth, this study involved only undergraduate students; future studies might consider graduate students and make a comparison between the two groups of participants. Therefore, this vein of research can be complemented with further study in this context and similar L2 English contexts. It is evident that human intelligence is multidimensional and multifunctional; therefore, by nurturing multifaceted aspects of intelligence, a language learner can turn into a skilled and lifelong learner. Bangladesh's Ministry of Education and other relevant stakeholders, practitioners, and policymakers can make a customized policy on the application of MI at different levels of education. Since Bangladesh is an L2 English context, English proficiency is crucial to its national development, and MI-based education might contribute to this direction by producing multi-talented learners.

ACKNOWLEDGEMENTS

This research was funded by Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, rebranded as Gopalganj Science and Technology University, in the 2022-2023 fiscal year. We appreciate the constructive feedback of the editor and the reviewers. We express our gratitude to the study's respondents because this quantitative research would not have been feasible without their support. We are also thankful to our colleagues in the Department of English at GSTU and outside who offered us insights and materials while working on this project.

CONFLICT OF INTEREST

The authors declare no conflicts of interest

AUTHOR CONTRIBUTIONS

Sheikh Md. Muniruzzaman (Conceptualization; Formal analysis; Software; Writing original draft; Writing - review & editing; Funding acquisition)

Sadia Afrin (Methodology; Data curation; Resources; Writing original draft; Writing - review & editing; Funding acquisition)

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