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Original Research

Designing Multiple Intelligences-Based Supplementary Materials for *Vision* Series: Probing Their Impact on Iranian EFL Students' Multiple Intelligences

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Abstract

An engaging and enjoyable atmosphere for learning English as a second language can provide the right setting for promoting language proficiency. It appears that textbooks are essential in this regard. This study aimed to investigate how learners' multiple intelligences were affected by the supplementary materials designed for them. To do so, a three-phase study was designed. In Phase 1, a triangulation model based on a checklist, teacher interviews, and researchers' experience was employed to evaluate the Vision series based on multiple intelligence factors. In the second phase, supplementary materials were designed based on the results obtained in the first phase, in accordance with Jones' (2017) guidelines and Christion's (1997) taxonomy of language learning activities for multiple intelligences. The designed tasks and activities were implemented in a class (experimental group, N = 60) during the third phase. The Babel proficiency test was used, and The Persian version of Mckenzie's multiple intelligences inventory (Hajhashemi & Bee Eng, 2010) were administered to both experimental and control groups as the pretest and posttest to ensure the homogeneity of two groups at first and examine the impact of these tasks on students' multiple intelligences. The result of the first phase revealed that *Vision* series did not have enough tasks to fulfil learners' needs based on multiple intelligences abilities, and there is a need to provide supplementary tasks in order to teach with multiple intelligences. In the second phase, the designed tasks were implemented in experimental groups for four months as supplementary material. The t-test result indicated that the designed tasks positively and significantly affected learners' multiple intelligences.

Keywords: Multiple Intelligences Based Tasks, Supplementary Materials, Vision Series

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1. Introduction

According to Tomlinson (2007), anything teachers or students use to make language learning easier can be categorized as "material". Videos, DVDs, emails, dictionaries, novels, and more can all be included. Tasks or texts can also be considered materials. The term "materials development" encompasses the various procedures for creating and utilising instructional materials to facilitate language acquisition. Materials assessment, adaptation, design, production, exploitation, and research are examples of these processes (Tomlinson, 2016).

Materials appear to impact how students relate to the class and identify their capabilities. With the emphasis on the importance of feeling and students' metacognitive skills, multiple intelligences (MI) have gained attention. To describe MI, intelligence must be defined. Intelligence was connected to cognition. It was assumed that intelligence was general and that a person's intelligence could be assessed using a specific test. Previous research has focused on individuals' cognitive aspects, such as problem-solving and memory. Strenberg (2018) defined intelligence as an information-processing construct such as working memory, a biological construct residing in the brain, or a developmental program that unfolds over time.

In recent years, various studies have been conducted on high school textbooks in Iran, and the educational and cultural aspects of English textbooks have also been explored. For example, Moghsoudi and Khodamoradi (2023) evaluated the English language textbooks for Iranian high schools based on education objectives. The study revealed that there is no balance between native culture and non-native culture. Moreover, the content of these books lacks sufficient instances of interaction and communication in the form of chats and conversations with English speakers, whether native or non-native speakers. Most students cannot meet their needs by learning these books. According to Tabatabaei and Pourakbari (2012), the formal education of English in schools in Iran has largely failed to achieve its goals. The English programs at high schools do not motivate learners and seldom arouse their interest and learning. Therefore, the present study aims to design tasks and supplement the Vision series taught in high schools in Iran with materials that incorporate multiple intelligences to enhance student learning.

2. Literature Review

The term' material' includes anything used to facilitate the process of learning a language. They can be visual, auditory, linguistic or kinesthetic. They can be presented in different ways. For example, they can be on cassettes, CDs, DVDs, papers or the internet (Tomlinson, 2001).

There has been a significant surge in the body of literature on material development within the last two decades. As Evans and John (1998) assumed, a competent material creator should select from the available options appropriately. This relates to technical design activities for which most teachers lack adequate preparation. They should make an effort to adapt tasks to the students' requirements. The practice of adapting to meet the needs of various learners is known as differentiation. Since every student has unique goals, the resources and instructions may vary (Graves, 2008). Textbooks and other materials should be differentiated based on the needs of the students. Providers should offer additional activities as a supplement to their services. The nature of language learning and teaching refers to the content specification, the roles of teachers and learners, and the materials and procedures, which encompass a variety of educational tasks that can be drawn upon (Richards, 2005).

According to Harwood (2010), several key principles for language learning may influence the process of developing materials. There are three interpretations of the concept of input: a) the behaviourist view about the importance of the environment and reinforcement; b) the mentalist view, which emphasizes the position of learners' brains and exposure to input (Ellis, 2003). c) The interactionist view ensures the significance of both the input and internal language processes. To develop the material, writers should be confident that the materials include plentiful spoken and written passages and expose learners to authentic themes that represent how the language is stereotypically used (Gilmore, 2007).

For many years, most teachers have been utilizing materials and textbooks. In most cases, these materials could not meet learners’ needs in terms of their interface, level, inspiration and engagement. That is why most teachers may feel the need to provide supplementary materials for their own classes, as it can bridge the gap between what English coursebooks offer and what learners need (Harmer, 2003).

Contextualization is crucial for teachers to consider when creating their own teaching materials. Various definitions of contextualization exist (Perin, 2011). According to Beder and Medina (2001), some of these definitions emphasise the incorporation of authentic materials and activities within the classroom. Another definition emphasises the connection between knowledge and real-life applications, promoting experiential learning, as proposed by Berns and Erickson (2001). Additionally, contextualization can involve integrating critical thinking, problem-solving, and creativity into instructional activities (Mazezeo. Rab, & Alssid, 2003). It can also be described as utilising language components in a meaningful and pertinent setting. This approach helps students acquire new skills and enhance their abilities (Tomlinson, 2011). Frequently, a textbook may present content in a manner that is unsuitable for a specific teaching context, thus failing to align with the reality of the classroom. Moreover, experienced teachers do not like to follow a course book's script inflexibly. This is when teachers must determine what modifications, additions, or extensions are necessary to accommodate the student's needs. Numerous textbooks may also foster a socially isolated learning environment. Therefore, teachers may require supplementary materials to engage learners and cultivate an interactive classroom atmosphere (Karpova, 1999).

The next important guide for instructors on providing tasks for learners is personalisation. This happens when activities allow students to use language to express their own ideas, thoughts, and preferences. It is an important part of a communicative approach (Tomlinson, 2009). It emphasised students' role in taking ownership of their learning by assuming them as active individuals. As learners have different learning styles, such as visual and auditory, teachers need to provide tasks tailored to these styles to help them achieve their own goals in the learning process. Each person has different ways of learning and utilises various intelligences in their daily lives. Individuals may possess numerous intelligences. This concept is known as the Theory of Multiple Intelligences (Gardner, 2010). Multiple intelligences (MI) entered the testing, learning and teaching field thirty years ago. To describe MI, intelligence must be defined. Students need to explore their intelligence and learn how to utilise it effectively. It is also essential for teachers to understand how to work with diverse intelligences and employ various teaching methods. Activities used by the teacher must be appealing and suitable for the students to develop intelligence (Campbell, 2008).

Strenberg (1988) introduced componential ability as the most widely acknowledged form of intelligence. This can be assessed through IQ tests and encompasses logic, abstract thinking, and verbal and mathematical skills. Additionally, according to the componential theory, learning is influenced by three components within the individual: domain-relevant skills (expertise in the relevant domain or domains), creativity-relevant processes (cognitive and personality processes that promote innovative thinking), and task motivation (specifically, the intrinsic motivation to participate in the activity due to interest, enjoyment, or a personal sense of challenge). Furthermore, it is linked to the component outside the individual, the surrounding environment—particularly the social environment (Amabile, 2013).

Gardner (1991) suggested that the traditional notion of intelligence, based on IQ testing, is too limited. Instead, he proposed eight different intelligences, known as Multiple Intelligences (MI). Based on this theory, humans can comprehend the world using intellect. Variances in these intellectual capabilities among individuals can pose a challenge within the educational system. The intelligences which can be served as learning styles are as follows:

1. Verbal–linguistic: using the words effectively.
2. Logical-mathematical: calculating and reasoning.
3. Spatial–visual is the ability to think in images and pictures, to imagine precisely and conceptually.
4. Bodily-kinesthetic is the ability to regulate one's body actions and handle objects competently.
5. Musical: it is the ability to produce and escalate rhythm, pitch and timber.
6. Interpersonal: it is the ability to notice and reply correctly to the moods, motivations and needs of others.
7. Intrapersonal: It is the ability to be self-aware and in line with inner feelings, values, beliefs, and thinking processes.
8. Naturalistic: recognising and categorising plants, animals and other natural objects.

The theory of multiple intelligences directly relates to learning foreign languages. Teachers and learners may draw different implications that are helpful in the teaching process and in textbook design (Cerruti, 2013). For instance, the teacher should consider individual differences when teaching foreign languages, as each learner possesses unique

intelligence, and the teacher's role is to identify this intelligence to provide the learner with activities and assignments accordingly (Riddell, 2014). This makes the learning process effective. Gardner (2010) assures that each learner has their multiple intelligences, which are different from those of other learners. The role of the teacher is to identify and nurture the unique intelligence of each child. The teacher and curriculum designers should prepare the activities based on these abilities and intelligences. (Souza & Ferreira, 2020)

McKenzie (2012) believed that implementing MI-based learning strategies and tasks in schools improves learning outcomes, student achievement, interest, motivation, and emotional intelligence. Students' retention increases as they develop their multiple intelligences and improve their self-esteem. In line with this assumption, Ghamrawi (2014) investigated the child's ability to learn vocabulary. It has been proven that the application of MI theory does not accelerate children's word learning but rather improves their retention in learning. However, previous studies on multiple intelligences were more focused on the impact of the learning method on students' interests, self-esteem, and learning outcomes. There was only a small amount of research on multiple intelligences that tried to improve the multiple intelligences themselves.

The main aim of the present study is to design tasks that enable teachers to teach with multiple intelligences. The next phase is implementing these tasks in real classes to find their effectiveness through an experimental study. For this purpose, the following questions were posed:

1. Is there any need to provide supplementary tasks for the *Vision* series in order to teach with multiple intelligences?

2. Do the designed tasks significantly impact learners' motivation and interest (MI)?

3. Methodology

3.1. Participants

The present study participants comprised 120 students, 60 of whom were in the control group, and the rest were in the experimental group at three high schools (Nasr, Novin, and Monji) in Mashhad. The participants were randomly divided into control and experimental groups. Their age varied from 14 to 16; they were Iranian boys from the tenth, eleventh, and twelfth grades studying *Vision* series in the formal educational system separately. They

were all male students, as the researchers had limited accessibility. The Babel English Language Placement Test (BELPT) was utilized to meet the primary requirement of experimental research. The demographic background of the participants is presented in Table 1.

Table 1.

Demographic Information of the Participants

No. of students	**120 (60 control/60 experimental)**
Gender	All boys
Native language	Persian
Schools	Nasr, Novin, and Monji
Academic year	2023

3.2. Instruments

3.2.1. The Paper Version of Babel English Language Placement Tests (BELPT)

The paper version of Babel English Language Placement Tests (BELPT) was utilized to determine language proficiency. It is closely based on the Nelson Quick Check Placement Tests. The testing cycle should require no more than 70 minutes of trainee time and did not require any specialist testers to administer it. The tests were in multiple-choice format and consisted of items measuring the recognition of correct responses to reading prompts, grammatical forms and lexical choices in context. The test has demonstrated acceptable reliability and validity indices (Sharifi et al., 2017).

3.2.2. The Persian Version of McKenzie's Multiple Intelligences Inventory

To identify the intelligence profile of the participants, the Persian version of McKenzie's MI inventory was used. It has been validated by Hajhashemi and Bee Eng (2010). The item content validity and scale content validity were from good (between 0.60 and 0.74) to excellent (above 0.74). The reliability also fell in the high-moderate to high range, with alpha coefficients ranging from 0.82 to 0.90 and a median of 0.86. The Cronbach alpha for the test was also found to be 0.90, indicating high reliability. It comprises 90 statements related to each of the nine intelligences proposed by Gardner (1991).

3.2.3. Multiple Intelligence Checklist for Coursebooks

The researchers designed a checklist for the course book to identify the problems in the Vision series from multiple intelligence perspectives. High school teachers and university lecturers were kindly asked to answer. It was driven by the taxonomy of language learning activities for multiple intelligences designed by Christison (1997). In this study, experts and university instructors were asked to review the first draft and verify whether any checklist items were missing or if any items could be deleted. The checklist comprised 24 items assessing eight subscales, including linguistic, logical, spatial, bodily, musical, interpersonal, intrapersonal, and naturalistic intelligence tasks, as outlined in the book. It was measured on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), and each subscale consisted of three statements to assess every aspect of multiple intelligences.

3.3. Procedure

In the first phase, the researchers conducted a need analysis. It was a kind of triangulation analysis. The first part utilised a checklist derived from the taxonomy of language learning activities for multiple intelligences by Christion (1997) to evaluate multiple intelligences-based tasks in the *Vision* series. Another part of this triangle was the colleagues' view of the snags that pertained to the multiple intelligences side of the book. To achieve this end, ten high school teachers were randomly asked about the problems associated with the *Vision* series based on multiple intelligences. The last dimension was the researchers' own experience. In the second phase of this study, the researchers designed tasks for every lesson of the series. The *vision* series comprises three books: *Vision* One for Grade 10 has four lessons, *Vision* Two for Grade 11 has three lessons, and *Vision* Three for Grade 12 has three lessons. The designed tasks were based on Jones's (2017) guideline and the taxonomy of language learning activities for multiple intelligences provided by Christion (1997).

For example, according to Christinson (1997), tasks can provide learners with different videos, graphic organizers and visual awareness activities to teach multiple intelligences. To answer some tasks, for instance, students were asked to watch a video on the site designed for visual tasks and then answer the questions or check the correct answers. Or they were asked to choose from a list of what they had seen in the video (See appendix A).

In the third phase, there were two groups with sixty members. The designed tasks were implemented in experimental groups over four months, comprising sixteen sessions, as supplementary material. The term started in October 2023 and finished in February 2024. One hundred and twenty students kindly participated in this study. Sixty were in the control group, and others were in the experimental group. Some matching tasks helped learners use their spatial, verbal, and interpersonal intelligence. For instance, the tasks required learners to read the texts, examine the photos, and match each text to the corresponding photo. Then, learners discuss with their partners how they were able to match them. Some comparison tasks ask learners to write a list of the parameters of a healthy lifestyle and then compare their own list with those of their partners. Finally, learners should combine the lists and give them to the teacher. This way, learners can use their logical, verbal, and interpersonal intelligences. The supplementary material also contains tasks based on common problems, such as pollution and relationships. For instance, a task asked learners to think about a town centre with excessive traffic. Learners should consider three alternative solutions for this problem, then list the advantages and disadvantages of each, and decide which one is the most innovative, providing reasons. This task can help learners use logical, naturalistic, and intrapersonal intelligence. Completing these types of tasks in experimental groups may improve their intelligence by the end of the course. After every unit, learners were asked to complete the tasks either in class or at home. Instructors checked the assignments in class or through group exercises, if required. However, there were no supplementary materials in the control groups, and learners studied the course book (Vision) without completing extra tasks. As the book's activities did not adequately address the psychological aspects of learning and individuals' diverse abilities, the classes would not be enjoyable and interesting for learners.

Babel Proficiency Test and The Persian Version of McKenzie's Multiple Intelligences Inventory were administered to the students of the two groups at the beginning of the term as the pretest. Ultimately, the scale was used to assess the effectiveness of the tasks on learners' multiple intelligences.

3.4. Data Analysis

To ensure the homogeneity of the two groups in terms of language proficiency and multiple intelligences, an independent samples t-test using SPSS version 22 is employed.

An independent samples *t*-test examines the impact of designed tasks on learners' multiple intelligences and language achievement.

4. Results

The Kolmogorov-Smirnov test was used to assess the normality of the data distribution. This test is used to check whether the distribution deviates from a comparable normal distribution. If the p-value is non-significant ($p > 0.05$), we can say that the distribution of a sample is not significantly different from a normal distribution; therefore, it is considered normal. If the p-value is significant ($p<.05$), it implies that the distribution is not normal. Table 2 presents the results of the Kolmogorov-Smirnov test. As can be seen, the obtained significance value for all variables is higher than 0.05. Therefore, it can be safely concluded that the data is normally distributed across all four variables.

Table 2

Kolmogorov-Smirnov Test

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
MI	.07	179	.07
BABEL	.08	179	.08

4.1. The Results of Pretests

4.1.1. Students' Proficiency Level

4.1.1.1. Tenth Grade Students

To examine whether the two groups of tenth-grade students were homogeneous at the beginning of the study regarding their proficiency level, the Babel Test was administered to both the control and experimental groups. Table 3 presents the results of the t-test on the Bebel Test.

Table 3

Descriptive Statistics of Tenth-Grade Students' Proficiency Level in Pretest

	Group	N	Mean	Std. Deviation	Std. Error Mean
BabelTest	Control	20	13.20	1.67	.37
	Experimental	20	12.45	1.50	.33

As can be seen, the mean scores are nearly identical for the control (M = 13.20, SD = 1.67) and experimental (M = 12.45, SD = 1.50) groups. However, an independent samples t-test was run to ensure the homogeneity of the two groups, as demonstrated in Table 4.

Table 4

The Results of T-test on Tenth Grade Students' Proficiency Levels in Pretest

		Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
BabelTest	Equal variances assumed	.09	.75	1.49	38	.14	.75	.50
	Equal variances not assumed.			1.49	37.57	.14	.75	.50

Table 4 indicates that there is no statistically significant difference between the two groups of tenth-grade students regarding their proficiency level ($t = 1.49$, $p > .05$).

4.1.1.2. Eleventh Grade Students

The Babel Test was administered to both control and experimental groups of eleventh-grade students to assess the homogeneity of their proficiency levels. Table 5 shows the results of the t-test on the Bebel Test.

Table 5

Descriptive Statistics of Eleventh-Grade Students' Proficiency Level in Pretest

	Group	N	Mean	Std. Deviation	Std. Error Mean
BabelTest	Control	20	12.65	2.00	.44
	Experimental	20	17.500	23.25	5.19

As can be seen, the mean scores differ between the control (*M* = 12.65, *SD* = 2.00) and experimental (*M* = 17.55, *SD* = 23.25) groups. Therefore, an independent samples t-test was conducted to ensure the homogeneity of the two groups, as shown in Table 5.

Table 6

The Results of T-test on Eleventh-Grade Students' Proficiency Levels in Pretest

		Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
BabelTest	Equal variances assumed	3.21	.08	-.93	38	.35	-4.90	5.21
	Equal variances not assumed			-.93	19.28	.35	-4.90	5.21

Table 6 shows no statistically significant difference between the two groups of eleventh-grade students in their proficiency level ($t = 0.93$, $p > .05$).

4.1.1.3. Twelfth Grade Students

To examine whether the two groups of twelfth-grade students were homogeneous at the beginning of the study regarding their proficiency level, the Babel Test was administered to both the control and experimental groups. Table 6 shows the results of the t-test on the Bebel Test.

Table 7

Descriptive Statistics of Twelfth-Grade Students' Proficiency Level in Pretest

	Group	N	Mean	Std. Deviation	Std. Error Mean
BabelTest	Control	20	12.85	2.00	.44
	Experimental	20	12.90	1.86	.41

As can be seen, the mean scores are nearly identical for the control (M = 12.85, SD = 2.00) and experimental (M = 12.90, SD = 1.86) groups. However, an independent samples t-test was run to ensure the homogeneity of the two groups, as demonstrated in Table 7.

Table 8

The Results of T-test on Twelfth Grade Students' Proficiency Levels in Pretest

		Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
BabelTest	Equal variances assumed	.01	.89	-.08	38	.93	-.05	.61
	Equal variances not assumed			-.08	37.78	.93	-.05	.61

Table 8 indicates that there is no statistically significant difference between the two groups of twelfth-grade students regarding their proficiency level (t = 0.08, p > .05).

4.1.2. Students' Multiple Intelligences

4.1.2.1. Tenth Grade Students

To determine whether the two groups of tenth-grade students were homogeneous in terms of their multiple intelligence levels prior to the study, the Multiple Intelligences Inventory (MI Inventory) was administered to both groups. Table 9 shows the results of the t-test.

Table 9

Descriptive Statistics of Tenth-Grade Students' Multiple Intelligences in Pretest

	Group	N	Mean	Std. Deviation	Std. Error Mean
MIPre	Control	20	34.80	10.35	2.31
	Experimental	20	35.50	3.67	.82

As can be seen, the mean scores differ slightly for the control (M = 34.80, SD = 10.35) and experimental (M = 35.50, SD = 3.67) groups. An independent samples t-test was conducted to verify the homogeneity of the two groups presented in Table 10.

Table 10

The Results of T-test on Tenth Grade Students' Multiple Intelligences in Pretest

		Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
MIPre	Equal variances assumed	9.43	.12	1.91	38	.06	-4.70	2.45
	Equal variances not assumed			1.91	23.71	.06	-4.70	2.45

Table 10 indicates that there is no statistically significant difference between the two groups of tenth-grade students' multiple intelligences ($t = 1.91$, $p > .05$).

4.1.2.2. Eleventh Grade Students

The homogeneity of eleventh-grade students was also checked at the beginning of the study concerning their multiple intelligences level. The results are depicted in Table 11.

Table 11

Descriptive Statistics of Eleventh-Grade Students' Multiple Intelligences in Pretest

	Group	N	Mean	Std. Deviation	Std. Error Mean
MIPre	Control	20	38.45	2.45	.55
	Experimental	20	37.25	4.31	.96

As can be seen, the mean scores are slightly the same for the control (*M*=38.45, *SD*=2.45) and experimental (*M*=37.25, *SD*=4.31) groups, yet an independent samples t-test was run to ensure the homogeneity of the two groups as depicted in Table 12.

Table 12

The Results of T-test on Eleventh-Grade Students' Multiple Intelligences in Pretest

		Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
MIPre	Equal variances assumed	1.92	.17	1.08	38	.28	1.20	1.11
	Equal variances not assumed.			1.08	30.16	.28	1.20	1.11

Table 12 illustrates that there is not a statistically significant difference between the two groups of eleventh-grade students regarding their multiple intelligences (t= 1.08, p> .05).

4.1.2.3. Twelfth Grade Students

To examine whether the two groups of twelfth-grade students were homogeneous at the beginning of the study in terms of their multiple intelligence levels, the Multiple Intelligences Inventory (MI Inventory) was administered to both the control and experimental groups. Table 13 shows the results of the t-test on the questionnaire.

Table 13

Descriptive Statistics of Twelfth-Grade Students' Multiple Intelligences in Pretest

	Group	N	Mean	Std. Deviation	Std. Error Mean
MIPre	Control	20	30.75	8.66	1.93
	Experimental	20	32.73	4.90	1.09

As can be seen, the mean scores are slightly different for the control (*M*=30.75, *SD*=8.66) and experimental (*M*=32.73, *SD*=4.90) groups; however, an independent sample t-test was run to ensure the homogeneity of the two groups demonstrated in Table 14.

Table 14

The Results of T-test on Twelfth Grade Students' Multiple Intelligences in Pretest

		Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
MIPre	Equal variances assumed	9.04	.08	-3.59	38	.21	-8.00	2.22
	Equal variances not assumed.			-3.59	30.04	.21	-8.00	2.22

Table 14 indicates that there is not a statistically significant difference between the two groups of twelfth-grade students regarding their multiple intelligences (t= 0.08, p> .05).

4.2. Results

4.2.1. RQ1: Is there any need to provide supplementary tasks for the *Vision* series in order to teach multiple intelligences?

A triangulation model was run to determine whether there is a need to provide supplementary tasks for the Vision series to teach multiple intelligences. The results of fifteen experts' opinions regarding the MI dimension of Vision books are presented in Table 15.

Table 15

Descriptive Statistics of Experts' Analyses on Multiple Intelligences in Vision Series

	N	Minimum	Maximum	Mean	Std. Deviation
Linguistic	15	6.00	10.00	7.20	1.26
Logical	15	6.00	8.00	7.06	.88
Spatial	15	4.00	9.00	6.06	1.53
Bodily	15	4.00	10.00	7.06	1.66
Musical	15	6.00	9.00	6.73	.88
Interpersonal	15	4.00	7.00	6.00	.92
Intrapersonal	15	5.00	8.00	6.60	.98
Naturalistic	15	3.00	6.00	4.93	1.09
Valid N (listwise)	15				

As the mean scores of each multiple intelligence indicate, the Vision series has not paid sufficient attention to students' linguistic, logical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalistic intelligence. Thus, there was a need to design supplementary material with the aim of enhancing students' MI through the teaching of the *Vision* Series.

4.2.2. RQ2: Do the designed tasks have any significant impact on learners' MI?

4.2.2.1. Tenth Grade Students

The differences between the two groups were calculated in the post-test to investigate the effect of treatment on the MI of tenth-grade students. The means of both groups in the post-test were shown to be different. As can be seen in Table 16, the mean of the experimental groups (*M*= 73.05, *SD*= 5.72) is higher than that of the control groups (*M*= 39.70, *SD*= 3.45).

Table 16

Descriptive Statistics of Tenth-Grade Students' Multiple Intelligences in Posttest

	Group	N	Mean	Std. Deviation	Std. Error Mean
MIPost	Control	20	39.70	3.45	.77
	Experimental	20	73.05	5.72	1.28

To investigate whether this observed difference is statistically significant, an independent-sample t-test was run. As Table 17 shows, there is a statistically significant difference between the experimental and control groups (t= -22.31, p <.05). In other words, it can be implied that the experimental group gained higher scores in multiple intelligences and this is an indication of the effectiveness of the treatment employed in the experimental group in enhancing their multiple intelligences.

Table 17

Independent – Samples t-Test for Tenth Grade Students' Multiple Intelligences in Posttest

		Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
MIPost	Equal variances assumed	2.15	.15	-22.310	38	.000	-33.35	1.49
	Equal variances not assumed			-22.31	31.19	.000	-33.35	1.49

4.2.2.2. Eleventh Grade Students

The differences between the two groups were calculated in post-test to investigate the effect of treatment on the eleventh students' MI. The means of both groups in the post-test were shown to be different. As can be seen in Table 18, the mean of the experimental groups (M= 78.15, SD= 4.20) is higher than that of the control groups (M= 36.20, SD= 13.92).

Table 18

Descriptive Statistics of Eleventh-Grade Students' Multiple Intelligences in Posttest

	Group	N	Mean	Std. Deviation	Std. Error Mean
MIPost	Control	20	36.20	13.92	3.11
	Experimental	20	78.15	4.20	.94

To investigate whether this observed difference is statistically significant, an independent-sample t-test was run. As Table 19 shows, there is a statistically significant difference between the experimental and control groups (t= -12.89, p <.05). In other words, it can be implied that the experimental group gained higher scores in multiple intelligences and this is an indication of the effectiveness of the treatment employed in the experimental group in enhancing their multiple intelligences.

Table 19

Independent – Samples t-Test for Eleventh Grade Students' multiple intelligences in Posttest

		Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
MIPost	Equal variances assumed	7.89	.13	-12.89	38	.00	-41.95	3.25
	Equal variances not assumed			-12.89	22.44	. 00	-41.95	3.25

4.2.2.3. Twelfth Grade Students

The differences between the two groups were calculated in post-test to investigate the effect of treatment on the twelfth students' MI. The means of both groups in the post-test were shown to be different. As can be seen in Table 20, the mean of the experimental groups (M= 71.60, SD= 7.06) is higher than that of the control groups (M= 38.80, SD= 4.42).

Table 20

Descriptive Statistics of twelfth Grade Students' multiple intelligences in Posttest

	Group	N	Mean	Std. Deviation	Std. Error Mean
MIPost	Control	20	38.8000	4.42005	.98
	Experimental	20	71.6000	7.06660	1.58

To investigate whether this observed difference is statistically significant, an independent-sample t-test was run. As Table 21 shows, there is a statistically significant difference between the experimental and control groups (t= -17.59, p <.05). In other words, it can be implied that the experimental group gained higher scores in multiple intelligences and this is an indication of the effectiveness of the treatment employed in the experimental group in enhancing their multiple intelligences.

Table 21

Independent – Samples t-Test for twelfth Grade Students' multiple intelligences in Posttest

		Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
MIPost	Equal variances assumed	4.33	.14	-17.59	38	.00	-32.80	1.86
	Equal variances not assumed			-17.59	31.89	.00	-32.80	1.86

5. Discussion

To analyse the need for designing additional tasks related to students' multiple intelligences, the researcher employed a triangular model based on the researchers' experience, colleagues' perspectives, and a checklist for teachers. It was found that the *Vision* series did not have enough tasks to fulfil learners' needs based on multiple intelligences abilities. The tasks in the main book and workbook could not help learners use different words effectively in their productive skills, motivate them to notice and respond correctly in various situations, and understand the concepts before applying them.

Moreover, the book lacks mind maps or word puzzles to help learners understand abstract concepts. Most of the pictures are not related to the items and titles of the book.

Based on the researchers' experience, students typically dislike moving and performing tasks related to role-playing. It shows that the tasks in the book could not engage learners in using kinesthetic abilities. Moreover, there is no task for learners to solve a puzzle or find a pattern to activate their logical intelligence. While Sheldon (1988) emphasised the value of a combination of written and visual content, there is no relationship between most of the pictures in the book and the titles or the text. Therefore, students may struggle to understand information presented in pictures, which can result in a misunderstanding of the information. Due to the limitations of the tasks in the book, learners cannot find their own interests and needs, which leads to a lack of motivation for completing the tasks. Whereas Richards (2001) emphasised the variety of exercises and records that cater to different learning styles, there are not diverse tasks and audio recordings, such as narrative audios, which can support learners with diverse learning styles.

In analysing interviews, four teachers assumed that the tasks in the book and workbook could not help learners work in pairs or groups. It means that the tasks could not help learners to use their interpersonal intelligence for learning. Three of them declared that the task could not provide an opportunity for learners to create their own ideas, such as storytelling. Because they are unable to apply their linguistic and logical skills in the classroom, students may get disinterested and bored with the activities. This is in line with what Nunan (1991) assumed, that students' perception of language and learning environment is shaped by the variety of activities and information available, as well as how the resources are arranged. In fact, learners need different opportunities and choices in their learning environment to achieve a language effectively. While Cunningsworth (1995) assumed the material ought to be organized in such a way that the units and works out interface in terms of subject, circumstance, theme, design of aptitudes advancement, or movement in language structure and lexis, two of the teachers believed there is not any relationship between different parts of the book and It has various sections lack a coherent structure

In the second phase, the researchers designed tasks as supplementary materials to promote learners' multiple intelligences. The tasks were designed according to Jones

(2017) guidelines and the taxonomy of language learning activities for multiple intelligences provided by Christison (1997). In the third phase, the tasks were implemented in the experimental group. The results indicated that the designed tasks had a significant impact on students' MI and their learning. The results are consistent with most past research (e.g., Ikiz & Cakar, 2010). According to Akkuzu and Akcay (2011), teaching with multiple intelligences is more effective than traditional teaching methods, and such activities are engaging, facilitating students' interest in participating in course activities. It can also help students improve their performance.

There are tasks in the book that ask learners to play a role and tell stories about their own experiences. It can spark learners' interest and enhance their linguistic intelligence. Teachers can also monitor their learners to identify problems and address them. Using these kinds of tasks in the classroom can make the learning environment more challenging and promote learners' multiple intelligences (Santrock, 2004).

Some designed tasks ask learners to come to the front of the class and start talking about the pictures, weather, or other topics. In this way learners can develop their interpersonal abilities. Some tasks ask learners to do a puzzle to promote their logical and mathematical abilities. These kinds of task can affect learners' MI level (Abdi et al., 2013). Moreover, the results of the present study are in line with those of Widiana and Jampel (2016). They assumed that the implementation of MI-based tasks would improve several types of intelligence, such as interpersonal, intrapersonal, kinesthetic, and visual-spatial.

Furthermore, implementation of MI-based learning will also enhance students' emotional and creative thinking ability which can lead to better language achievement. In line with this study, Pasha (2008) suggests that teachers of foreign languages should recognise that all intelligences are equally important, as they facilitate learning and help develop the learners' personalities. Focusing on all intelligences makes a necessary shift from the traditional approach of teaching foreign languages, which is based mostly on verbal intelligence, to an updated approach that integrates different intelligences, which may help learners achieve better results.

Paro (2014) addresses the students' behavior in the classroom and states that students spend a long time sitting in chairs and speak very little. Most of the time, the teacher talks throughout the entire class. Students need to express their opinions, make suggestions, and ask questions. This way, the teacher will be better equipped to perceive the development of

each student and identify the unique strengths in each one. In line with this assumption, some tasks ask learners to work in pairs and ask and answer questions with their peers related to the given pictures or stories. Learners were also asked to give a mini-lecture about the given topics.

The activities and tasks were contextualized with the English classes to help learners' engagement and make the learning environment more interesting and enjoyable. According to Bearne and Reedy (2017), the objectives of the classes should align with contextual, textual, and pedagogical purposes. If the topics and activities of the class are contextualised, learners will utilise their abilities to achieve better outcomes. Moreover, Scrivener (2013) offered some ideas for activities and tools to teach grammar, such as flashcards and picture stories for more visual learners, and acting for more expressive learners, among other activities. These assumptions were considered during designing the tasks to help learners use different intelligences.

6. Conclusions

The results of the first phase of the study can be useful for educational systems to identify problems with the *Vision* series. Material developers ought to be mindful of distinctive variables influence students' learning. They should provide assignments that are appropriate for different learners with distinct intelligences**.**

The outcomes of the second phase provide valuable insights for teachers seeking to integrate theory and practice. It can be useful for carrying out action research. The designed tasks can be used as part of the *Vision* series to serve as a suitable resource for Iran's educational system. In fact, these tasks serve as a tool for teachers to create a more stimulating and engaging classroom environment, thereby promoting learners' academic performance. As learners have varying abilities and perspectives, it may not be possible to make all tasks equally interesting for everyone. Nevertheless, teachers can offer students the opportunity to choose tasks based on their intelligences.

The research emphasized the benefits of incorporating supplementary activities in the classroom. Educators and material developers must assess the needs and interests of students and provide a range of tasks to help them achieve their objectives. In fact, students attend language classes with the aim of improving their communication abilities.

Therefore, tailored tasks can help students develop their communicative skills in alignment with their multiple intelligences.

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Appendix

Examples of the designed tasks

ا- مطابق عباراتی که زیر آن خط کشی شده، سوال مناسب بسازید.

Make a question according to the underlined phrases.

a) My friend and I will drink coffee after work .

.....

b) Yes My friend and I will drink coffee after work .

.....

c) No My friend and I will drink coffee after work .

.....

d) I'm going to draw a gray dolphin .

.....

e) My sister is going to bake a cake on the weekend .

.....

f) No we won't hurt that injured animal .

.....

- جمله های زیر را بخوانید و با دانش خود کامل کنید. پاسخ ها را بصورت گروهی بررسی کنید

Complete the blanks with your own information. Check the answers in your group.

1) Tigers and lions are.....animals

2) You should pay.....to what your teacher is saying

3) Moghan.....is a nice place in Iran

4) I am very tired. Can you go shopping.....of me?

- جدول زیر را مطابق جملات داده شده کامل کنید. پاسخ ها را با دوستانتان بررسی کنید.

Complete the table according to the sentences.

1) They climbed a very.....mountain last month.
2) The animals come out at night to.....the mice.
3) There's a bus…….....just outside the hotel
4) Do they have a……...place to live aren't the endangered?

1	H			
2	H			
3	S			
4	S			

1 **Tomorrow is Minoos's birthday. Listen to her talking about what her friends will do. Match the two parts.**

a) Saba won't come to the party

b) Mahsa will bring a drawing

c) Zohre will bring her sister

d) Fatemeh will bring a teddy bear

– با توجه به تصاویر ، به سوالات داده شده پاسخ دهید. سپس با دوستانتان بررسی کنید.

Answer the questions according to the pictures. Check in pairs.

Which animal is more dangerous?

.....

Is the train faster than car?

.....

Pair up and ask your friends about the last gifts they received. You can use the words related to colors, size, material, nationality and etc. some questions are given.

What is the gift?

What color is it?

Is it big or small?

Is it Chinese?

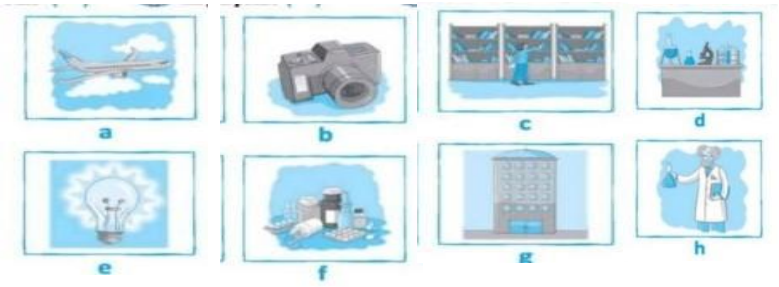
Is it beautiful?

- هر کلمه را با تصویر مربوط به ان جور کنید.

Match the pictures to their names.

1) building ( ) 2) scientist( ) 3) laboratory ( ) 4) library ( )

5) light bulb ( ) 6) airplane ( ) 7) camera ( ) 8) medicine( )



- درهرجمله مترادف کلمه مشخص شده را از داخل کادر پیداکنید وآن را جلوی جمله بنویسید. یک کلمه اضافی است

Write the given synonym for the words. One word is extra

(Usual – area – change – liked – think)

1. Coffee is a **popular** drink in the world.

……

2. It is hard to **imagine** life without water.

…..……

3. They speak in the Kurdish speaking **<u>region</u>**s of the country.

…….

4. Look at the flowers. They **<u>vary</u>** in color, size and smell.

……..

- دور گزینه صحیح خط بکشید

Circle he correct word in each sentence

1) I'm going to interview the head of our school for my school (project – sign)

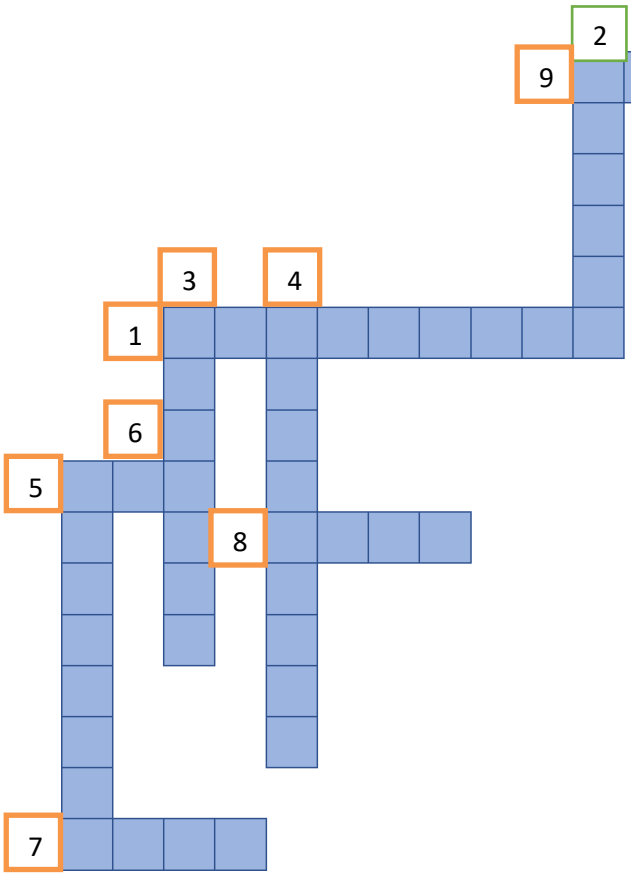
2) my brother is a successful English (foreigner – translator)

3) Sina began learning English in a language (translation – institute)

4) she knows three languages and (master – surf) all of them the same.

- پازل زیر را کامل نمایید و پاسخها را با دوستانتان بررسی نمایید

Complete the puzzle. Check the answers with your partner.



1: The best of your heart

2: New, up-to-date

3: Going out with others to have a good time

4: When a person does something most of the time and enjoys it

5: Run slowly

6: Unhealthy food

7: Fool or drink usually taken

8: Without worry

9: Think again