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The Effect of Technology-Integrated Multiple Intelligences Instruction on EFL Learners' Burn Out and Vocabulary Learning

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ABSTRACT

The purpose of this quasi-experimental study was to investigate the impact of technology-integrated multiple intelligences instruction on vocabulary learning and burnout of English language learners at a private primary school in Kerman. Over 6 months, two groups of 30 learners (15 students in two intact classrooms) were exposed to two forms of multiple intelligences instruction: the traditional and technology-integrated ones. The instruction was based on designing tasks to activate all intelligences in both groups. In the control group, participants received MI instruction from the teacher using classroom facilities with no use of technology. In the experimental group, participants received MI instruction through computer tools. Both groups received 24-week vocabulary training at a 30-minute interval at the beginning of each conversation class. Pre-tests and post-tests were used to measure learners' improvements in vocabulary development and burnout (Khani et al., 2017). To analyze the data, One-Way ANCOVA was used to answer the research questions. The results revealed that the learners involved in the technology-integrated classroom proved superior compared to the traditional group in their English vocabulary and burnout. The findings suggest that nonhuman mediators (technology) are more effective than humans, possibly due to their enticing features that enhance learners' motivation and interest.

KEYWORDS*:* Burnout; Multiple-Intelligences Instruction; Technology-Integrated Classroom; Vocabulary Learning

INTRODUCTION

In the EFL context in Iran, novice teachers frequently complain about heterogeneous classes where instruction is found to be a demanding challenge. Such heterogeneity might not be a matter of various capability levels, but rather a matter of different capability types. It seems that this so-called heterogeneity is most often misunderstood. This misunderstanding can have disastrous consequences. Thus, many students might lose motivation as the instructor fails to recognize their different abilities. In addition, students may not reach their full potential if their capabilities aren't addressed (Mahdavi Zafarghandi & Amini, 2019). The multiple intelligences teaching approach (MITA) presents a unique opportunity to enhance the learning experience based on the unique abilities and characteristics of learners (Christodoulou, 2009). Even though there have been several theoretical studies in the research literature (Akbari & Hosseini, 2008; Campbell & Plevyak, 2008; Ebrahimi et al., 2020; Steward, 2009) in support of using MI theory to enhance foreign language learning, the practical use of MITA in teaching language skills to EFL students is not well researched (Ghaznavi et al., 2021).

According to Gardner's theory, the mental capability of every human being is an assembly composed of all types of intelligence involved in its construction, but the remarkable point is that the share of each type of intelligence in each person's cognitive competence is different from others (Taaseh et al., 2014). Gardner (1999) in his theory of multiple intelligences changed the concept of intelligence from a general indivisible whole, accepted by mankind for many years as a criterion, into seven intelligences, to which he later added the eighth one. Multiple intelligences are linguistic-verbal, mathematical-logical, visual-spatial, kinetic-physical, intrapersonal, interpersonal, naturalistic, and musical. Traditional methods of teaching and curriculum are primarily designed to activate students' logical-mathematical and verbal-linguistic intelligence. Only students with high logical-mathematical and verbal-linguistic intelligences are pleased and satisfied and have acceptable educational attainment and progress. By designing activities that incorporate multiple intelligences, it is possible to help other students see their academic progress and be pleased and satisfied with educational programs.

Entering this theory into the field of education, students find more progress and integration in their academic achievement. It has given teachers freedom and opportunity to design lesson plans and tasks that are in line and suitable with each student's intelligence profile to bring them closer to their goal of enhancing the learning experience based on the unique abilities and characteristics of the learners (Motejlek & Alpay, 2021). Many educational centers and schools treat linguistic and logical-mathematical intelligence as forerunners of intelligence types and pass students under this discriminatory lens. These schools are indifferent to other intelligence types and rely heavily on repetition and rote learning (Anderson, 2022). Even though Gardner claimed that MIT can be applied through different methods, he suggested some specific means to exercise and develop our intelligences (Lotfi-Khajouei et al., 2022). Multiple Intelligences theory has brought engagement and motivation into educational environments by giving assurance to individuals that you can do things in the most effective way; the only difference is that you do it in your way and style.

When researchers refer to language learning, most often they mean four skills: listening, speaking, reading, and writing (Cerezo, et. al., 2019). Vocabulary has a more prominent and determinant role in language learning since when the vocabulary container is empty, there will be nothing to pour into the sentence structures and form the sentences (Agca & Ozdemir, 2013; Cakmak, 2019). The impact and necessity of vocabulary mastery have also been felt in EFL learning, which means the ability in selecting and using appropriate words (Nation, 2013; Suhardiana, 2021). Computer-Assisted Language Learning (CALL) systems are the best providers of enjoyment and interest in vocabulary learning that children craved. Previous studies' results vigorously have approved that technology can increase learners' motivation and moderate the problem of apathetic and withdrawn children from language learning (Alkhalifah et al., 2012; Finnsson, 2015). A classroom designed according to the Multiple Intelligences (MI) framework supports the approach of choice by allowing children to experience repetition when deemed appropriate. They are given the freedom to practice skills until they are satisfied with the mastery of them. They are given choices and can work at their speed. When the MI Theory is used correctly, children thrive, become confident, explore, feel safe to try new things, and believe in themselves (Hoerr et al., 2010).

Moreover, several studies have indicated that school burnout among Iranian students has a negative impact on their academic engagement and achievement (Farina et al., 2020; Mohebbi et al., 2019). Additionally, it can lead to psychological disorders such as anxiety, depression, frustration, hostility, and fear in students. The consequences of school burnout can be serious and noticeable in both the short and long term. There is a link between burnout and poor school quality (Fiorilli et al., 2017; Räsänen et al., 2015; Roohani et al., 2016; Salmela-Aro & Upadyaya, 2014). There can be an association between academic burnout and debilitating conditions like pessimism, anxiety, and low self-efficacy (Iremeka et al., 2021). During learning a new language, Iranian students usually face challenges that make the learning environment increasingly stressful for them. If stressors, including academic and non-academic ones, are not dealt with, students may be prone to burnout, which may influence their entire life negatively (Roohani et al., 2016). Burnout has been studied among Iranian English language teachers (Akbari & Eghtesadi Roudi, 2020; Davaribina, Ghobadi Asl & Jabbarpoor, 2016; Nazari et al., 2017; Sadeghi &

Khezrlou, 2016) but students' burn out in the English language classroom has not been the focus of researchers in this field.

In a blended EFL context, the applicability and effectiveness of MIT is a very enticing topic that deserves further exploration. The present study investigated the intelligences associated with vocabulary development in an EFL context in a bid to expand the body of research on technology-integrated multiple intelligences instruction in tandem with this line of research endeavors and in recognition of the fact that intelligences applied to L2 improvement are largely unexplored territory. Language methodology is shifted in this study from the products of language learning to the processes through which it is learned. As a result of such a shift, MIT has the capacity to improve the competency and efficacy of students regardless of their ability and encourage independent, self-directed, and active uptake of knowledge in the skills laboratory, classroom, and beyond. It is claimed that MIT can help learners to engage with learning by engaging their differing intellectual strengths, abilities, or dispositions (Denny, 2007; Weber, 2005).

To motivate children to learn vocabulary, teachers can implement a variety of interactive ways through which to aid them in their learning. Play, fun, and excitement are the keys to entering a child's mind. In the current study, these magical elements are mixed with MIBI in language learning materials to attract and fascinate children in carrying out the task of language learning. This study provides children with creativity, energy, and a lively environment that prevents them from becoming bored during the learning process. By entering the digital world, educational issues can be handled with greater efficiency and more productive results can be expected. Through technology-enhanced education, learning has become an attractive and exciting task for children. In the digital world, education transforms from a monotonous and traditional state to an attractive and challenging one (Aeschlimann et.al., 2020; Goodall et al., 2013). There are different approved pieces of evidence by researchers that the internet and the digital world present educational benefits for children (Best et al., 2014; Morris, & Rohs, 2021; Stoilova et al., 2021). Accordingly, the present study was guided by the following research questions:

1. Is technology-integrated MI instruction statistically effective in enhancing learners' L2 vocabulary learning?
2. Is technology-integrated MI instruction statistically effective in decreasing learners' burnout?

LITERATURE REVIEW

Gardner's theory, which suggests several distinct forms of intelligence (logical-mathematical intelligence, visual-spatial intelligence, verbal-linguistic intelligence, musical-rhythmic intelligence, bodily-kinesthetic intelligence, interpersonal intelligence, intrapersonal intelligence, and naturalist intelligence) as one of the popular theories of intelligence, has led to a mode of instruction, that is, MI-inspired instruction, for which many studies had been demonstrated its good impact on education and superiority over traditional teaching, particularly in terms of student accomplishment (Hanafin, 2014; Winarti, 2019 ; Yalmanci & Gozum, 2013).

Simoncini et al. (2018) stated that teaching with multiple intelligences stressed the provision of a democratic, respectful, and multiple learning environment for each student being able to present the ability, self-affirm personal performance, and further induce strong learning interests to surpass the originally dominant intelligence field in learning outcome. Inan and Erkus (2017) indicated that using multiple intelligences for curriculum design could provide various intellectual learning activities and create an environment with which students were comfortable. Learning was the preparation for the challenge; learners would develop by accepting challenges exceeding the current abilities. Encouraging students deeply and meaningfully to engage in the learned topics was the solid and durable learning basis for learning new affairs. The application of multiple intelligences and the creation of diverse classrooms to develop students' specialties allowed students to maintain learning motivation with active participation, building self-confidence, and developing self-motivation. Minnier et al. (2019) mentioned that the application of multiple intelligences to teaching was different from traditional teaching;

teaching with multiple intelligences adopted multiple instructional strategies and activities. Many studies indicated that the application of multiple intelligences to teaching enhanced students' learning motivation and interests.

Setiawan et al. (2020) reported that teachers can maximize the potential of early childhood intelligences simultaneously through technology-integrated learning that is useful and fun. A similar study investigated the use of electronic storybooks (ES) to further develop MI in early education students. The researchers selected 74 students in fourth and fifth grade, who had not had any previous experience with electronics in school, to participate in their study (Rinis & Vlachos, 2013). Their findings showed the implementation of technology developed the artistic/visual, intrapersonal, interpersonal, and kinesthetic intelligences in learners (Rinis & Vlachos, 2013). Computer-assisted language learning (CALL) has changed the turbulent process of learning vocabulary to a job full of excitement and interest making learning easier, faster, and more influential (Li & Hafner, 2021). No paper book can provide the learner with multimedia in texts accompanied with high-quality images, sounds, and videos in fluid content format with high speed and convenience. And it cannot be denied how much learners are comfortable with the computer in moving the pages, going back and forth for checking the vocabulary, finding the definitions, changing the images, and increasing or decreasing the sound, all of which are provided with the least cost and hassle by the computer. In other words, learners find their answers by pushing some buttons in a few seconds (Kayaoglu & Dag Akbas, 2011). When learners can simultaneously use the reading context and the words' definitions on the computer screen, it switches their attention between the two, which reduces their cognitive load (Sharma & Raj,2021).

According to the results of several studies on the use of multimedia in vocabulary learning, it has been reported that multimedia can provide learners with a combination of several modalities such as textual, visual, and auditory in different formats like video, image, and text, which certainly creates a special and unique advantage for learning (Nation, 2013). Many carried out studies regarding multimedia strongly advise its involvement in second language vocabulary acquirement and give assurance about its usability to language practitioners (e.g., Barrot, 2015). Providing learners with entrenched input by audio-visual flashcards, videos, animations, and three-dimensional virtual worlds(3DVWs) can answer each learner's language learning preference and keep them motivated and satisfied (Cheong et. al, 2021).

One of the supportive theories for this claim "the positive impact of multimedia input on vocabulary acquisition " is Dual Coding Theory (DCT) by Paivio (1991). This theory (DCT) is a general cognition theory that mainly deals with learning and language learning issues. This theory holds that mental imagery influences learners' mind and memory. According to this theory, learners will be able to develop a deep understanding of new materials using verbal associations or visual imagery but the combination of both is more successful in learning (Wong& Samudra,2019). Verbal and nonverbal mental representations as two hands in hand mutual complementary systems present better retention and recall for learners compared to coding the learning materials in a single system of verbal or nonverbal mental representations. Such mutual coordination of verbal and nonverbal mental systems will facilitate and meliorate the learning process for learners who stay back on the learning road and push them forward (Kirschner et al., 2018).

METHOD

PARTICIPANTS

At a private school in Kerman, Iran, a course on English conversation for EFL learners with a focus on vocabulary and grammar development was administered during the academic year 2021-2022. The research participants were 30 primary-school Iranian female students who were assigned to two groups with the same level of English language proficiency. Due to the researcher's extensive experience teaching female learners, and the lack of experience teaching male English language learners, all participants were female. They all mentioned that they had studied English for an average of 1 year at different registered English language institutes. The Oxford young learners' placement test was used to assess their language abilities so that they were almost homogeneous

(elementary level). They were all 9 years old and in the third year of their primary education. It is essential to note that they had sufficient technology literacy and knew how to use it. The researcher conducted an interview with each participant before starting treatment to determine their level of technology knowledge. All participants had almost the same level of technology knowledge. Despite being different in terms of social and economic distance, all families had a computer system with a broadband internet connection. The class met two days per week for 90 minutes over six months (48 sessions). Ethical approval for this study was obtained from school administrators. Pseudonyms were used to ensure confidentiality and anonymity. And data was not shared with anyone, including university administrators.

MATERIALS AND INSTRUMENTS

Oxford young learners' placement test was used to identify the homogenous language learners (elementary level). The test contains 60 questions. 33 questions are related to grammar and vocabulary, and 27 questions evaluate the learners' level of listening comprehension. It tests young learners aged 7-12 years. The vocabulary test was the second instrument employed in the current study. Participants' vocabulary development was measured using two vocabulary tasks: a receptive and a productive vocabulary task. In the intervention period, participants were asked to complete vocabulary tasks to measure their knowledge of the subjects and topics presented to them. From each of the eight subject matters, six words from three syntactic categories of nouns, verbs, and adjectives were chosen for a total of 48 words. These selected words were then assessed in a productive and receptive vocabulary task in which the same words were included. In the productive task, children were shown a picture of the target word. At the same time, they were supposed to fill in the blanks in sentences in which the target word was omitted. One point was given for each correct answer; thus, in this regard, a maximum of 48 points was assigned to the whole task. The receptive task, on the other hand, provided learners with one target word orally at a time. Out of all four pictures available, the children were then supposed to choose the one that best matched the target word. The mentioned scoring procedure was also applied for this task; one point was given to each correctly selected item; thus, in this regard, a maximum of 48 points was assigned to the whole task. The tests are designed by Oxford University Press based on the Family and Friends series. They are available for teachers' assessment purposes as tests of each unit's progress or the overall achievement of students. Test-retest reliability over a period of 2 weeks revealed correlations of .85 and .88, indicating excellent stability.

The school students' burnout questionnaire was used to evaluate school burnout in 1st–12th-grade students (Khani et al., 2017). It comprises 17 items, which the student is asked to rate on a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree). The questionnaire assesses students' school burnout across four different dimensions: pessimism toward the school, Burnout from school assignments, feeling of inadequacy in school, and Burnout from problems. Each student was assigned a total score and a sub-score for each of the four dimensions. The construct validity of the scale was confirmed by Khani et al. (2017)'s report. Cronbach's alpha test was carried out to indicate the translated scale's level of reliability, which was .89 for the burnout questionnaire in the current study. The researchers read the questions and answers in simple language to ensure that the children understood the questions.

The instruments were examined by three experts (two in English language teaching, and one in research studies) to evaluate their redundancy, face validity, content validity, and language clarity. Pilot testing was also done with a population of 8 learners to increase the validity and reliability of the items. Feedback indicated that the scales were valid.

PROCEDURE

The learners were enrolled in a semester course in English conversation for EFL learners. The main objective of the course was the improvement of the student's proficiency in aural-oral skills with a focus on vocabulary and grammar development. The Oxford University Press textbook, Family and Friends (3) written by Thompson and Simmons (2009), was used to instruct control and experimental group members. Five new words were introduced

in each session on the topics of my family, countries, seasons, my things, hobbies, etc. The teacher introduced technology-integrated classroom mode during the first week. In the Experimental Group, students could use the capabilities of the computer to determine the meaning of the words presented from the full vocabulary list. Both groups received 24-week (48 sessions) vocabulary training at a 30-minute interval at the beginning of each conversation class but in different ways. Treatment lasted six months.

The following activities were used for teaching the word rabbit in both groups:

1. Verbal-Linguistic Intelligence (Word Smart): Completing crossword puzzles and playing games with sentences containing the word rabbit; Writing sentences with the word rabbit.
2. Logical-Mathematical Intelligence (Math Smart): Searching for the word pattern inside and outside the classroom; Designing word codes.
3. Spatial Intelligence (Picture Smart): Using clay or play dough to make a rabbit.
4. Musical Intelligence (Music Smart): Setting a poem containing the word rabbit to music and then performing it for the class; Using rhythm to memorize sentences with “rabbits”.
5. Bodily-Kinesthetic Intelligence (Body Smart): Playing games with body movements and acting out rabbit characters in story books.
6. Interpersonal Intelligence (People Smart): Working in pairs or cooperative groups to design and complete rabbit-related projects; Tutoring other students or classmates working with rabbits.
7. Intrapersonal Intelligence (Self Smart): Writing reflective papers on rabbit topics; working alone on the word rabbit.
8. Naturalistic Intelligence (Nature Smart): Sorting and classifying natural objects, such as leaves and rocks presenting rabbit shapes; Researching and observing rabbits’ habitats and natural surroundings.

In the Experimental Group, the computer screen displayed new words. Clicking on the words enabled learners to see animations, word charts, 3-D images, and electronic flashcards explaining the meaning of the words. The computer then read an animated story to the class using the new words as well as some of the words they had already learned. A variety of digital games could also be played with new and old vocabulary. They could then use these words along with any of the words they had learned in previous sessions to make stories and drawings. In addition, there were some digital tests to check the learners' comprehension and production. In the Control Group, the teacher wrote the new words on the board first. In each session, five new words were introduced. Following the presentation on the board, the teacher helped the students understand the words by teaching them through paper flashcards, examples, role plays, and real objects. After that, the teacher read a story to the class using some of the new words as well as some words they already knew. As part of the lesson, the teacher also played some games (such as puzzles) with the class that involved both new and old vocabulary. They were then asked to create stories and role-plays with all the new words and any words they had learned in previous sessions. The teacher also used multiple-choice, gap-filling, matching, cloze, and open-ended questions to check learners' comprehension and production in some sessions. Students at the final stage completed a post-test to evaluate their post-test knowledge using a vocabulary test. Moreover, both groups completed a burnout questionnaire.

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RESULTS

Table 1
Normality of Research Variables' Distribution

Group	Variable	Time	Shapiro-Wilk Statistic	df	P-Value
Control Group	Vocabulary	Pretest	0.920	15	0.195
		Posttest	0.901	15	0.117
	Burn Out	Pretest	0.885	15	0.083
		Posttest	0.886	15	0.071
Experimental Group	Vocabulary	Pretest	0.909	15	0.153
		Posttest	0.975	15	0.946
	Burn Out	Pretest	0.950	15	0.517
		Posttest	0.984	15	0.994

To examine the research hypotheses, the normality of the distribution of research variables was first examined. One way to do this is to test the Shapiro-Wilk test. The significance level was higher than 0.05 for all variables (Table 1). Therefore, the distribution of variables in this study was normal and parametric tests were used to answer the research questions.

Table 2
Test of Homogeneity of Variances (Vocabulary)

F	df1	df2	P-Value
0.88	1	28	0.36

Table 3
Test of homogeneity of regression slopes (Vocabulary)

Source	Sum of Squares	df	Mean Square	F	P-Value
Group	0.327	1	0.327	0.498	0.487
Pretest	0.165	1	0.165	0.251	0.620
Pretest× Group	0.016	1	0.016	0.024	0.879
Error	17.068	26	0.656		

Is technology integrated MI instruction statistically effective in enhancing learners' L2 vocabulary learning?

To answer this research question and examine the related null hypothesis, Technology integrated MI instruction is not statistically effective in enhancing learners' English vocabulary learning, Levene's test and normality checks were performed, and the assumptions were met. Homogeneity of variance, the linear relationship between the dependent variable and covariate, and the homogeneity of regression slopes were met, too (Tables 2 & 3). Therefore, the ANCOVA test was run for the Vocabulary variable.

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Table 4
The Result of Covariance Analysis (Vocabulary)

Source	Sum of Squares	df	Mean Square	F	P-Value	partial η^2
Pretest	0.183	1	0.183	0.290	0.00	
Group	210.679	1	21.679	332.972	0.00	0.93
Error	17.083	27	0.633	-	-	
Corrected Total	235.967	29	-	-	-	

According to Table 4, there is a significant difference between the mean scores of the Experimental Group and the Control Group regarding the Vocabulary post-test. Therefore, the Implementing technology integrated MI Instruction had a significant effect on improving the participants' Vocabulary ($p<0.01$). The estimated partial Eta Squared is (partial η^2 =0.93) which shows a large effect. Therefore, the first null hypothesis is rejected.

Table 5
Estimated Marginal Means (Vocabulary)

Group	Estimated Marginal Mean	Std. Error
Control G	13.85	0.21
Experimental G	19.22	0.21

According to the estimated marginal means, the Technology Integrated group performed better in Vocabulary compared to the Control Group (Table 5).

Table 6
Test of Homogeneity of Variances (Burnout)

F	df1	df2	P-Value
1.69	1	28	0.21

Table7
Test of homogeneity of regression slopes (Burnout)

Source	Sum of Squares	df	Mean Square	F	P-Value
Group	0.823	1	0.823	0.291	0.594
Pretest	13.253	1	13.253	4.694	0.040
Pretest× Group	9.638	1	9.638	3.413	0.080
Error	73.413	26	2.824		

Is technology integrated MI instruction statistically effective in decreasing learners' burnout?
To answer this research question and examine the related null hypothesis, Technology integrated MI instruction is not statistically effective in decreasing learners' burnout, Levene's test and normality checks were performed, and the assumptions were met. Homogeneity of variance, the linear relationship between the dependent variable and covariate, and homogeneity of regression slopes were met (Tables 6 & 7). Therefore, the ANCOVA test was run for the Burnout variable.

Table 8
The Result of Covariance Analysis (Burnout)

Source	Sum of Squares	df	Mean Square	F	P-Value	partial η^2
Pretest	84.283	1	84.283	27.401	0.00	
Group	537.907	1	537.907	174.876	0.00	0.87
Error	83.050	27	3.076	-	-	
Corrected Total	713.467	29	-	-	-	

According to Table 8, there is a significant difference between the mean scores of the Experimental Group and the Control Group regarding the Burnout post-test. Therefore, the Implementing technology integrated MI Instruction had a significant effect on decreasing the participants' Burnout ($p<0.01$). The estimated partial Eta Squared is (partial η^2 =0.87) which shows a large effect. Therefore, the null hypothesis is rejected.

Table 9
Estimated Marginal Means (Burnout)

Group	Estimated Marginal Mean	Std. Error
Control G	26.37	0.45
Experimental G	17.90	0.45

According to the estimated marginal means, the Experimental Group performed better in Burnout compared to the Control Group (Table 9).

DISCUSSION

Using an experimental research study with two groups of English language learners, the results showed that technology-integrated MI instruction did cause some significant changes in vocabulary learning and burnout for the experimental group. The statistical analysis answered the research questions as follows:

Regarding the first research question, is technology-integrated MI instruction statistically effective in enhancing learners' L2 vocabulary learning? The statistical analysis revealed that the EG group outperformed the

CG group in enhancing their English vocabulary. Therefore, technology-integrated MI instruction had a significant impact on English language learners' vocabulary. Moreover, there was no difference between the mean scores of CG's and EG's vocabulary before treatment. However, a significant difference was observed between CG's and EG's vocabulary after treatment. Accordingly, the first null hypothesis (Technology integrated MI instruction is not statistically effective in enhancing learners' English vocabulary learning) is rejected. The findings are in line with Setiawan et al. (2020) and Rinis and Vlachos (2013) who reported that teachers can maximize the potential of early childhood intelligences simultaneously through technology-integrated learning that is useful and fun. Thus, with the application of technology in language classes, student's motivation to learn is believed to improve. Educational software's most significant functionality is not teaching efficiency but arousing students' interest and thus enhancing their learning experience; it is the learning process that offers the greatest contribution, not the teaching activity. It can be concluded that these kinds of technologies help students feel more responsible and self-regulated. This could be a contribution to teachers who have been trying to make students more responsible and self-regulated since the constructivist approach to learning emerged. Technology use can enhance the educational process as an educational assistant (Ghuloum, 2010), as a teaching prompt (Walker, 2012), or simply as a general aid (Leuski et al., 2006).

Results of the current study confirm the use of multimedia in vocabulary learning which can provide learners with a combination of several modalities such as textual, visual, and auditory in different formats like video, image, and text, which certainly creates a special and unique advantage for learning (Nation, 2013). Moreover, many carried out studies regarding multimedia strongly advise its involvement in second language vocabulary acquirement and give assurance about its usability to language practitioners (e.g., Barrot, 2015). Providing learners with entrenched input through audio-visual flashcards, videos, animations, and three-dimensional virtual worlds(3DVWs) can answer each learner's language learning preference and keep them motivated and satisfied (Cheong et. al, 2021).

The results of the present study were in line with prior findings on the superior effects of the digital condition compared to the traditional condition lacking technology (Alkhalifah et al., 2012; Finnsson, 2015; Garcia-Ruiz et al., 2008; Junn, 2022). However, the findings contradict those of Hitosugi et al. (2014), which concluded that digital environments were not preferred to explicit instruction for helping students learn vocabulary. The difference may be explained by the explicit placement of target words and reinforcement tasks in the study mentioned. In addition, Pawlak et al.'s (2022) survey of Iranian students and teachers revealed that learners consider online classes more boring than offline classes. They reported having limited strategies to cope with boredom in online learning, with some simply resorting to debilitating strategies such as skipping classes. Yazdanmehr et al.'s (2021) study revealed changing levels of boredom across the semester, with the peak occurring in the initial stage.

Regarding the second research question, is technology-integrated MI instruction statistically effective in decreasing learners' burnout? The statistical analysis revealed that the EG group outperformed the CG group in decreasing their burnout. Therefore, technology-integrated MI instruction had a significant impact on English language learners' burnout. Moreover, there was no difference between the mean scores of CG's and EG's burnout before treatment. However, a significant difference was observed between CG's and EG's burnout after treatment. Accordingly, the second null hypothesis (Technology-integrated MIBI is not statistically effective in decreasing learners' burnout) is rejected.

The findings related to the decrease in learners' burnout in the technology-integrated classroom can be explained by the change in classroom climate (Salmela-Aro et al., 2008). A negative school climate is positively associated with school burnout, whereas the support and motivation offered by technology can protect students from burnout. In line with the current study findings, Fiorilli et al. (2017) reported that classroom engagement (prompted by technology in this study) can play a positive role in mediating the effects of burnout. Considering the theory and the positive findings obtained, it is thus proposed that technology can play the role of an efficient vocabulary-learning mediator for young learners. As proposed by Gao (2019), regarding language teacher agency,

language teachers should explore ways to create and sustain the contextual conditions that are conducive to changes in their learning and professional practice. The application of modern technology to support teaching may bring about the desired change.

CONCLUSION

The present study supports the use of MIBI, as a means of drawing upon learners' strengths and abilities so that they can achieve maximum personal and social success. In effect, if learners are provided with appropriate programs, the better their chances of fully realizing their potential will be (Tavakolizadeh et al., 2019). Study findings suggest that when educators are aware of students' multiple intelligences, they can help them reach their maximum potential by adapting to contextual challenges. MIBI, as a method of teaching and learning, offers an innovative approach to teaching life skills. If teachers try to activate all intelligences through the pedagogical tasks they apply in their classrooms, they can stimulate the growth of all types of intelligences in their students. It helps students know themselves and their potential traits better and, therefore, use most of their abilities and opportunities. Accordingly, the need to study the relationships between these abilities continues. Children do not get the satisfaction of making progress until they have opportunities to find and develop their potential and these high levels of development are inseparably linked to multiple intelligence-based instruction.

Gardner's theory of multiple intelligences is significant in that it gives teachers a framework in which to identify the appropriate uses of industrial technologies for instruction. This is because teachers may have always instinctively included opportunities for building and creating in the classroom. However, they may now incorporate these activities with increased confidence that they are accommodating all kinds of learners. The integration of industrial technologies into the classroom needs no longer be a hit-or-miss proposition. By utilizing this intervention, teachers and students will identify their intelligence type, their strengths, and weaknesses. Their attitudes and basic skills will be boosted by using materials and resources that suit and adapt to their intelligence type, especially for children attending schools with limited resources. Instead of using the learner’s age or year as the trigger for what he or she should be taught next, technology-based adaptive learning designs a course of instruction based on the child’s actual abilities – as monitored by a digital interface. This enables students to follow their path through a subject based on their current level of understanding and at a pace that feels comfortable and manageable. It can be concluded that integrating technology and multiple intelligences into English classroom instruction not only individualizes the education and provides multiple entry points to curriculum content, but also empowers students to be their instructors and encourages teachers to be techno-constructivists, which would transform the current educational practice in Iran.

Technology can provide teachers with the tools they need to redefine how and what they teach. There is no longer a one-size-fits-all solution to providing instruction. This time of significant growth can also be a time of high peril. Technology advances so quickly that it's very easy to be impressed by new advancements. Even to the point of letting technology take precedence over instruction. As educators, teachers have a responsibility to make sure that the use of technology is well grounded in sound educational theory and practice; instructional considerations must always come first. Without a sound educational foundation, instructional technology will not fulfill its promise. As a result, it will fall by the wayside like other innovations that have preceded it. In this regard we have come full circle: technology supports the accommodation of multiple intelligences in the classroom. While at the same time, MI theory offers a strong theoretical foundation for the integration of technology into education. Students can benefit from learning about their types of intelligences by understanding themselves better and making the most of their learning experiences. Multiple intelligences instruction empowers learners to be more successful. Knowing one’s distinctive pattern of intelligences empowers a student to transform a complex learning situation into an opportunity. As a result, students can alter their learning approach to maximize their study habits and absorb information in the classroom (Green & Tanner, 2005).

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