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The Impact of Diversified Intelligences on Intermediate EFL Learners' L2 Writing Skills

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Abstract

This study aimed to determine how diversified intelligence (DI) can predict various aspects of L2 writing. To achieve this, 120 intermediate English as a Foreign Language students were selected using the Oxford Quick Placement Test (OQPT). The learners were given Abdulaal, Alenazi et al.'s (2022) DI questionnaire. The participants were asked to prepare an argumentative essay on a given subject in 60 minutes. Each writing component—tenor, organization, coherence, vocabulary, grammar, spelling, and pronunciation—was considered when assigning a score to the students' writings. The inter-rater reliability, as determined by Pearson's correlation, was 0.87. The data were analyzed using multivariate regression in AMOS (Version 22) to determine which types of DIs contributed to various characteristics of L2 writing. The findings demonstrate how diversified intelligence impacted different aspects of learners' writing. It was discovered that intrapersonal, musical, and naturalistic intelligence significantly impacted the grammar of EFL

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students' writings; kinesthetic, existential, logical, and naturalistic intelligence had an impact on the punctuation components of L2 writings; verbal, kinesthetic, and naturalist intelligence had influences on students' writing organization; visual, interpersonal, logical, and existential intelligence played a significant role in the students' cohesion; and finally, logical and existential intelligence significantly impacted the relevance and sufficiency of the thematic tenor.

Keywords: Diversified intelligence, EFL learners, L2 writing, writing components.

1. INTRODUCTION

Numerous studies (e.g., Foster-Cohen, 2001; White, 1990) have revealed that learners at lower proficiency levels frequently rely on their native language when writing in a second language. Writing is a substantial language skill that is heavily emphasized in second language instruction. Students' cultural understanding is impacted by writing, yet writing is a highly challenging skill to learn. They organize their ideas in their native language before literally translating them into the target language. This indicates that when writing in a second language, the ideas of the native language and the second language are merged and constantly interact, leading to a tendency toward sentence errors, poor cohesion, and ambiguous expressions (Foster-Cohen, 2001).

According to Brown (2003), not all native speakers of a language are automatically proficient writers in that language. This argument highlights the significance of teaching and learning writing in a second language. Writing has, therefore, always been seen as a crucial ability that aids language learning. Considering that practically every course has some type of writing component, the significance becomes even more obvious. For many English language learners, writing is not easy to master because it requires specific background knowledge of rhetorical organization, cohesion, coherence, and appropriate language use (Storch, 2009; Wei, 2020).

In Saudi contexts, L2 writing proficiency is a talent that both teachers and students pay attention to. The development of this ability takes up a minor portion of class time. The majority of the writing is done outside the classroom, and students go to outside sources for assistance. The final result was prioritized over the writing process. It is typically considered a technique for developing lexical or syntactic background rather than a method for conveying thoughts (Moskovsky et al., 2016). Nonetheless, learners should use their cognitive potential when writing because it helps them with many aspects of writing.

Teachers can use various instructional strategies to meet the demands of different children in diverse situations without disregarding the types of students' intelligence. When teachers focus on all students, regardless of their intelligence type, they foster a sense of equality. This is the case because teachers have more options when teaching, rather than simply emphasizing on intelligence as the only contributing factor (Ningrum & Wibowo, 2022). In short, mastering the proper forms of L2 is crucial because writing involves a complex process and many rules.

Since it is always challenging for educators to draw students' attention to their instruction, it is necessary to develop a well-thought-out program. Teacher collaboration to enhance these strategies and initiatives is crucial for effective instruction. Teachers always lament pupils' inadequate English competence despite efforts to enhance teaching skills through instructional strategy. Therefore, it is crucial to consider innovative instructional strategies and tactics that can be applied to enhance students' proficiency in all four areas, especially writing (Ningrum & Wibowo, 2022).

Altan (2001) asserted that intelligence of a type that is significantly more flexible and more complex than previously thought is responsible for every human accomplishment. These numerous intelligences are not limited to the verbal and analytical processes typically referred to as intelligence, but they are present in almost every aspect of human activity. Gardner's thesis, which was initially published in 1983, influenced certain innovative studies like John-Steiner's

study of creativity, but it did not affect writing instruction. To spark fresh perspectives on writing and writing instruction, this study presents [Gardner's \(1983\)](#) seven-part cognitive theory.

The results of this study can help English teachers in public schools, language institutes, and private schools improve their teaching of writing skills, making it a valuable study. The results of this study can also be helpful to Saudi EFL students, university faculty, and the Ministry of Saudi Education. Both teachers and students can benefit from teaching writing using different intelligence techniques. For educators, teaching writing through the various components of diversified intelligence is a novel approach. Students' writing skills can be enhanced by using various diversified intelligence components.

Based on the literature review, there has not been any research on how much intelligence affects L2 writing for EFL learners, although numerous studies have independently investigated diversified intelligence and various language skills. Therefore, the objective of this explanatory study is to advance this issue and partly fill this gap. To achieve this objective, the following research questions were formulated:

1. Which type of intelligence has a greater impact on the appropriateness and relevancy of the text that EFL students write, and which type has a greater impact on how EFL learners compose and organize their writings?
2. Which types of intelligence impact the cohesiveness and sufficiency of vocabulary for EFL learners' written works?
3. Which of the diversified intelligences has the greatest influence on the grammar, punctuation, and spelling used in EFL learners' written works?

2. LITERATURE REVIEW

2.1 Diversified Intelligence Theory

Eight categories of skills that exhibit diversified intelligences were proposed by [Gardner \(1983\)](#) in *Frames of mind: The theory of diversified intelligences*: [1] musical, [2] visual-spatial, [3] linguistic, [4] logical-mathematical, [5] kinesthetic, [6] interpersonal, [7] intrapersonal, and [8] naturalistic. Learners with musical intelligence are sensitive to musical tones. Musically intelligent individuals may sing, play an instrument, produce music, and typically have good pitch, if not perfect pitch. Meanwhile, visual-spatial intelligence pertains to the ability to make mental images and spatial judgments. In the hierarchical model of intelligence, spatial ability is one of the three main intelligence components. Furthermore, according to [Park et al. \(2012\)](#), individuals with high verbal-linguistic intelligence possess a command of language and words. In other word, they have strong reading, writing, storytelling, and word and date memorizing skills ([Abdulaal, Ramadan et al., 2022](#)).

Logic, abstraction, reasoning, numbers, and critical thinking are all involved in logical-mathematical intelligence. It is also related to the ability to comprehend fundamental ideas of causal systems of some sort. Unlike logical-mathematical intelligence, the ability to manipulate objects deftly and manage one's physical movements are fundamental components of bodily-kinesthetic intelligence. [Gardner \(1983\)](#) continued to explain that this encompasses the capacity to train reactions in addition to having a good sense of timing and the purpose of physical activity. Individuals with strong bodily-kinesthetic intelligence are probably skilled in physical pursuits like athletics and construction ([Abdulaal & Abuslema, 2020](#); [Oskooei & Salahshoor, 2014](#)).

According to the diversified intelligence theory, people with high interpersonal intelligence are perceptive to the emotions, motives, temperaments, and moods of others, and they can collaborate well with others in a group setting. [Gardner \(1983\)](#) stated that interpersonal intelligence is sometimes mistaken for being extroverted or liking others. Such people can be followers or leaders because they are good communicators. Unlike interpersonal intelligence, intrapersonal intelligence refers to one's ability to reflect and be introspective. It indicates a profound awareness of oneself, including one's qualities, shortcomings, and ability to anticipate one's feelings or behaviors ([Shafiee et al., 2020](#)).

Naturalistic intelligence focuses on fostering and connecting knowledge to one's natural environment. Classifying different types of rocks, mountains, animals, and plant species are some examples of natural forms. This kind of ethical, holistic, and sensitive view of the outside realm and its intricacies, comprising the place of humans in the larger ecosphere — is the foundation of this kind of ecological receptiveness. Rather than characterizing intelligence as a single, all-encompassing skill, the theory of diversified intelligence suggests that human intelligence can be divided into several types. For 40 years, educators worldwide have been embracing this notion, even though conventional psychology has condemned it for being subjective and lacking empirical support (Davoudi & Chavosh, 2016).

Human intelligence is a complex construct that exists in all people to varying degrees. The theory states that intelligence modality needs to meet the following eight requirements: [1] possibility of brain injury leading to brain isolation, [2] position along the evolutionary tree, [3] existence of central functions, [4] proneness to encoding, [5] a unique developmental trajectory, [6] the presence of prodigies, savants, and other extraordinary individuals, [7] experimental psychology's support, and [8] psychometric results' support. The theory of multiple intelligence has made significant contributions to the domain of English Teaching, chief among them being the ability to recognize individual variations and create better learner-oriented programs (Nanda et al., 2018).

2.2 Empirical Background

Stanovich et al. (1984) and Hunt (2001) investigated the connection between grammar scores and several diversified intelligence components. The study included 63 female EFL learners who were chosen from a group of intermediate students. The Teele Inventory for Diversified Intelligences (TIMI), Michigan Grammar Test, and Nelson English test were the tools used in this study. Grammatical accuracy and linguistic and interpersonal intelligence were positively correlated according to the Pearson product-moment correlation results. Grammar accuracy can be predicted by linguistic intelligence, as determined by the stepwise diversified regression analysis.

Akram (2008) investigated the use of multiple intelligence to increase the motivation and reading perception of young EFL students. The findings demonstrated that reading exercises grounded in the diversified intelligence hypothesis can improve young EFL learners' reading motivation and comprehension. Furthermore, Namaziandost et al. (2019) probed the connection between DI and Iranian EFL students' knowledge of and approaches to learning vocabulary. The results showed that DI and vocabulary knowledge were positively associated. Furthermore, according to the stepwise diversified regression analysis, linguistic intelligence is the best indicator of lexical knowledge. Regarding the correlation between DI and lexical strategies, the findings showed that, among the six techniques, the associations with physiological, natural, and interpersonal intelligence were significant for determination, social, and memory strategies, respectively.

In addition, Liu and Chen (2014) and Abdulaal et al. (2023) examined the connection between DI and anxiety in foreign language classes. The findings of the MANOVA indicated that none of the six intelligences could predict the variance in anxiety. Nevertheless, the researchers reported a significant negative correlation between apprehension and the following intelligence categories: mathematical, musical, visual-spatial, naturalistic, and intrapersonal. Then Tabrizi (2016) also examined the connection between EFL students' diversified intelligence and reading comprehension skills. Data were collected from randomly selected 117 senior English students and were examined following the administration of two different types of instruments: the Reading Comprehension Section of the TOEFL ("The TOEFL Test", 2005) and the MIDAS Adults (Shearer, 1996). The results demonstrated a significant correlation between reading perception scores and all types of learners' DI profiles. The most significant indicator of students' reading perception skills is verbal-linguistic intelligence, followed by visual-spatial and interpersonal intelligence, in that order. Moreover, learners' reading comprehension could not be predicted by intrapersonal or kinesthetic intelligence. The goal of this study, in light of all the

previously reviewed studies, was to ascertain how various diversified intelligence contributes to the various L2 writing components (i.e., grammar and spelling) of EFL learners.

Moreover, [Ahmadi et al. \(2012\)](#) investigated the extent to which [Gardner's \(1993\)](#) multiple intelligences hypothesis was applied to the junior high school textbook "Prospect 1" for first grade. To achieve this, 135 Iranian students from public, private, and gifted schools in three distinct Iranian cities were sent to junior high schools in the first year. To count the types of intelligence that the textbook considered, data was gathered using a 50-item diversified intelligence checklist that was taken from [Brown's \(2003\)](#) diversified intelligence evaluation checklist. The data were analyzed using descriptive statistics. The study concluded that verbal/linguistic and visual/spatial intelligence comprised most book intelligence profile. Musical and naturalistic intelligences and, however, were less prevalent.

The effects of using diversified intelligence on EFL learners' motivation to learn English were also studied by [Yeh \(2014\)](#) and [Shafiee et al. \(2020\)](#). Multiple regression analysis was employed as a quantitative research tool in this study. In total, 458 students from several Vietnamese universities participated in this research. The study's findings demonstrate that students' motivation to learn English was positively impacted by each of the three intelligences chosen for the research study: (1) interpersonal intelligence, (2) linguistic intelligence, and (4) naturalistic intelligence, with naturalistic intelligence having the biggest effect. To increase students' motivation to learn, the study offers several recommendations for teaching and studying English. [Yeh \(2014\)](#) conclusions support both theoretical and practical elements by demonstrating the value of diversified intelligence for education and the importance of implementing it in the classroom.

[Wei \(2020\)](#) investigated potential connections between the speaking abilities of EFL students and diversified intelligence. A total of 177 intermediate students were selected for this study. The participants were given [McKenzie's \(1999\)](#) DI questionnaire to determine their DI profiles. Additionally, the California Skill Test was used to determine the individuals' critical thinking. The IELTS speaking exam was then used to assess the participants' speaking proficiency. The participants' speaking abilities and their critical thinking showed a strong association, although there was no significant relationship between the two according to the statistical results of the Pearson correlation coefficient.

An increasing number of scholarly works have explored the function of emotional intelligence (EI) in the acquisition of a second language (L2). Despite the reports of positive correlations, non-significant or negative relationships were also discovered. This research gap was filled by a meta-analysis that examined 39 separate studies with a total sample size of 687 subjects ([Abdulaal, Ramadan et al., 2022](#)). With actual language performance as the result, the random-effects model produced moderate-to-large coefficients. The results of the moderation studies indicated that the effect was unaffected by educational level, major, specificity of L2 accomplishment, or skills of language learning, but was stronger for females than males. The causes, effects, potential moderating effect explanations, and educational implications are examined.

In addition, [Pau et al. \(2004\)](#) investigated stress management strategies for undergraduate dental students with varying emotional intelligence (EI) levels. The subjects are chosen from a 5-year dentistry degree program undergraduate student body. Individual EI scores were determined using a survey. Participants were split into two EI groups based on the median score for each research year. Data gathering was conducted informally through in-person interviews. Data interpretation organizing, sorting, indexing, and charting information based on major topics. Ten males and ten females with low and high EI were interviewed. Emotionally, a sense of stress can be described as anything from dislike to rage and exasperation. Four groups of coping mechanisms were identified, and they were used in different proportions based on the EI. Students with high EI were more likely to develop organizational and reflective evaluation skills. Students with lower EI scores were more likely to indulge in unhealthy habits.

3. METHOD

3.1 Participants

The sample consisted of 126 intermediate EFL students (60 males and 66 females) from three educational language institutes. All participants were native Arabic speakers. The participants were selected by considering their Oxford Quick Placement Test (OQPT) scores.

3.2 Instruments

For this research, three measuring tools have been used. The Oxford Quick Placement Test (OQPT) was the first tool used in this investigation. It consisted of 75 multiple-choice questions with 32 language-related objects, 22 reading items, and 20 listening exercises. The second tool was a writing test, in which test-takers demonstrated their skills in organizing ideas and enhancing them with examples or proof and employing standard English styles in a brief essay on an argumentative topic within 65 minutes. A few subject-matter experts verified the validity of the writing exam used in this study. Their opinions suggested that no changes were required.

Furthermore, Cronbach's alpha was used to validate the scale's reliability with a respectable internal consistency of 0.76. The third measuring tool was the DI questionnaire, created by McKenzie (1999). The DI comprised nine sections, each with 10 items. The objects appeal to various abilities or personality qualities. The naturalistic, logical (i.e., mathematical), existential (i.e., experiential), interpersonal (i.e., correlational), kinesthetic (i.e., corporeal), verbal, intrapersonal (i.e., cerebral), and musical intelligences were all included in these nine parts of the DI scale. Two experts in the field corroborated the questionnaire's validity within the current study, and Cronbach's alpha (0.86) indicated the questionnaire's reliability.

3.3 Research Procedures

This study aimed to examine how miscellaneous intelligences affect the writing components of EFL students. The study was conducted following several protocols. Initially, 120 intermediate learners were selected using the OQPT test. The learners were given the DI questionnaire by the researchers and instructed to complete it during the first session. The questionnaire was completed according to the exact instructions provided by the researchers. The participants' names and other private information were kept confidential and were not mentioned in any of the study sections. The participants were instructed to write for sixty minutes on an argumentative topic in a later session. Abdulaal, Alenazi et al. (2022)'s scoring system was used to grade the students' writings. Lastly, an analysis was conducted on the students' questionnaire responses and written test results. Next, multivariate regression analysis was performed on the data using the statistical software package AMOS (Version 22).

4. RESULTS

A series of multivariate tests was conducted to address the objectives of the study. They were conducted to examine the impact of diversified intelligence on L2 writing. The results are presented in the next subsections.

4.1 The Impact of Diversified Intelligences on the Appropriateness, Relevancy, Composition, and Organization of EFL Students' Writing

Table 1 displays the findings of the Multivariate Regression Test (MRT) performed to address the first part of this research question. The logical, verbal, and musical intelligence subscales made substantial contributions to the relevance and appropriateness of the tenor of L2 writings, as Table 1 shows, as the significance values for these subscales were below 0.05).

Therefore, the first research question can be answered as follows: learners' perceptions of the relevance and sufficiency of the tenor of their L2 writings were statistically significantly impacted by their logical, visual, and musical intelligences.

Table 1. MRT on the appropriateness and relevance of the tenors of L2 writings and DI constituents.

Tenor	Coefficient	Standard Error	<i>t</i>	<i>p</i> ≥ <i>t</i>	95% Confidence Interval	
					Upper Level	Lower Level
Visual	-.03	.01	-0.87	0.02	-.08	.02
Intrapersonal	-.02	.01	-1.22	0.26	-.11	.03
Verbal	.04	.01	1.79	0.08	-.01	.14
Kinesthetic	.02	.01	1.55	0.69	-.00	.12
Interpersonal	-.01	.01	-0.01	0.98	-.05	.05
Existential	-.04	.01	-3.65	0.15	-.13	.02
Logical	.13	.01	3.24	0.01	.09	.23
Musical	-.11	.01	-2.77	0.03	-.18	-.04
Naturalistic	.02	.01	0.89	0.35	-.04	.12
Cons (intercept)	2.13	.01	5.94	0.01	1.68	2.92

Table 2 presents the multivariate regression results addressing the second part of the first research question, which examines the impact of DI on EFL students' writing composition and organization.

Table 2. MRT on the effect of DI on writing organization and composition.

Tenor	Coefficient	Standard Error	<i>t</i>	<i>p</i> ≥ <i>t</i>	95% Confidence Interval	
					(U) Level	(L) Level
Visual	-.01	.02	-0.78	0.45	-.08	.04
Intrapersonal	.02	.02	0.01	0.98	-.07	.05
Verbal	.04	.02	2.10	0.01	.01	.12
Kinesthetic	-.05	.02	-0.82	0.00	-.08	.02
Interpersonal	-.02	.02	-1.91	0.08	-.13	.01
Existential	.02	.02	0.33	0.69	-.04	.00
Logical	.04	.04	1.22	0.19	-.02	.13
Musical	-.06	.02	-2.15	0.02	-.11	-.01
Naturalistic	.07	.02	2.19	0.03	.02	.16
Cons (intercept)	2.21	.32	6.45	0.00	1.54	2.90

Verbal, kinesthetic, musical, and naturalistic intelligences have a major impact on how well students organize their work, as Table 2 shows. The significance values for the naturalist, kinesthetic, and verbal intelligences were 0.03, 0.02, 0.00, and 0.01, respectively (Table 2). Thus, the second part of the first research question can be answered as follows: learners' writing organization was significantly supported by verbal, kinesthetic, musical, and naturalist intelligence.

4.2 The Impact of Diversified Intelligences on the Cohesiveness and Vocabulary Sufficiency in EFL Learners' Writing

The results of the multivariate regression test conducted to answer the first part of this question (i.e. writing cohesiveness) are displayed in Table 3.

Table 3. MRT on writing cohesiveness and DI

Tenor	Coefficient	SE	<i>t</i>	<i>p</i> ≥ <i>t</i>	95% Confidence Interval	
					(U) Level	(L) Level
Visual	-.01	.02	0.24	0.01	-.06	.05
Intrapersonal	-.04	.02	-1.21	0.04	-.08	.03

Verbal	.06	.02	2.48	0.02	.02	.14
Kinesthetic	.00	.02	0.14	0.95	-.04	.05
Interpersonal	.05	.02	1.39	0.18	-.02	.067
Existential	-.13	.02	-3.62	0.01	-.18	-.04
Logical	.18	.02	5.66	0.03	.13	.26
Musical	-.05	.02	-1.28	0.18	-.12	.03
Naturalistic	.00	.02	0.16	0.83	-0.07	.08

As Table 3 shows, visual, intrapersonal, existential, logical, and verbal intelligence significantly impacted the students' cohesiveness of writing, as the p -values for these intelligence components were 0.01, 0.04, 0.03, 0.01, and 0.02, respectively. Hence, the answer to the first part of the second question is that visual, interpersonal, existential, and verbal intelligence contributed significantly to the students' writings.

To address the effect of diversified intelligence on the adequacy of vocabulary, multivariate regression was conducted, as reported in Table 4. As the table shows, intrapersonal and interpersonal intelligences significantly affect students' ability to use adequate vocabulary for their writing projects.

Table 4. MRT of vocabulary adequacy.

Tenor	Coefficient	SE	t	$p \geq t$	95% Confidence Interval	
					(U) Level	(L) Level
Visual [I]	-.03	.01	-0.34	0.75	-.08	.05
Intrapersonal [I]	-.05	.01	-2.32	0.02	-.13	-.02
Verbal [I]	-.01	.01	-0.05	0.99	-.06	.06
Kinesthetic [I]	-.04	.01	-0.92	0.38	-.07	.04
Interpersonal [I]	.02	.01	.63	0.03	-.04	.08
Existential [I]	-.04	.01	-.14	0.56	-.05	.07
Logical [I]	.16	.01	4.35	0.78	.09	.22
Musical [I]	-.03	.01	-1.18	0.98	-.18	.04
Naturalistic [I]	.02	.01	1.43	0.23	-0.02	.15

4.3 The Influence of Diversified Intelligences on Grammar, Punctuation, and Spelling in EFL Learners' Writing

To find the answer to the influence of diversified intelligences on grammar, punctuation, and spelling in EFL learners' writing, the results of the multivariate regression conducted are displayed in Table 5.

Table 5. MRT and Grammar of students' writings.

Tenor	Coefficient	SE	t	$p \geq t$	95% Confidence Interval	
					(U) Level	(L) Level
Visual	.03	.01	1.62	0.18	-.02	.11
Intrapersonal	-.06	.01	-2.59	0.02	-.14	-.12
Verbal	.02	.01	.64	0.55	-.030	.09
Kinesthetic	-.03	.01	0.97	0.37	-.09	.03
Interpersonal	-.02	.01	-.56	0.59	-.08	.05
Existential	-.05	.01	-1.37	0.19	-.12	.03
Logical	.16	.01	4.48	0.00	.09	.22
Musical	-.13	.01	-3.75	0.00	-.19	.07
Naturalistic	.012	.01	.40	0.03	-0.56	.08

As Table 5 shows, intrapersonal, logical, musical, and naturalistic intelligence significantly impacted EFL students' grammar, as the p -values for these intelligence components were 0.02, 0.00, 0.00, and 0.03, respectively. Hence, the answer to the first part of the third research question is that intrapersonal, logical, musical, and naturalistic intelligence significantly contribute to students' grammar. To answer the second part of the third study query (i.e., diversified intelligences and punctuation), the results of the multivariate regression are presented in Table 6.

Table 6. MRT of punctuation in students' writings.

Tenor	Coefficient	SE	T	$p \geq t$	95% Confidence Interval	
					(U) Level	(L) Level
Visual	-.13	.03	-4.39	0.01	-.10	-.07
Intrapersonal	-.04	.03	-1.10	0.26	-.09	.06
Verbal	.06	.03	1.89	.09	-.01	.15
Kinesthetic	.02	.03	2.10	0.03	.02	.12
Interpersonal	-.04	.03	-.50	0.59	-.09	.03
Existential	-.06	.03	-1.63	0.00	-.17	.01
Logical	.12	.02	4.41	0.01	.06	.15
Musical	-.09	.02	-2.52	0.89	-.15	.04
Naturalistic	.01	.02	-0.27	0.02	-0.06	.09

As Table 6 shows, visual, kinesthetic, existential, logical, and naturalistic intelligence significantly impacted the EFL students' punctuation, as the p-values for these intelligence components were 0.01, 0.03, 0.00, 0.01, and 0.02, respectively. Hence, the answer to the second part of the third study query is that kinesthetic, logical, and naturalistic intelligence significantly contribute to the learners' punctuation. To answer the third part of the third study query (i.e., diversified intelligences and spelling), the results of the multivariate regression test are presented in Table 7.

Table 7. MRT on students' spelling.

Tenor	Coefficient	SE	T	$p \geq t$	95% Confidence Interval	
					(U) Level	(L) Level
Visual	-.00	.02	-.07	.95	-.05	-.06
Intrapersonal	-.00	.02	-0.18	0.03	-.06	.05
Verbal	.06	.02	2.32	0.01	.01	.12
Kinesthetic	.01	.02	0.51	0.02	-.04	.07
Interpersonal	.06	.02	2.14	0.04	.00	.11
Existential	-.10	.03	-3.10	0.01	-.17	.03
Logical	.11	.03	3.42	0.04	.04	.17
Musical	-.09	.03	-2.78	0.09	-.16	-.02
Naturalistic	-.02	.03	-0.89	0.87	-0.09	.03

As Table 7 shows, intrapersonal, verbal, kinesthetic, interpersonal, existential, and logical intelligence significantly impacted EFL students' spelling, as the p-values for these intelligence components were 0.03, 0.01, 0.02, 0.04, 0.01, and 0.04, respectively. Hence, the answer to the third research question is that intrapersonal, verbal, kinesthetic, interpersonal, and logical intelligence significantly contribute to students' spelling.

5. DISCUSSION

The aim of this study is to investigate how intelligence affects the writing components of EFL students. Three research questions were developed to achieve this objective. The questions addressed which diversified intelligence components—tenor, organization, coherence, vocabulary, syntax, punctuation, and spelling—affected the writing components of EFL learners. The results show that musical, visual, and logical intelligences made a greater contribution to the relevance and sufficiency of the tenor of L2 writings; conversely, verbal, musical, and naturalist intelligences had an impact on L2 students' writing organization; logical, intrapersonal, and verbal intelligences made a greater contribution to the students' cohesion; logical and intrapersonal intelligences were the most effective in determining whether the vocabulary used in L2 written productions was adequate; musical, logical, and intrapersonal intelligences made a greater contribution to the syntax of L2 writings; visual and kinesthetic intelligences were the most effective DIs influencing L2 learners' punctuation; and lastly, logical, musical, and intrapersonal intelligences had an impact on the learners' spelling.

The results of the study are consistent with those of [Storch \(2009\)](#) and [Abdulaal, Ramadan et al. \(2022\)](#), who examined the connection between EFL students' performance in four different essay types and their diversified intelligence. Nonetheless, logic-oriented intelligence was found to be the most accurate predictor of interpretative essay scores. The results also agree with those of [Namaziandost et al. \(2019\)](#), who examined the potential connection between Iranian EFL learners of all genders' writing performance and diversified intelligence. The researchers believe that the correlational analysis findings illustrated a positive correlation between the total diversified intelligence and the caliber of the writing produced by the female students.

Furthermore, the results are consistent with the research conducted by [Ahmadi et al. \(2012\)](#), who examined the connection between several diversified intelligence components and grammatical scores. The multiple regression analysis revealed that linguistic competence was a predictive factor of grammatical accuracy. The researchers believe that the findings of the aforementioned studies are consistent with our own, as they validate the value of using multiple intelligences.

Conversely, the current findings of the present study contradict those of [Yeh \(2014\)](#) and [Shafiee et al. \(2020\)](#), who examined the connection between EFL learners' writing skills and diversified intelligence. Multiple regression analysis results show that there was no significant link between the participants' writing abilities and the components of DI. The findings also contradict those of [Esmaeili et al. \(2014\)](#), who examined the connection between Iranian female and male students' writing proficiency and diversified intelligence. Their findings revealed no correlation at all between the writing scores of male and female students and their DI. Additionally, no connection was found between the writing proficiency of Iranian male and female students and the elements of DI.

6. CONCLUSION

This study aims to determine how diversified intelligences affected EFL learners' L2 writing. Specifically, the purpose of this research study is to determine which DI categories contribute more to the various elements of EFL learners' writings, such as relevance and tenor sufficiency, organization, cohesion, and spelling. The answers to the first research question demonstrate that while verbal and naturalistic intelligence contributed to the writing's organization, logical and musical intelligence helped ensure that the material was adequate and relevant. The findings for the second question also demonstrate that linguistic, existential, and logic-based intelligence contributed more to students' writing cohesiveness. The results of the third research question show that students' punctuation was best served by diversified intelligence, consisting of logical, visual, and kinesthetic intelligence; musical, logical, and intrapersonal intelligence contributed more to the grammar in writing. Finally, logical, existential, and interpersonal intelligences were discovered to impact students' spelling.

Therefore, it is possible to conclude that the results point to the need for English teachers to consider the role that diversified intelligence plays in the teaching and learning process and to design more engaging exercises that would aid students with varying intelligence in developing their writing skills in other languages. The theory of diversified intelligence offers many strategies to access students' varied learning preferences. Various forms of intelligence are considered educational resources that support student growth and achievement. Since the results of this study demonstrate a strong correlation between various intelligence types and various elements of L2 writing, all intelligences should be developed if the goal of teaching and learning is to prepare students for success in today's multicultural, globalized society.

Nowadays, it is more common for teachers to consider each student's individual diversified intelligence, and their strengths and weaknesses. It is evident that when students are taught a language in various ways, their learning will advance. Once learners understand how their various intelligences function, they can use this knowledge to determine how best to use the various intelligences to optimize their learning. Additionally, the most effective strategies and the ones that students use most frequently can be identified by both teachers and students. They will also

be aware of how much these intelligences affect other skills, such as reading and writing. English teachers, textbook and syllabus designers, and educational supervisors in language schools can all benefit from the conclusions of this study. The findings of this study imply that language learners should work to develop different intelligences because this will enhance their writing abilities.

This study has some limitations, and it fails to address every facet of the topic. The first limitation is that there was a very tight time limit for the instruction. A longer instruction might give different conclusions. Second, classroom conditions and social factors may have an impact on the findings of this study, so the results cannot be generalized to a classroom with different conditions or students with different social characteristics. Finally, this study disregards the influence of student characteristics, including age, motivation, and anxiety. Regardless of these limitations, this study has significant implications for teachers and course designers who may be convinced to incorporate and take multiple intelligence theories into consideration when planning their lessons and courses based on the consequences of this research.

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