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Unpacking the Functions of Multiple Intelligences in Using Interactional Metadiscourse Markers: A Comparison across Proficiency Levels

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Abstract

Curiosity about metadiscourse markers (MMs) use in written performance of different proficiency levels has grown among discourse researchers. The current study was carried out to examine whether there was any realizable relationship between multiple intelligences (MI) and interactional metadiscourse (IM) use across proficiency levels. Particularly, it centered on exploring whether MI correlated with the employment of IM by intermediate and advance EFL written performance and whether MIs could predict their IM use in their performance. Data were collected from 90 Iranian EFL learners at two English language institutes, taking the Michigan Test of English Language Proficiency (MTELP), and the McKenzie's MI Inventory. The data were analyzed quantitatively running a multiple regression procedure through SPSS (version 22). The result of the data analysis showed that none of the MI types were predicators of IM use by intermediate EFL learners. However, interpersonal intelligence was the only negative predictor of IM use by intermediate EFL learners. Advanced EFL learners' IM use was highly and positively correlated with musical intelligence. The article suggests some implications for syllabus designers.

Keywords: intelligence, metadiscourse, proficiency level

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1. Introduction

In any interaction, ensuring social and rhetorical objectives, a writer should be aware of the reader. Therefore, writers are supposed to predict potential resistance to their ideas and try to make a relationship with the readers (Hyland, 2005). Both writers and speakers employ metadiscourse to accomplish self-impressions. Metadiscourse is defined as "the cover term for the self-reflective expressions used to negotiate interactional meaning", "to express a viewpoint and engage with readers" (Hyland, 2005, p. 37). For the last decades, metadiscourse has observed a great improvement, being investigated in different genres. It facilitates interaction, support and develop a relationship with readers. Interactional metadiscourse (IM) gives special attention to the writer-readers' interactions, with the former utilizing some linguistic resources to hold their opinions and build a relationship with the latter (Hyland, 2005). IM is concerned with persuading and engaging a reader.

The role of multiple intelligences (MIs) in language learning has been the essential matter of language acquisition research over the years. MI theory states that there are a number of various forms of intelligences that each individual enjoys in different degrees, causing many distinctive ways of knowing and perceiving about our world (Gardner, 2020). Gardner believes that human beings enjoy not only a solitary intelligence, but a group of reasonably autonomous intelligences. Armstrong (2000) states that language teachers should know that language learners enjoy different strengths, learning styles and even learning potentials but with the MI teachers can teach learners productively in various ways. Following this view, each individual has all the intelligences, however, the distinctions among the individuals are a subject of less or more developed in a specific intelligence. Based on this theory, each student enjoys a particular learning style and takes on different intelligences in everyday events. Green and Tanner (2005) explored that each individual has a personal intelligence profile, comprising a variety of capacities in relation to all the nine intelligences. Some learners learn highly well in a linguistic condition; however, other learners learn better as their courses are based on reasoning. Each learner possesses each intellect to a certain extent, one of which is more commanding (Mohebbi & Coombe, 2022). MIs give each learner a chance of discovering the sky and coming to an adaptive development (Lei et al., 2021).

1.1 Statement of the problem

Written performance plays a vital role in EFL learning. While second language learners can write, their mastery in academic writing is not as good as their mastery in general English writing. Learners enjoying different intelligences may be different in producing cohesive texts or communicating their thoughts with their readers. Wu and Yang (2022) stated that since the learners' ability in learning a second language in general and using MMs in particular is different, there is a need for the analysis of metadiscursive acts and their wording to be packaged pedagogically, especially for the benefit of non-native speakers of English. Kuhi (2017) asserted that metadiscourse cannot be approached from a realist scientific perspective, explaining knowledge as something getting out of our direct access to the external world. Instead, metadiscourse should be understood in light of a social constructivist position which questions the idea of an objective reality. The current study aims to follow specific objectives, examining IM use in written performance by Iranian authors regarding different types of intelligences.

2. Literature Review

Literature indicates that metadiscourse use in research article (RA) has been focused through several studies regarding the genre analysis view (Hyland, 2002) and culture or language. The cross-disciplinary study of metadiscourse has been the other significant research study (Cao & Hu, 2014), differing across disciplinary rhetorical cultures based on how they are used and are frequent. Thus, MMs appear to be essential in analyzing written academic discourse. Intelligence is among the various aspects of individual differences which affect education and language learning. The interest in the effect of intelligence can be attributed to the advent of a new intelligence theory proposed by Howard Gardner (1999), namely Multiple Intelligences Theory (MIT).

Inan and Erkus (2017) showed that following MIs for curriculum development might set different intellectual learning exercises and make the situation with which learners were comfortable. Learning was the beginning for challenge; learners grow by receiving challenges beyond the current abilities. Supporting learners intensely and meaningfully to involve in the learned subjects was the solid and long-standing learning basis for learning new points. The employment of MIs and the provision of various classes to improve learners' specialty allowed learners sustaining learning motivation with active participation, creating self-confidence, and promoting self-motivation.

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Simoncini et al. (2018) pointed out that teaching with MIs focused on the stipulation of autonomous, mannered, and multiple learning environment for each learner being able to display the ability, self-affirm personal performance, and further bring about strong learning interests to be greater than the originally dominant intelligence field in learning outcome. Lei et al. (2021), conducting a research on MIs, took workers in Southern Taiwan Science Park as the participants of the study. A total of 314 workers in high-tech industry are carried out the 16-week experimental teaching research. The results indicated that a) teaching through MIs influences learning motivation, b) teaching with MIs influences learning achievement, and c) learning motivation shows considerably positive impacts on learning achievement. According to the results, it is considered to contribute to high-tech industry, when developing human resource potential uniqueness.

Savojbolaghchilar et al. (2020) followed quasi-experimental research surveying the impact of vocabulary learning with and without multiple intelligence-oriented tasks on advanced EFL learners' vocabulary recall possible distinctions among learners with different intellectual benefits. To do this, a homogeneous sample of eighty advanced EFL learners was selected and they were randomly assigned to four groups including two experimental groups focusing on TVI with tasks in harmony or dissonance with their controlling intelligence, respectively. The third experimental group sat for TVI following usual class exercises and the control group received non-thematic training established upon textbook exercises. The course content consisted of sixty advanced vocabulary items being presented for ten sessions. The vocabulary recall test was given three weeks after finishing treatment, calling for the participants to utilize the vocabulary items in five paragraphs regarding the chosen topic and the frequency counts indicated the number of the new vocabulary items. The results revealed that the experimental group one who had gone through TVI with multiple intelligence-oriented tasks significantly performed better than their peers. Particularly, learners benefitting from verbal intelligence had the highest and learners enjoying intrapersonal intelligence had the lowest significant performances.

Hyland and Jiang (2018) investigated changes happened in metadiscourse use regarding writing in academic disciplines of electrical engineering, biology, applied linguistics, and sociology during the past fifty years. The result of analysis revealed that there was an increasing change based on interactive metadiscourse items and a decreasing change in the interactional ones. The findings showed that the interactional markers revealed a noticeable decrease in the soft knowledge fields and a considerable increase in the science subjects. Considering that finding, in a study carried out on two hundred evaluative essays from both hard and soft sciences Zali et al. (2020) concluded that soft science learners employed more interactional markers than those in hard sciences. Moreover, it was found that learners in both fields of studies projectingly employed self-mentions and rarely employed any attitude markers in their academic essays.

Esfandiari and Allaf-Akbary (2022) investigated two hundred and twenty research articles recorded by novice and expert Iranian applied linguists in national and international English medium journals. In their study, retrospective methods along with semi-structured interviews were followed to reach a comprehensive understanding of metadiscourse markers' employment. They drew on Hyland's (2005) metadiscourse model to analyze the corpora in three such subsections as introductions, results, and discussion. Having used chi-square tests, they went through a follow-up stimulated recall via semi-structured e-mail interviews. The MAXQDA was run to scrutinize the interview data. The results showed that expert authors used IM markers more frequently than novice authors. Moreover, it was found that the distinction between novice authors and expert authors in using attitude and engagement markers was not significant. The distribution of hedges, boosters, and self-mentions in the novice and expert authors' articles was distributed significantly different.

Wu and Yang (2022) conducted corpus-driven research considering teachers' employment of three personal metadiscourse units, including, engaging you, inclusive-we, and self-mentioning I, in teachers' discourse used in class. The analysis was done through eight sessions of teacher involvement in discourse within classroom from four native English-speaking English for Academic Purposes (EAP) teachers in the United Kingdom. A quantitative analysis indicated that teachers in an agreement gave main significance to actively engaging learners in instructions carried out in classroom. On the other hand, the qualitative analysis explored four types of metadiscourse items associated with teacher–learner interactions, namely, managing comprehension, managing learners' answers, and managing learners' discipline, classified into nine sub-classes.

Minnier et al. (2019) stated that the employment of MIs to teaching was the same as traditional teaching; teaching with MIs chosen multiple instruction strategies and exercises. Many studies showed that the employment of MIs to

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teaching improved learners' learning motivation and interests. The following research questions are therefore proposed in this study. To sum it up, while there are different studies to identify the relationship between MI and language teaching and learning, there is still a gap in the association between MI on the one hand, and employment of metadiscourse markers on the other. The current study, to fill this gap, aims to examine the kinds of MI as predictors of metadiscourse use by intermediate and advanced EFL learners.

1. Which type of multiple intelligences is a better predicator of interactional metadiscourse use by intermediate EFL learners?
2. Which type of multiple intelligences is a better predicator of interactional metadiscourse use by advanced EFL learners?

3. Methodology

3.1 Design of the Study

The current study followed a comparison group design in which participants were divided into two different experimental groups, namely intermediate and advanced ones. The results of the two groups were compared, with inferences being made as to the more appropriate method of providing information to learners. Comparing two experimental groups, the researchers made an attempt to find out how multiple intelligences can predict the IM use within two different groups.

3.2 Participants

The participants of the present study consisted of a sample of 140 intermediate and advanced Iranian young adults (male and female), whose mother tongue was Turkish. They had enrolled in EFL classes in Rezvan and Jahade-daneshghahi language institutes in Ardabil. Their age ranged from 23 to 29. 41 of the participants were left out of the study since they were beginners. Moreover, another nine language learners were left out since they did not complete the McKenzie's (1999) questionnaire (to identify learners' intelligence profiles) thoroughly. Finally, the data from 90 EFL language learners completing, the MTELP test, and the McKenzie's (1999) questionnaire were utilized for data analysis. The participants were conveniently selected considered as the most common and feasible strategy, because the participants are selected regarding convenience and ease of access (Dornyei, 2007). To achieve this, the two most famous language institutes were opted for as appropriate contexts due to the large number of enrolled students they possessed. Afterwards, the managers of these institutes were informed of the purpose of the study. The researcher assured managers and the teacher of confidentiality of the results.

3.3 Instruments

To carry out the current study, two instruments were used. They consisted of a Michigan test of English language proficiency (MTELP) and an MI questionnaire. The MTELP was administered to determine the homogeneity of the participants. McKenzie's (1999) questionnaire was employed to identify the participants' intelligence profile.

3.3.1 Michigan Test of English Language Proficiency (MTELP)

Identifying intermediate and advanced learners entails administering a standard language proficiency test. MTELP test was opted for because it did not require a lot of time to answer and the learners could take it within 40 minutes. The test is a suitable instrument for measuring proficiency in English. The reliability and validity of MTELP test have been also settled by researchers (Lim, 2011). Taking Phakiti (2003) into account, the learners achieving 70% of total scores were identified as advanced language learners, those scoring between 46% and 69% as intermediate, and those whose scores were below 45% as beginners.

3.3.2 McKenzie's MI Inventory

The MI Inventory is a form that was designed to assess the strengths of the individual as determined by each of the intelligences. In this study, McKenzie's (1999) MI inventory was used. Some researchers have claimed the overall internal consistency in the range of 0.85 and 0.90 for the questionnaire (Al-Balhan, 2006; Razmjoo, 2008; Razmjoo et al., 2009). It comprises 90 statements related to each of the nine intelligences proposed by Gardner (1999). In addition, a validated sample of the test can be found at http://surfaquarium.com/MI/MIInvent. html. In this test, the learners are supposed to complete the questionnaire by recording "Yes"/ "No" for each sentence. "Yes" showed that it suited the learner and "No" indicated that it did not.

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3.4 Procedure

In the beginning, to homogenize the participants, the participants were required to sit for a MTELP test. As mentioned earlier, the participants getting 70% of total scores were considered to be advanced language learners, participants achieving between 46% and 69% as intermediate. As a result, 41 of the participants were at the beginning level and were excluded from the study. Nine other participants did not complete MI inventory appropriately and were excluded from the study. Finally, the main participants were 90 EFL learners, 45 were intermediate and the other 45 were at advanced level, equally. After giving the tests and the questionnaire to the participants and gathering the data, the researcher taught the IM markers and their importance to the participants in two different experimental groups, namely intermediate and advanced ones. The teaching period spanned four weeks (twice a week), including the introduction, types of IM markers. Each session lasted for two hours. They were initially provided with a list of definitions and examples of the interactional categories of the taxonomy suggested by Hyland (2005). Under the supervision of the researcher, the participants were given a chance of giving synonyms for various types of metadiscourse during the teaching sessions and they were also supposed to produce sentences using markers. Moreover, the learners were also frequently provided with statements with deleted metadiscourse markers and were required to fill in the blanks with the markers. They were exposed to English texts with metadiscourse and were asked to detect them. As a final exercise, the participants employed IM markers sentence types including simple, compound, complex, and compound-complex. Since their intelligence profile was identified before, the researcher run two separate multiple regression analyses to determine which MI types are better predictors of IM use in intermediate and advanced learners' writing performance.

3.5 Data Analysis

To analyze the collected data and to answer the research questions, two multiple regression analyses were used. The data were analyzed through SPSS (version 25) to address the research questions. Furthermore, the interaction between each type of multiple intelligences and IMMs was examined to see if the predictive relations vary.

4. Results

4.1 Investigation of the First Research Question

The first question aimed to identify which types of MI are predictors of employing IM by intermediate EFL learners. To achieve this, the researcher run a multiple regression statistical analysis (Pallant, 2016). Table 1 displays the descriptive statistics for the IM use and the learners' intelligences.

Table 1. Descriptive statistics for intermediate EFL learners' IM use and MIs

	Mean	Std. Deviation	N
IM use	59.33	10.79	45
Natural	49.97	10.78	45
Musical	44.33	12.16	45
Existential	50.57	12.18	45
Interpersonal	59.48	13.33	45
Intrapersonal	47.20	12.45	45
Kinesthetic	49.40	12.07	45
Logical	51.57	15.17	45
Visual	48.35	11.51	45
Verbal	52.55	12.69	45

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As shown in Table 1, the highest mean score is for interpersonal intelligence group and the lowest mean score is for musical intelligence group. A statistical analysis of correlation coefficient was run to indicate the degree of the relationship between IM use and types of MI (Table 2).

Table 2. Correlations among IM use and MIs for intermediate EFL learners

		IM Use	Natural	Musical	Existential	Interpersonal	Intrapersonal	Kinesthetic	Logical	Visual	Verbal
Pearson Correlation	IM use	1.00	-.08	.03	-.12	-.09	.17	-.02	-.06	-.23	.12
	Natural	-.08	1.00	.19	.10	-.07	-.05	.04	-.02	-.14	-.08
	Musical	.03	.19	1.00	-.21	.02	.10	.09	.10	-.15	.09
	Existential	-.12	.10	-.21	1.00	.35	.06	-.13	-.08	-.08	-.23
	Interpersonal	-.09	-.07	.02	.35	1.00	-.05	-.04	-.09	-.11	.05
	Intrapersonal	.17	-.05	.10	.06	-.05	1.00	-.13	-.15	-.16	-.07
	Kinesthetic	-.02	.04	.09	-.13	-.04	-.13	1.00	-.15	-.23	.09
	Logical	-.06	-.02	.10	-.08	-.09	-.15	-.15	1.00	.20	.12
	Visual	-.23	-.14	-.15	-.08	-.11	-.16	-.23	.20	1.00	.16
	Verbal	.12	-.08	.09	-.23	.05	-.07	.09	.12	.16	1.00

As displayed in Table 2, IM use correlates highly and positively with interpersonal intelligence and it has highly negative correlation with visual intelligence.

Table 3. Model summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.38[a]	.14	-.07	11.17

a. Predictors: (Constant), verbal, interpersonal, intrapersonal, natural, kinesthetic, musical, logical, visual, existential

b. Dependent Variable: interactional metadiscourse use

Table 3 demonstrates how much variance is accounted for by all the nine predictors involved in the regression equation. The result states that all intelligence types altogether explain 14% of the variance in IM use by intermediate EFL learners. Regarding Table 4, no significant result was shown.

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Table 4. ANOVA on intermediate EFL learners' IM use

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	752.77	9	83.64	.67	.73[b]
	Residual	4370.42	35	124.86		
	Total	5123.20	44			

a. Dependent Variable: interactional metadiscourse use

b. Predictors: (Constant), verbal, interpersonal, intrapersonal, natural, kinesthetic, musical, logical, visual, existential

To find out how much of the variance in IM use is explained by each of the nine predictors, the standardized coefficients and the significance of the observed t-value for each predictor were examined (Table 5).

Table 5. Coefficients of MIs for intermediate EFL learners

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	82.02	23.60		3.47	.00
	Natural	-.10	.16	-.10	-.60	.55
	Musical	-.01	.15	-.01	-.08	.93
	Existential	-.07	.16	-.08	-.44	.66
	Interpersonal	-.10	.14	-.12	-.70	.48
	Intrapersonal	.10	.14	.11	.69	.49
	Kinesthetic	-.10	.15	-.11	-.67	.50
	Logical	-.02	.11	-.04	-.24	.81
	Visual	-.28	.16	-.29	-1.72	.09
	Verbal	.14	.14	.17	1.04	.30

a. Dependent Variable: interactional metadiscourse use

Displayed in Table 5, none of the nine predictors accounts for a statistically significant portion of the variance in IM use by intermediate EFL learners.

4.2 Investigation of the Second Research Question

The second question examines which types of MI are predictors of employing IM by advanced EFL learners. To do so, the researcher run a standard multiple regression and a stepwise regression analysis. Table 6 displays the descriptive statistics.

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Table 6. Descriptive statistics for advanced EFL learners' IM use and MIs

	Mean	Std. Deviation	N
IM use	61.97	30.15	45
Natural	46.42	13.27	45
Musical	42.42	12.38	45
Existential	47.60	12.83	45
Interpersonal	59.60	16.79	45
Intrapersonal	55.95	19.23	45
Kinesthetic	51.71	17.98	45
Logical	48.66	15.00	45
Visual	50.97	15.28	45
Verbal	51.06	13.33	45

As seen in Table 6, the mean value of the interpersonal intelligence group is the highest and the mean value of the musical intelligence group is the lowest. In order to determine the degree of the relationship among advanced EFL learners' IM use and types of MI, the correlation analysis was run (Table 7).

Table 7. Correlations among IM use and MIs for advanced EFL learners

		IM Use	Natural	Musical	Existential	Interpersonal	Intrapersonal	Kinesthetic	Logical	Visual	Verbal
Pearson Correlation	IM use	1.00	-11	.30	.12	-.35	-.09	-.21	-.18	-.18	.04
	Natural	-18	-21	-.05	-.1	-.04	-.7	-.23	-.21	-.22	.09
	Musical	.30	-.18	1.00	-.09	-.07	-.21	.09	-.17	-.21	.12
	Existential	.12	.9	-.09	1.00	.29	-.01	-.24	.02	-.20	-.42
	Interpersonal	-.35	-.45	-.07	.29	1.00	-.20	.01	-.17	-.06	-.19
	Intrapersonal	-.09	-.1	-.21	-.01	-.20	1.00	-.20	.40	-.12	-.24

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Kinesthetic	-.21	-.31	.09	-.24	.01	-.20	1.00	-.27	.13	.02
Logical	-.18	-.8	-.17	.02	-.17	.40	-.27	1.00	.08	.07
Visual	-.18	-.15	-.21	-.20	-.06	-.12	.13	.08	1.00	.22
Verbal	.04	.07	.12	-.42	-.19	-.24	.02	.07	.22	1.00

As indicated in Table 7, advanced EFL learners' IM use is highly and positively correlated with musical intelligence and is highly and negatively correlated with interpersonal intelligence. The model summary suggests that all intelligence types altogether explain around 38% of the total variance in IM use by advance EFL learners (Table 8).

Table 8. Model summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.618[a]	.382	.244	26.21447

a. Predictors: (Constant), verbal, kinesthetic, musical, interpersonal, visual, logical, existential, intrapersonal

b. Dependent Variable: interactional metadiscourse use

Table 9 shows a significant result. To determine how much of the variance in advanced EFL learners IM use is explained by each of the nine predictors, the researcher checked the standardized coefficients and the significance of the observed t-value for each predictor (Table 10).

Table 9. ANOVA on advanced EFL learners' IM use

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15263.51	8	1907.94	2.77	.01[b]
	Residual	24739.14	36	687.19		
	Total	40002.66	44			

a. Dependent Variable: interactional metadiscourse use

b. Predictors: (Constant), verbal, kinesthetic, musical, interpersonal, visual, logical, existential, intrapersonal

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Table 10. Coefficients of MIs for advanced EFL learners

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	119.55	52.07		2.29	.02
	Natural	-.43	.23	.17	-1.43	.34
	Musical	.55	.34	.22	1.59	.12
	Existential	.51	.37	.22	1.38	.17
	Interpersonal	-.81	.25	-.45	-3.17	.00
	Intrapersonal	-.12	.25	-.08	-.51	.61
	Kinesthetic	-.42	.24	-.25	-1.74	.09
	Logical	-.51	.30	-.25	-1.67	.10
	Visual	-.17	.28	-.08	-.6	.55
	Verbal	.11	.35	.05	.31	.75

a. Dependent Variable: interactional metadiscourse use

As indicated in Table 10, of all the nine predictors, only interpersonal intelligence accounts for a statistically significant portion of the variance in the dependent variable (advanced EFL learners' IM use). Interpersonal intelligence is the best predictor of IM use, reporting about -.45 percent of variance in advanced EFL learners' IM use. The negative beta coefficient means that an increase in the interpersonal intelligence is associated with a decrease in the advanced EFL learners' IM use. This means for every one standard deviation of change in advanced EFL learners' interpersonal intelligence, there will be about -.45 of a standard deviation change in their IM use.

5. Discussion

The current study was carried out to investigate whether MIs would predict the intermediate and advanced EFL learners' IM use. The results of the standard multiple regression indicated that MIs did not predict intermediate EFL learners' IM use. However, as for advance EFL learners, interpersonal intelligence was in opposite direction regarding IM use. That is, the higher interpersonal intelligence, the lower IM use and vice versa. The findings for intermediate EFL learners' IM use are the same as some other studies (Razmjoo, 2008; Saricaoglu & Arikan, 2009), not finding MI types as predictors of vocabulary items. The present study is not in harmony with some studies (Alghazo et al., 2009; Arnold & Fonseca, 2004) which is in contrast with the present findings in that they all, unlike the current study, focused on various types of MI as predictors of vocabulary items.

With regards to interpersonal intelligence, Larson-Freeman and Long (1991) believed that extroverts learn language better and manage learning strategies more systematically than poor language learners. It indicates the predictability of interpersonal intelligence for learning strategy use. Supposing that learners with higher interpersonal intelligence are more extroverted, so it is concluded that they know how to handle social encounters to develop their language learning. The findings of the current study for advanced language learners did not follow this view since learners with high interpersonal intelligence did not use IM efficiently to organize the message effectively. The findings of the current study are almost in line with Razmjoo (2008), finding no significant relationship between MI and English language proficiency in Iranian context. Moreover, Motallebzadeh and Manuchehri (2008) found that only logical intelligence has a significant relationship with reading comprehension and vocabulary learning and the eight other types have no significant relationship with reading comprehension and vocabulary learning.

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Since Shearer (2006) focused on the important role of gender differences in MI-based programs, one of the main reasons for such differences in different studies can be due to the gender differences bringing about distinctive features for the learners. The current study conflicts with Forgan and Bolsam (2023), stating that individuals with high linguistic intelligence can be a good writer or editor in producing language. Surprisingly, findings of this study showed that MI was not a significant predictor of IM use. Since both mathematics and language follow analytic processing, one would expect IM use to be nearly related with mathematical intelligence. The finding of the present study opposes Salehi and Sadighi (2012), claiming that there is a direct and positive relationship between second language word knowledge and intelligence. The areas of conflict mentioned above may suggest the requirement for further research. This research was different from other studies since it was conducted in an EFL context without considering gender effects and age differences.

6. Conclusion

The findings of the current study indicated that MIs did not predict the IM use by EFL learners across proficiency level. Then, MIs may not be among the factors contributing the learners to develop their knowledge of IM use. Of the studies conducted so far, a variety of questionnaires were administered to draw out the learners' intelligence. Applying distinctive types of questionnaires may bring about different results in different studies including the current study. MIs may be the reasons for different behaviors among EFL learners, however, they could not predict their use of IM. This study was faced with some limitations that need to be identified. One shortcoming was related to the gender factor. Due to the unavailability of female learners, the current study did not use a large number of EFL female learners. In the future, a larger number of female EFL learners can participate to come up with findings that are more robust. Another limitation was that this study did not focus on each IM markers in detail to find out which one can be predicted by MI. Curiously, since this study relied more on IM, the researchers, in the future, may predict interactive metadiscourse markers by MI.

6.1 Implications

The findings have implications for teachers, learners, and material developers. The findings suggest that educators should use different teaching strategies that match the strengths of each student. Some of the students in the class with some specific intelligences can benefit from applying a particular type of metadiscourse in their language production. Educators should use diverse teaching strategies, materials, and resources that address multiple intelligences to reach all learners effectively. They should also use multiple assessment methods, offer a flexible learning environment, and provide opportunities for students to explore their strengths and interests. The social perspective that metadiscourse entails has significant implications for language classes, and language teachers are gradually becoming aware of its significance.

References

Alghazo, K., Obeidat, H., Al-trawneh, M., & Alshraideh, M. (2009). Types of multiple intelligences in social studies, Arabic and English language textbooks for the first three grades. *European Journal of Social Sciences*, *12*(1), 7-20.

Armstrong, T. (2000). *Multiple intelligences in the classroom* (2nd ed.). Alexandria, VA: Association of Supervision and Curriculum Development.

Arnold, J., & Fonseca, M. C. (2004). Multiple intelligence theory and foreign language learning: A Brain-based perspective. *IJES*, *4*(1), 119-136. doi:10.6018/ijes.4.1.48141

Cao, F., & Hu, G. (2014). Interactive metadiscourse in research articles: A comparative study of paradigmatic and disciplinary influences. *Journal of Pragmatics*, *66*(5), 15-31. https://doi.org/10.1016/j.pragma.2014.02.007

Dornyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.

Esfandiari, R., & Allaf-Akbary, O. (2022). Metadiscursive features in research articles: The role of stimulated recall. *Journal of English Language Teaching and Learning*, *14*(29), 245-263. https://elt.tabrizu.ac.ir/article_14641_05d2c53d848e8a81225d0d95972bb92a.pdf

Forgan, W. G., & Balsamo, N. (2023). *Parent's quick start guide to dyslexia*. Taylor & Francis.

Gardner, H. (1999). *Intelligence reframed: multiple intelligences for the 21st century*. New York: Basic Books.

[DOR: 20.1001.1.25384015.2023.8.3.5.5]

Gardner, H. (2020). Neuromyths: a critical consideration. *Mind Brain Educ. 14*(1), 2–4. https://doi.org/10.1111/mbe.12229

Green, C., & Tanner, R. (2005). Multiple intelligences and online teacher education. *ELT Journal, 59*(4), 312-321. https://www.researchgate.net/publication/46663677_Multiple_intelligences_and_online_teacher_education

Hyland, K. (2002). Authority and invisibility: Authorial identity in academic writing. *Journal of Pragmatics*, *34*(8), 1091-1112. https://doi.org/10.1016/S0378-2166(02)00035-8

Hyland, K. (2019). *Metadiscourse: Exploring interaction in writing* (2nd edition). Continuum.

Hyland, K., & Jiang, F. K. (2018). In this paper we suggest: Changing patterns of disciplinary metadiscourse. *English for Specific Purposes*, *51*, 18-30. https://doi.org/10.1016/j.esp.2018.02.001

İnan, C., & Erkuş, S. (2017). The effect of mathematical worksheets based on multiple intelligences theory on the academic achievement of the students in the 4th grade primary school. *Universal Journal of Educational Research*, *5*(8), 1372-1377. https://files.eric.ed.gov/fulltext/EJ1150931.pdf

Kuhi, D. (2017). Towards the development of a socially-informed, process-oriented model of research in metadiscourse. *The Journal of English Language Pedagogy and Practice*, *10*(20), 92-129. https://jal.tabriz.iau.ir/article_532471_b6b175db4c587f66b032aaa4160c7e21.pdf

Larsen-Freeman, D., & Long, M. H. (1991). *An introduction to second language acquisition research*. London: Longman.

Lei, D., Cheng, J., Chen, C., & Huang, K. (2021). Discussion of teaching with multiple intelligences to corporate employees' learning achievement and learning motivation. *Frontiers In Psychology*, *12*(2), 34-46. doi: 10.3389/fpsyg.2021.770473

Lim, G. S. (2011). The development and maintenance of rating quality in performance writing assessment: A longitudinal study of new and experienced raters. *Language Testing*, *28*(4), 543-560. https://doi.org/10.1177/0265532211406422

McKenzie, W. (1999). *Multiple intelligences survey*. http://surfaquarium.com/MI/MIinvent. htm

Minnier, W., Leggett, M., Persaud, I., & Breda, K. (2019). Four smart steps: Fall prevention for community-dwelling older adults. *Creative Nursing*, *25*(2), 169-175. https:// 169–175. 10.1891/1078-4535.25.2.169

Mohebi, H., & Coombe, C. (2022). *Research questions in language education and applied linguistics*. Buch. Softcover.

Motallebzadeh, K., & Manouchehri, M. (2008). On the relationship between multiple intelligences and reading comprehension gain on IELTS. *SID Journal*, *42*(2), 135-140.

Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using SPSS program* (6th ed.). McGraw-Hill Education.

Phakiti, A. (2003). A closer look at gender and strategy use in L2 reading. *Language Learning*, *53*(4), 649-702. https://doi.org/10.1046/j.1467-9922.2003.00239.x

Razmjoo, S. A. (2008). On the relationship between multiple intelligences and language proficiency. *The Reading Matrix*, *8*(2), 155-174. https://www.researchgate.net/publication/239951180_ON_THE_RELATIONSHIP_BETWEEN_MULTIPLE_INTELLIGENCES_AND_LANGUAGE_PROFICIENCY

Razmjoo, S. A., Sahragard, R., & Sadri, M. (2009). On the relationship between multiple intelligences, vocabulary learning knowledge and vocabulary learning strategies among the Iranian EFL learners. *The Iranian EFL Journal Quarterly*, *3*, 82-110.

[DOR: 20.1001.1.25384015.2023.8.3.5.5]

Salehi, M., & Sadighi, F. (2012). The relationship between intelligence and foreign language learning, and the role of practice. *Journal of Language, Culture, and Translation*, *1*(1), 33-48. https://journals.iau.ir/article_551415_81b7afd3b3715d0ca9365b1daf8dc7bf.pdf

Saricaoğlu, A., & Arikan, A. (2009). A study of multiple intelligences, foreign language success and some selected variables. *Journal of Theory and Practice in Education*, *5*(2), 110-122. https://files.eric.ed.gov/fulltext/ED506218.pdf

Savojbolaghchilar, S., Seifoori, Z., & Ghafoori, N. (2020). The effect of multiple intelligence-oriented thematic clustering on advanced EFL learners' vocabulary Learning. *Teaching English as a Second Language Quarterly (Formerly Journal of Teaching Language Skills)*, *39*(2), 169-201. doi: 10.22099/jtls.2020.38332.2877

Shearer, C. B. (2006). *Reading skill and multiple intelligences*. Researched and consulting: Kent, Ohio.

Simoncini, K., Elliott, S., Carr, V., Manson, E., Simeon, L., & Sawi, J. (2018). Children's right to play in Papua New Guinea: insights from children in years 3–8. *Int. J. Play, 7*(2), 146–160. doi: 10.1080/21594937.2018.1495993

Wu, X., & Yang, H. (2022). Unpacking the functions of personal metadiscourse in teachers' classroom discourse. *Sustainability*, *14*(20), 2-16. doi.org/10.3390/su142013502

Zali, M. M., Mohamad, R., Setia, R., Baniamin, R., & Razlan, R. M. (2020). Interactional metadiscourse analysis of evaluative essays. *Journal of Social Sciences and Humanities*, *5*, 120-129. https://ejssh.uitm.edu.my/images/Vol5Feb20/ICOMS9.pdf

[DOR: 20.1001.1.25384015.2023.8.3.5.5]