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The Interference of Arabic Prepositions in Emirati English

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Abstract: The bond between England and the UAE date back to over 220 years ago. This article explored the interference of Arabic prepositions in the English used in the United Arab Emirates (UAE), and their occurrences in light of gender and level of education, two important social variables related to linguistic behavior. To do so, participants translated 20 sentences in Arabic into English as well as filled in 30 gaps in sentences in English with the missing prepositions. We also experimented how musical intelligence improved the Emiratis' performance regarding prepositions. An experiment was carried out to verify if participants from the experimental group, who received training on prepositions through music, obtained better results compared to the control group, who received training through a more traditional way (by listening to the instructor and repeating).

Keywords: multiple intelligences; musical intelligence; grammar; prepositions; contrastive; comparative; linguistics; L2 acquisition; training; Emirati English; Arabic dialects; autism; savant syndrome

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1. Introduction

This study aims to analyze the utilization of the Theory of Multiple Intelligences (MI) as an instrument to enhance learning. MI was presented by the American developmental psychologist and research professor Howard Gardner in 1983 in his notable book Frames of Mind [1], in which he claims that individuals possess eight intelligences (bodily-kinesthetic, musical, linguistic, logical-mathematical, spatial, interpersonal, intrapersonal, and naturalist [2]) and not only one as most psychologists prior to his theory advocated. The focus of this paper will be on musical intelligence.

Musical intelligence is the capacity to perceive the meter, tone, and melody. This intelligence enables us to perceive, create, reproduce, appreciate music patterns, and identify differences between musical pitches, among other abilities. Composers, pianists, instrument makers, musicians in general, vocalists, and sensitive listeners [1] are examples of musically intelligent people.

This study uses musical intelligence to improve Emirati participants' use of prepositions in English. According to Campbell, L., Campbell, D. and Dickinson, D. [3], there are two main ways to implement musical intelligence in the classrooms: The multimodal and the arts-based models. The multimodal model is more pragmatic and uses the multiple intelligences as entry points (i.e., the utilization of learners' strengths—one of the eight Multiple Intelligences—to learn and understand academic content. In the case of our study we will use musical intelligence as an entry point to understand and improve prepositions) into disciplinary content. Our study makes use of the multimodal model, not because we believe this is the best and most important aspect of musical intelligence, but because we are not policy makers, therefore we cannot implement music classes in schools, which leads us to the other model of schools, the arts-based one, in which Multiple Intelligences are dealt as sound reasons for learning in and through the arts, as legitimate disciplines. The fact that the study was carried out in the United Arab Emirates (UAE) also contributes to this multimodal model as this country has only recently been adapting to new methodologies and international schools; moreover, 20 years ago, over 90% of schools

in the UAE were koranic-based and there were no institutes with music class or music schools available in the country [4].

Research on individuals whose brains have been damaged as a result of a stroke or other sorts of trauma confirm the distinctiveness of musical perception. Some aphasic individuals (a condition in which a person partially or totally loses the ability to communicate or understand language, due to a brain damage) have additionally displayed lessened musical ability while others can suffer significant aphasia and keep intact musical competences, even as one can become musically impaired while still retaining one's principal linguistic abilities. This is because linguistic competences are concentrated in the left hemisphere while musical capacities are located in the right hemisphere. Disease in the right hemisphere may compromise music appreciation. Amusia, for instance, prevents individuals from perceiving or reproducing musical sounds [1,5,6]. Because of these evidences, we believe that activating one more portion of the brain to learn, in the case of this study the right temporal lobe in which musical intelligence is located, will provide better results than just learning using linguistic intelligence (repetition, reading, and listening to the prepositions), which activates the left hemisphere, more precisely, the left temporal and frontal lobes. Each intelligence is located in a different part of the brain, so the more intelligences we involve in one activity the more parts of the brain will be activated [1]

Unlike language syndromes, musical syndromes are not uniform, and a great variety can be found even inside the same population. Musical breakdown is not systematically connected with other faculties, such as linguistic, numerical, or spatial processing; music seems unique in this respect, just like natural language [1]. Perhaps once musical competence has been more accurately analyzed, we may find that it is even more lateralized and localized than human language.

Astonishing musical and acoustical feats performed by autistic youngsters have been reported in the literature. The most outstanding musical savant may be Eddie Bonafe, who was the focus of many articles as well as a whole book [7–12]. Eddie was born in 1980. By the age of ten, he had begun to display the ability to play works at the level of famous composers like Mozart, a good long-term musical memory, and an outstand ability to play music after hearing it just once or twice [7].

This study will carry out an experiment regarding MI. Twenty Emirati participants in the experimental group will be trained through music in the domain of prepositions—to examine whether there is a significant improvement in this domain compared to the control group (a group of 20 Emirati participants, who will be trained in a more traditional way: by reading and repeating out loud). The experimental group will be trained with the aid of music, as they will practice the prepositions by singing a song dealing mostly with three problematic prepositions for Emiratis: *on*, *at*, and *by*.

It is essential to be aware of the social and linguistic characteristics in the UAE to understand the interinfluence of English and Arabic in the region. Dubai and Abu Dhabi suffered a massive immigration after oil was found in the region in the late 1950s. Currently, more than 89 percent of the population in the UAE is foreign-born [13–16]. There was an obvious need for international schools, and as a consequence English began being used in most services and public places, such as bars, shopping malls, taxis, gas stations, restaurants, cinemas, and grocery stores.

The Dialect is the first language (L1) [17] in the Arab world, more precisely regarding this study, the Emirati Dialect is the L1 in the UAE. The UAE government has invested significantly in the education system in order to keep up with the globalization, changing from instruction in Modern Standard Arabic (MSA)—which is the Arabs' second language (L2) [16,17]—to a bilingual curriculum where Arabic and English are equally important [18]. Since the 1990s, English lessons begin in the first year of primary in public schools [19].

This study seeks to find out the influence of Arabic on Emirati English throughout the two centuries of British presence in the region, as well to discuss the effectiveness of teaching content through music. To do so, the following research questions were discussed:

1. Are there influences of MSA (L2) and Emirati Dialect (L1) in the acquisitions of prepositions in English?
2. Is there a meaningful difference in the result among the participants of the control group, who learn through music and the control group, whose participants learn through a traditional method (reading and repetition of the content)?
3. Are there differences in the results obtained by the participants regarding their educational background and gender?
4. Are the results similar to the ones obtained in our previous study [20], in which the content taught through dance (experimental groups 1 and 2, composed of ballet and flamenco dancers respectively) obtained a statistically meaningful difference compared to the control group (group of participants trained in a traditional way, by reading and repeating the content)?

2. Historical Overview

The following historical analysis is intended to explain the three periods of linguistic change in the UAE. According to Schneider's [21] 'dynamic model' of postcolonial English, three significant phases of language change can be identified in the UAE. Initially, the 'foundation phase' (1809–1966), when English was introduced; a second period of 'exonormative stabilization' (1966–2004); and the period of 'normalization' (2004 till the present moment). This theoretical framework looks into the structure of the Modern Standard Arabic and Emirati Dialect and their influence on Emirati English.

2.1. The Foundation Period: The Introduction of English (1809–1966)

The bond between the UAE and Britain date back over 220 years. British Indian shipping was threatened by Arabs of the lower Gulf. The British Governments of Bombay and India considered the maritime toll-levying and raiding as coercion and piracy. The Qasimi, the ruling family of Sharjah, Ras al-Khaimah (nowadays these are two of the Emirates that constitute the UAE), and Lingah were believed to be behind these raids [22]. In 1809 and 1819, the British sent expeditions to several Qasimi ports; this can be considered the first linguistic phase [21], the 'foundation phase' when locals had the first contacts with English. In 1820, the British imposed the General Treaty, which were agreements with individual Emirates resulting in an area known as "The Trucial States" (nowadays the UAE). Britain accepted the role of protector and the rulers honored their duties and commitments as protégés. Two further treaties in 1888 and in 1892 devolved external relations to the British in return for protectorate status.

In the early 1930s, the first oil company teams carried out geological surveys in the UAE, after they had discovered oil in Iran (1908) and Bahrain (1932). Such discoveries contributed to Britain's decision to continue in the Gulf. All the oil companies established in the Trucial States were British-owned. They also made the use of aircraft to connect Britain to the Gulf, as well as to protect the latter. The RAF (Royal Air Force) and Imperial Airways, now British Airways, had their bases in Sharjah (UAE). In 1941, the British post agency opened its first agency in Dubai. From 1948 on, all mail posted from the Trucial States used British stamps portraying the British monarch. Rules and British officials were heavily criticized by anti-colonialists around the world, including the UN General Assembly. To avoid that, the British government granted more freedom to the rulers. The rulers, however, feared the vulnerability that independence would bring.

2.2. The Exonormative Stabilization: English as the Language of Administration and Education (1966–2004)

In 1966, Shaikh Zayed Bin Sultan Al Nahyan assumed authority in Abu Dhabi and started ruling the Trucial States. As the Gulf cities grew, all the facilities, bridges and buildings were designed by British architects and engineers. The British Council was in charge of developing secondary education in most Gulf shaikhdoms and granted university scholarships for hundreds of Gulf students to study in Britain.

In 1966, the British decided not to be involved in the Trucial States anymore, which led the rulers of six Emirates (Abu Dhabi, Dubai, Sharjah, Umm al-Quwain, Fujairah, and Ajman) to establish a Federation. They signed an agreement, and on 2 December 1971 the United Arab Emirates was formally established. The British political agent in the Emirates was promoted to ambassador. Hundreds of British nationals stayed in the Emirates as officers and civil servants, administrating the police, airports, hospitals, and newly-formed militaries. Many remain there today. In 1988, there were 172 British loan service officers employed by the UAE Government [22] (p. 24). According to Boyle [23] (p. 319), at the time of independence, the British community comprised a few thousand and nowadays are about one hundred thousand. English became the lingua franca of the country: it was present in the oil and gas industry, aviation, shipping, and commerce; it also was the language of the South Asian migrant worker, who comprised a large section of the community. English was regarded as the language of new era for the autochthonous community [24]. The sharp rise in the number of foreigners made that the Emiratis themselves became a linguistic and ethnic minority in their own country. Prior to the invasion of Kuwait in 1990, the non-gulf Arab population, which provided the professional workforce in fields such as education, engineering, and medicine throughout the Gulf, fell from 72% in 1975 to 29% in 2002 [25]. From 1990, these non-Gulf Arabs were replaced by professionals from Pakistan, India, and Bangladesh, who eventually comprised 50% of the Gulf workforce [25], increasing the number of English speakers in the UAE. Over one century of treaties with England has left traces in the Emirati Dialect. All the new technology and objects that were introduced by the Englishmen were unknown by the Emiratis, so they adopted many words from English, such as lift, light, glass, cycle (for bicycle), class, finish (meaning to quit the job or to be dismissed from work), and many others.

2.3. The Nativization Period (2004 Until Present)

'Nativization' is Schneider's [21] contemporary period according to his 'dynamic model' relevant to the UAE. This period is ongoing and, therefore, not yet well defined. As per Boyle [23], this third period of Schneider's 'dynamic model' started in 2004 when the Abu Dhabi government launched a diversity of economic plans: high-technology and heavy industry, nuclear power plants, and expansion of luxury and cultural tourism. Such projects activated a speedy increase in the number of immigrants from 3.3 million in 2005 to 7.24 million in 2010 [26], i.e., over 89 percent of the present population in Dubai and Abu Dhabi is foreign-born [13–16].

2.4. English as Lingua Franca

English is essential in the present situation in Dubai and Abu Dhabi. It is applied in a vast range of social interactions in most public places and services, such as restaurants, theaters, supermarkets, taxis, gas stations, shopping malls, and private healthcare centers [16,27], where Arabic is seldom spoken by the staff. Randall and Samimi [28] (pp. 43–44) consider Dubai a relevant city for the analysis of English as a 'Lingua Franca'. In addition, children started learning English in both public and private schools, as early as Kindergarten, and is the main language at the university level [16,29].

Some research has described the characteristics of English as spoken in Dubai [23,27,30,31]—which is subsumed under either 'Emirati English' or 'Gulf English'—to substantial lexical borrowings from different areas, such as religion (eid, 'religious festival'; Alhamdulillah, 'God be praised'; Wallah, 'I swear to God'; Inshallah, 'God willing'; and Mashallah, 'What God wishes'), food (biriyani, 'spiced rice'; Luqaimat, 'doughnut'; and Machboos, 'rice with cardamom, cinnamon, and dried lemon), geographical features (jabal, 'mountain'; and albar, 'the desert'), and clothing (dishdasha, 'long white robe for men'; ghetra, 'headscarf for men'; and abaya, 'black cloak for women').

3. Theoretical Framework

The following literature shows how MI theory, and more specifically, musical intelligence, have been dealt with throughout the years, its implementation in the UAE, and how these theories support this and similar studies.

3.1. A Contrastive Linguistic Analysis on the Arabic Prepositional System

This study makes use of a contrastive linguistic analysis (CA), which is a synchronic comparison of two languages [32], as we analyze languages belonging to the same period and focus more on dissimilarities than similarities. The beginning of Contrastive Linguistic dates back to 1957 when Robert Lado published his book Linguistics Across Culture. Although CA has been heavily criticized by scholars all over the globe, we cannot deny the merits of such an analysis when it comes to the Arabic situation. Due to the fact that English and Arabic belong to different language families, Germanic and Semantic families, respectively, they have distinct prepositional systems. There are fewer prepositions in Arabic than in English [32]: while English contain more than a hundred, Arabic has only twenty prepositions, but only six of them are commonly used (min, ila, 3la, bi, li, and fi) [33]. Regarding the usages of prepositions, in English, they can be attached to an adjective, for instance, fond of, tired of, and similar to. In English, the prepositions "of" and "to" connect an adjective to a noun. Nevertheless, in Arabic, a preposition does not connect these two elements.

Let us see two examples with prepositions as a complement of an adjective:

1. I am extremely sorry for your results.
2. The email I got is full of mistakes.

In Examples (1) and (2), the prepositions and object of the prepositions act as a complement of an adjective. In Arabic, this does not occur. However, the preposition and object of the preposition act as an adjective for the object of the sentence in Arabic, as in the following sentence:

3. رأيت ماريا في سيارتها. Raiatu Maria fi saiaratiha.

* Saw I Maria in car her.
I saw Maria in her car.

Another difference is that, in English, a preposition may occur before verbs in the gerund form:

4. She left the party without saying anything.
5. I am not used to traveling so much.

However, in Arabic, a preposition does not occur before verbs.
In English it is also possible to find prepositions at the end of a sentence:

6. Where is he from?
7. I have the results the director asked for.

In Arabic, however, prepositions do not occur at the end of a sentence.

The final difference we would like to point out is the fact that, in English, there exist some prepositions that occur as conjunctions, such as before, after, and since:

8. She went home before she finished her task.
9. I haven't met Dan since he returned from Tangier.

But in Arabic, prepositions cannot function as conjunctions.

All these differences between Arabic and English may result in negative transfers, as the learner will apply the rules existing in his L1 to produce sentences in the L2. This study analyzes to which extent negative transfers are present when Emiratis speak English.

Studies on Prepositions in Emirati Dialect and Gulf English

The literature lacks studies on the prepositions in Emirati Dialect and Gulf English. We did, however, find Ghwaileh's study [34], which focused on errors made due to the

negative transfer from Emirati Dialect and MSA while writing in English, revealing that, when translating from L1 (Emirati Arabic) into L2 (English), most students encountered difficulties in translating prepositions. For instance, Emiratis literally say in English: 'I eat ***from*** the restaurant' when they mean 'I eat *at* a restaurant'. This happens because, in Arabic, the preposition ***min*** (from) is used:

أكِل مِن المطعم. Akil min almat3m.

This phenomenon occurs because there is a colossal mistake in most English books for Arabs regarding prepositions: the most frequent prepositions in Arabic are translated into their main meaning in English. Table 1 shows these prepositions:

Table 1. Prepositions in Arabic, transliteration, and the usual translation into English.

Arabic	Transliteration	English
في	fi	in
إلى	ilā	to/towards
على	3lā	on
من	min	from
ب	bi	in/with
لِ	li	for/to

However, these prepositions do not always correspond to these translations. Therefore, it is common to find Emiratis and Arabs in general who have difficulties using the correct prepositions in English. Let us take a look at some other examples:

Emiratis usually say: 'I am ***in*** my way' when they mean: 'I am on my way'. This happens due to the fact that the preposition *fi* is usually translated as *in*:

انا في الدرب. Ana ***fi*** darb, I am ***in*** my way.

There are also cases in which one preposition is absent in English and present in Arabic:

Emiratis usually say in English: 'The library is near ***from*** the university', but they mean: 'the library is near the university'.

المكتبة قريبة من الجامعةAlmaktabat qariban min aljam3a.

The literal translation is: The library is near ***from*** the university.

There are some prepositions that are different in Modern Standard Arabic and Emirati Dialect. Ghwaileh's study [34] revealed that, when translating from L1 (Emirati Arabic) into L2 (English), most students encountered difficulties in translating the preposition ***until***, 7ata in MSA, many times substituted by the preposition لين liin in Emirati:

I stayed on the farm until the sunrise.

تميت بالعزبة لين الفجرTamit bial3izba liin alfajir.

In the dialect version, most secondary students translated this sentence as follows:

I stayed in the farm to the sunrise.

Next, the same students were given on a different day the same sentence to be translated, but now in MSA version:

تميت بالعزبة حتى الفجر. Tamit biall3izba 7ata alfajir.

Participants in Ghwaileh's study [34] made the same mistake they had made previously in the dialect-version sentence. This means that these Emiratis misuse prepositions when translating both from colloquial and standard Arabic into English; this due to the lack of instruction and insufficient knowledge/input in the use of prepositions, as well as due to the fact that English and Arabic belong to two very different language families [32].

3.2. Multiple Intelligences: The Brain and Language

Albert Einstein is reported to have started to speak extremely late; however, his initial silence may have made him see the world in a more detailed way. Numerous normal or close to normal children show particular difficulties in the learning of language. In some cases, the difficulty seems to be found mainly in auditory discrimination, causing them to misarticulate [1].

The capacity to decode linguistic messages fast—a prerequisite for the understanding of normal speech—seems to rely on an intact left temporal lobe; thus, injuries to, or the abnormal development of, this neural zone generally are sufficient to produce language disabilities. However, if the damage occurs during the first year of life, even if it affects the entire hemisphere of the brain, the child will be able to speak quite well. Early in life brain plasticity enables language to develop in the right hemisphere, even at the cost of compromising other functions, such as visual and spatial, that would normally be localized there. Attentive examination of such children's linguistic strategies reveal that they are unique in relation to those individuals who employ the normal language areas in the left hemisphere. In particular, individuals dependent upon the analytic mechanisms of the right hemisphere proceed almost entirely from semantic information: they decode sentences in the light of meanings of the principal lexical items, while proving unable to utilize cues of syntax. Only those children whose language exploits left hemisphere structures prove able to pay attention to syntactic cues, such as word order. Both left and right hemidecorticates are able to understand sentences whose meaning can be inferred simply from knowledge of the meaning of substantives:

The dog was struck by the jeep.

But only the individual with an intact left hemisphere can decode sentences where the critical difference in meaning inheres wholly in syntactic cues [1]:

The jeep was hit by the bus.

Howard Gardner takes care not to term this capacity as an auditory-oral form of intelligence, given that deaf individuals can acquire natural language.

Many retarded children show and outstanding capacity to master language—mainly the phonological and syntactic aspects—though they may have relatively little of significance to utter. Other rare children, in spite of retardation or autism, prove able to read when they are only two or three. These "hyperlexic" children show, therefore, high linguistic intelligence. The reading is so compulsive that it is hard to stop. Regarding mathematical intelligence, one hyperlexic child studied by Fritz Dreifuss and Charles C. Mehegan could immediately tell the day of the week of remote historical dates, while another showed an excellent memory for numbers.

3.2.1. Musical Intelligence

Musical intelligence is the ability to compose, play, remember, feel, and understand music [1]. People with musical intelligence are extremely sensitive to rhythm and sound. For instance, they can easily distinguish the sound of a Spanish guitar from that of an acoustic one. They think in terms of musical patterns. Individuals who possess high musical intelligence look for patterns in new information in order to increase learning. They also look for patterns in speech and language. They remember things by turning them into lyrics or rhymes [1]. This study is based on using music to make participants remember the right prepositions in English.

3.2.2. Musical Intelligence and Autism

We have also mentioned the most outstanding musical savant in the professional literature, Eddie Bonafe [8–12], who by the age of ten had begun to display the ability to play works at the level of the Mozart sonatas. Not only does the literature address Eddie's case, but also of many talented musical savants. Another music talent was a child called Harriet, who could play "Happy Birthday" in the style of famous composers, such as Mozart, Beethoven, Verdi, and Schubert. Harriet applied her musical intelligence in other

ways—she knew, for instance, the personal history of the members of the Boston Symphony Orchestra. At the age of three, her mother called her by playing incomplete melodies, which the child would then complete with the appropriate tone in the proper octave [1]. Thomas Wiggins, widely known as "Blind Tom" [35–37], was a famous musician in nineteenth-century America. Wiggins was born in Georgia and was apparently autistic, blind, and probably cognitively impaired. Wiggins was a skilled improviser and composer and, to judge from his performance repertoire, a highly accomplished pianist. His performances expressed his remarkable talents. Not only would he play famous works that posed significant technical challenges, but also works composed by himself, all from a repertoire of several thousand works played by heart upon request. His performances were extremely popular, and Wiggins displayed unusual verbal and physical behavior: walking and spinning around and making uncommon facial expressions [38–40]. Wiggins possessed tremendous musical memory and coordination, he would play back any work upon hearing it for the first time, simultaneously playing two different works (one with each hand) while singing a song, and perceiving all of the notes in complex harmonies. Another example of a blind person with developmental disability and extraordinary music talent is Leslie Lemke. Despite having a good memory, the pieces Lemke performs are always short [7].

Autism is nowadays considered a comprehensive disorder, rather than a medical problem or developmental disorder as it was classified in the 1940s.

3.2.3. Musical Therapy

The literature is filled with research that suggest that listening to or singing songs may provide benefits for people with Alzheimer's disease as well as other sorts of dementia [41,42]. A study suggests that people with dementia with sessions of a music-based therapeutic intervention probably relieves depression and improves overall behavioral problems at the end of treatment, apart from improving emotional well-being and quality of life and relieve anxiety [43].

There are some clinics in the world that use music therapy to treat patients with Alzheimer and other dementia [44,45]. *Música para despertar* became extremely famous when one of its videos went viral on social and traditional media [46,47] in 2020. The video shows the former ballerina Marta Gonzalez listening to Tchaikovsky's Swan Lake. As she listens, she recalls the choreography and dances to Tchaikovsky's beat.

The literature is also filled with research of music being used during and after interventions [48,49] to alleviate pain, and preceding medical interventions to relieve uneasiness and discomfort. Not only does musical therapy help human beings, but it may also be beneficial for animals. Kaavan, an elephant in a zoo in Pakistan, was kept 35 years in captivity, being completely alone in the last 8 years. The chief veterinarian at the Leibniz Institute for Zoo and Wildlife Research in Berlin, explained that Kaavan had developed "stereotypical behavior where he swooshes his head and trunk from side to side for hours." In order to prepare him for his release in December 2020, which comprised a 4000-km journey in a steel cage, he underwent music therapy in an attempt to tranquilize and motivate him [50,51]. This method is reportedly working. Several songs and genres were played to Kaavan, but Frank Sinatra's 'My Way' was his favorite; it reduced his anxiety and damaging behavior.

4. Participants

Twenty participants—10 male and 10 female—were randomly chosen to be the control group. Ten of them have only finished secondary public school. The other 10 have graduated from university or hold a master's degree as well.

Twenty participants—11 male and 9 female participants—who have answered in the questionnaire (Appendix A) that they have music proclivities (i.e., they listen to music at least three times per week, they enjoy singing along with music) were chosen to be the experimental group. We would have preferably chosen any musicians, such as viola players, pianists, and violinists; however, we could not find any to comprise the experimental group.

Regarding their level of education, 10 of them have completed secondary public school while the remaining participants hold a university or a master's degree. Participants in both groups were aged from 29 to 38.

5. Method

It was investigated if there are any differences in performances between Emirati with music proclivities versus regular participants (students and alumni) when receiving training concerning prepositions. To demonstrate that learning through an individual's strength or proclivities is more efficient than learning in the traditional way, participants were trained in two separate groups. The data for this part were obtained from six different training sessions, and each session lasted 10 min. There was a pretest some minutes before the first session (see Appendices B and C). Participants had to translate the sentences in Appendix B into English (participants' sheets were black and white, in order to facilitate readers' understanding). Appendix B shows the prepositions that occur only in Arabic in green; that is, there is a preposition in Arabic while there is none in English; the prepositions that occur both in Arabic and in English are shown in red. Appendix C is composed of 30 sentences in English with gaps that the participants must fill in using the correct preposition. Posttest 1 was administered after session three and Posttest 2 was administered after session six (see Appendices B and C).

The training sessions for the control group was developed as follows: firstly, the instructor read the rules regarding prepositions (see Appendix D). Next, participants repeated all the sentences out loud. Thirdly, participants in the control group read the lyrics of the song made exclusively for this study (see Appendix E). This song deals with the prepositions in context. The lyrics were read without listening to any music. The objective of reading the lyrics is to make sure that both groups receive the same amount of input.

Regarding the training sessions for the experimental group, the first two steps were identical to the training session for the control group: the instructor read the sentences in Appendix D and then the participants repeated them. Then, participants sang the song made exclusively for this study (see Appendix E). The melody used was a karaoke version of the song *Like a virgin*, performed by the singer Madonna. A video on YouTube was exclusively created for this training (https://www.youtube.com/watch?v=0_yVbr6kLhw, accessed on 30 March 2021).

6. Results and Discussion

As we mentioned in Table 1 (Section 3.1), the most frequent prepositions in Arabic are translated into their main meaning in English. However, these prepositions do not always correspond to these translations. Therefore, it is common to find Emiratis and Arabs in general who have difficulties using the correct prepositions in English. Let us take a look at some examples from our sentences from the pretest and Posttest 1 and 2 (see Appendix B). Let us start by analyzing the negative transfer of the preposition "from" (*min* in Arabic):

10. اتنهي من العمل في 7 (I finish work at 7)

In the case of Sentence 1, more than 90% answered I finish ***from*** work, as the verb in Arabic is ***antahi min*** (I finish ***from***).

3. 'He is married ***from*** her', instead of saying 'I am married ***to*** her'.

Hwa mitazawij minha.

Our study is in line with Ghwaileh's findings [34], as we could confirm the same mistakes shown in his study as well as mistakes regarding other prepositions, which will be discussed below and more in depth in the Results and Discussion section.

11. من زمان وأنا أبا هالشي(I've been wanting this for a long time.)

As the preposition من(min) is generally translated as *from*, 92% of participants translated this sentence as *I wait/I am waiting from a long time*. No participants used the present perfect progressive to translate this sentence, but present continuous or simple present, instead.

12. اتريبني. (wait ***for*** me)

As for Sentence 12, most students translated it as "wait me", as there is no preposition in its Arabic version.

The other cases of negative transfer into English will be discussed in the following section.

6.1. Pretest

In order to carry out the pretest, participants had to translate the sentences in Appendix B and complete the text with the correct preposition in Appendix C. The following Table 2 shows all the *on* prepositions extracted from Appendices B and C. There are twenty participants in each group and ten phrases containing the preposition *on*. Therefore, each phrase can have a maximum of twenty correct answers. Let us analyze the first phrase: on a farm, extracted from Appendix C, Sentence 1. We find under the grid on a farm the number 0 for the control group, which means that no participants completed the gap with the preposition *on*. The same result was found in the experimental group, which also means that no participants completed the gap with the correct preposition. Regarding the next phrase on the island—extracted from Appendix C, Sentence 2—only one participant in the control group filled in the gap with the preposition ***on***.

There was a clear preference for the preposition *in*, as all participants completed the form by using ***in*** *YouTube*, ***in*** *the bus*, ***in*** *the farm*, and ***in*** *an island* (there was also one contestant who wrote Pat is ***from*** *an island* and it was considered correct). Regarding *on the weekend* (American English), we decided to include it on this list in the British version as *at the weekend*. Actually, seven participants answered ***at*** *the weekend*. However, the remaining 33 participants answered ***in*** *the weekend*. ***In*** *first of December* was also by far the most used preposition, while 3 participants did not use any preposition: *see you the first of December*. Regarding on sale, the participants either translated it as: *this jeans has a discount or this jeans on sale.* Although in Arabic the word jeans appeared also in plural "هالجينزات/**hal**jeanz**at**"—the suffix -at indicates plural—the demonstrative pronoun ***hal*** is used for both singular and plural in Emirati Arabic, meaning this or these. Most contestants also omitted the verb to be (these jeans ***are***), as the verb to be in the present tense is absent in both MSA and in all the dialects of Arabic. Two contestants also answered **for** sale, instead.

Regarding the level of education, 49 out of the 53 correct answers were given by participants who hold either a university or a master's degree. In addition, 29 correct answers were performed by females and 24 by males.

Let us now analyze Table 3, which deals with the preposition *in*. Both in and on Khair Street were considered correct answers. However, 36 participants opted for the preposition ***in***.

As we can see, Emiratis tend to simplify the prepositions ***in***, ***on***, and ***at*** by using only ***in*** when speaking Emirati English. In the case of ***in*** *different colors*, which is the least usual collocation on this list, three participants completed the sentence with the preposition ***at***. In the case of the translation for the sentence *You can see it in the picture*, 5 participants translated it as *You can see the picture* instead. Because we could not encounter problems concerning the preposition ***in***, we decided to disregard it in the following two posttests.

Regarding the level of education from the participants, the only eight mistakes were made by participants that do not hold a university degree. Five mistakes were made by males while four were made by female participants.

As we can see, Emiratis tend to simplify the prepositions ***in***, ***on***, and ***at*** by using only ***in*** when speaking Emirati English. In the case of ***in*** *different colors*, which is the least usual collocation on this list, three participants completed the sentence with the preposition ***at***. In the case of the translation for the sentence *You can see it in the picture*, 5 participants translated it as *You can see the picture* instead. Because we could not encounter problems concerning the preposition ***in***, we decided to disregard it in the following two posttests.

Regarding the level of education from the participants, the only eight mistakes were made by participants that do not hold a university degree. Five mistakes were made by males while four were made by female participants.

With respect to the preposition ***at*** in Table 4, again Emiratis used the preposition *in* in most cases instead. ***At*** *Christmas* was also substituted by the preposition *on* by two participants, maybe because of the collocation ***on*** *Christmas day*. With regard to the sentence *I live at 234 Oxford street*, most participants chose the preposition *in* and some did not add any preposition (*I live 234 Oxford street*). Maybe because many participants were businesspeople and they constantly exchange emails, the sentence *Email me at alramsa@email.com* was correctly answered by more than half of the respondents. Although only one participant omitted the preposition *at* in the sentence *I finish work at 7*, 32 participants translated the sentence literary: I finish *from* work at 7, as in Arabic the verb *finish* takes the preposition *from*. However, it is clear that this common collocation *at + hour* is common in Emirati English. The blank *laugh at* was mostly filled in by *laugh on*, because in Emirati Arabic the expression is ..يضحك علي*yaD7ak 3lay,* which literally means *laugh on me*; some participants also filled in with the preposition from *laugh from me*. The sentence *My mom yells at me* obtained a similar performance to *laugh at me*; again, the preposition in Emirati Arabic is 3la (on) على. Nevertheless, most participants left it blank: *My mom yells me*. While, 3 answered *yells on me*, translating it literally from Arabic.

Let us now analyze the preposition *at* in Table 4:

With respect to the preposition **at** in Table 4, again Emiratis used the preposition **"*in*"** in most cases, instead. *At Christmas* was also substituted by the preposition *on* by two participants, maybe because of the collocation *on Christmas day*. With regard to the sentence "I live *at* 234 Oxford street", most participants chose the preposition ***in*** and some did not add any preposition (I live 234 Oxford street). Maybe because many participants were businesspeople and they constantly exchange emails, the sentence "Email me at alramsa@email.com" was correct by more than half of the respondents. Although only one participant omitted the preposition *at* in the sentence "I finish work *at* 7", 32 participants translated the sentence literary: I finish *from* work at 7, as in Arabic the verb *finish* takes the preposition *from*. However, it is clear that this common collocation *at + hour* is common in Emirati English. The blank "laugh *at*" was mostly filled in by "laugh on", because in Emirati Arabic the expression is ..يضحك علي/yaD7ak 3lay, which literally means *laugh on me*; some participants also filled in with the preposition from, "laugh *from* me". The sentence "My mom yells *at* me" obtained a similar performance to "laugh *at* me"; again, the preposition in Emirati Arabic is 3la (on) على. Nevertheless, most participants left it blank: "My mom yells me." While 3 answered Yells *on* me, translating it literally from Arabic.

With regard to the collocation ***good at***, all contestants filled in this gap with the preposition ***in***, as in Emirati Arabic they would use the preposition ***fi.***

From the total of 100 right answer questions obtained in the training of the preposition *at*, 69 were given by participants holding a university or master's degree, and 62 of the correct answers were given by female participants.

As it is shown in Table 5, there are some phrases that were known by more than half of the participants while others were little known or unknown at all. Regarding Sentence 11 (see Appendix C), *you can pass the exam* ***by*** *preparing for it*, most contestants left it blank. Five completed it with the preposition ***from***, four with the preposition *since* and three with the preposition ***at***. *Go* ***by*** *metro* was the preferred answer although many opted for the phrase *go* ***in*** *metro*.

Table 2. Pretest for the preposition *on*.

Preposition *on*	on a Farm	on an Island	on Independence Day	on the Bus	on This List	on the Phone	في أول من ديسمبر (on the 1st of Dec.)	في التلفزيون on TV	في يوتيوب on You-Tube	عليهم خصم on Sale	Percentage of Correct Answers
Control group	0	1	6	0	1	9	2	2	0	7	X = 2800/200 = 14%
Experimental group	0	0	4	0	0	10	3	2	0	6	X = 2500/200 = 12.5%

Table 3. Pretest pf the preposition *in*.

Preposition *in*	in Different Colors	in Spring	in London	in the Morning	على شارع الخير in/on Khair St.	في أميركا in America	في الصورة (in the Picture)	في ديسمبر (in Dec.)	in the Car	in the Taxi	Percentage of Correct Answers
Control group	18	20	20	20	20	20	17	20	20	20	X = 19,500/200 = 97.5%
Experimental group	19	20	20	20	20	20	18	20	20	20	X= 19,700/200 = 98.5%

Table 4. Pretest for the preposition *at*.

Preposition *at*	at Christmas	at 234 Oxford Street	at al-ramsa@email.com	at the End of the Month	at the Weekend	at Night	7 في at 7	Laugh at	Yell at	Good at	% of Correct Answers
Control group	3	0	9	2	4	7	20	3	2	0	X = 5000/200 = 25%
Experimental group	4	0	11	2	3	5	19	4	2	0	X = 5000/200 = 25%

Table 5. Pretest of the preposition *by*.

Preposition *by*	by Preparing for It	go by Metro	by Mistake	by Chance	by Credit Card	by Shakespeare	by My Side	by Myself	by 5 pm	by the Lake	% of Correct Answers
Control group	0	11	13	15	6	13	12	13	4	2	X = 8900/200 = 44.5%
Experimental group	0	13	13	15	4	14	11	14	3	1	X = 8800/200 = 44%

As it is shown in Table 5, there are some phrases that were known by more than half of the participants while others were little known or unknown at all. Regarding sentence number 11 [see Appendix C] "you can pass the exam *by* preparing for it", most contestants left it blank. Five completed it with the preposition **from,** four with the preposition *since* and three with the preposition *at*. "Go *by* metro" was the preferred answer although many opted for the phrase "go *in* metro".

With regard to Sentence 15, ***by*** *mistake*, extracted from Appendix C, in Arabic it is expressed by the preposition *bi***,** which is mainly translated in English as *with*. One participant instead of filling in the blank added the letter -n to the noun mistake, which resulted in the sentence: *she did it mistaken*. Others filled it in either with the indefinite article "a" (*She did it a mistake*) or with the pronoun "another" (*She did it another mistake*). Two participants completed the gap by using the preposition *for*: *She made it for mistake*. The collocation *by chance* also takes the preposition *bi* in Arabic: *Bi* SSidfa بالصدفة, which is pretty close to the MSA variant biSSudfa. It seems that this expression is widespread among Emiratis and maybe because *by* in English and *bi* in Arabic are similar, participants have assimilated it well. Two participants, however, left it blank.

The phrase *pay* ***by*** *credit card* was mostly completed with the preposition *with*. In Arabic *by credit card* would be "bi bitaqa/ ببطاقة ". Both the prepositions *bi*/ب and *m3*/مع are mainly translated into English as *with*.

Regarding Phrase 19, *written by Shakespeare*, in MSA no preposition is required, as verbs in MSA have an exclusive passive form. Arabic dialects, however, do not express the passive in the same way; in the Emirati Dialect it is expressed by the preposition *3n* عن, which usually means *about* in MSA. When comparing in Emirati Dialect, I am taller than you, for instance, Emirati dialects allows two prepositions; *3n* or *min*; *min* is the equivalent of *from* in both Emirati and MSA. That is, in some structures, both *3n* and *min* are interchangeable, *min* being the equivalent of *from* in most cases. Although more than the majority chose the correct preposition (*written by Shakespeare*), the ones who were wrong opted for *written from Shakespeare*, which might have been an influence of the preposition *3n* or *min* in the Emirati Dialect.

Sentence 24, *His house is by the lake*, was mostly filled in as *near the lake*; however, the preposition near had been given as an example: *24. His house is ____ the lake (that is, near the lake)*. Therefore, we disregarded the answer *near* as correct. Seven participants also filled in the blank with the preposition *close*: *His house is close the lake*; however, no one filled in with the alternative preposition *close to*.

The expression in Sentence 21, *by my side*, which exists in MSA, is simplified in the dialect by "***wiaail***ويايي", which literally means *with me*. However, the expression *by my side* is recurrent in English and over 50% of participants chose the correct answer. Yet, the remaining participants chose the collocation *on my side*, which is also correct in English, but it has a different meaning—moral support instead of being physically beside someone.

We have decided to leave out this preposition from the song, so that we can observe if there is a homogenous improvement in both groups throughout the training. Only the collocation by the lake was present in the song of the experimental group. This collocation is expected to obtain better results compared to the remaining nine collocations.

Regarding the level of education, from the 177 correct answers obtained in the training of the preposition *by*, 141 were given by participants who hold a university or master's degree while 105 were given by female participants.

As evidenced in Figure 1, the preposition *on* obtained the lowest performance whereas the preposition *by* obtained the highest. The mean of the control group for the correct answers was 27.83%.

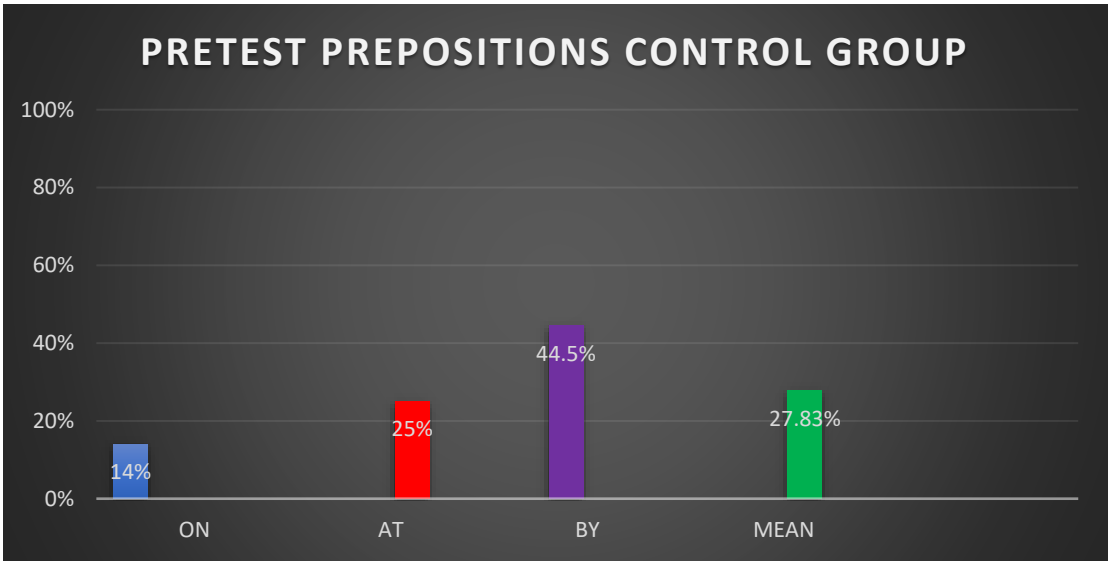

Figure 1. Control group pretest prepositions and mean.

As we can observe in Figure 2, the preposition *on* obtained the lowest performance whereas the preposition *by* obtained the highest. The mean of the control group for the correct answers was 27.16%. If we contract Figures 3 and 4, we can observe that both groups obtained similar results.

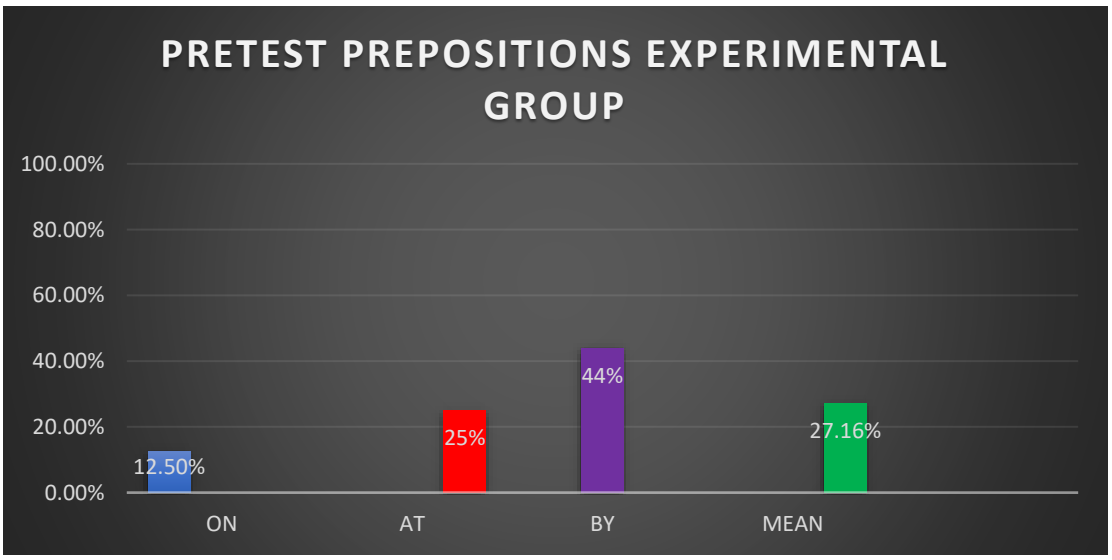

Figure 2. Experimental group pretest and mean.

The results evidenced in Table 6 do not contemplate the results from the preposition *in*, as we have decided to disregard it from the study due to the high number of accurate answers. In order to better understand these figures, let us see them in Figure 3 below:

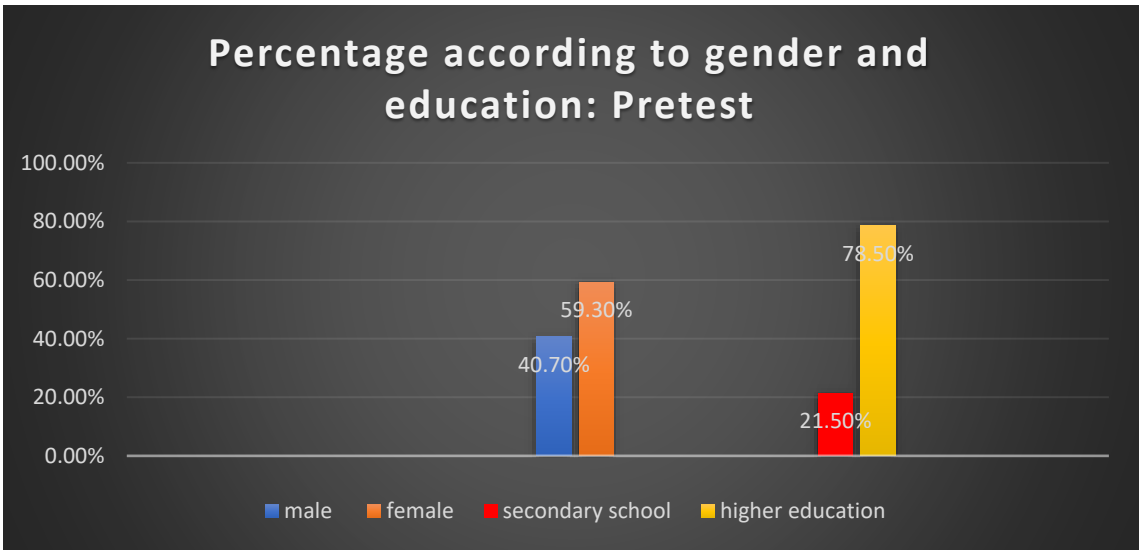

Figure 3. Pretest: percentage of correct answers regarding gender and education

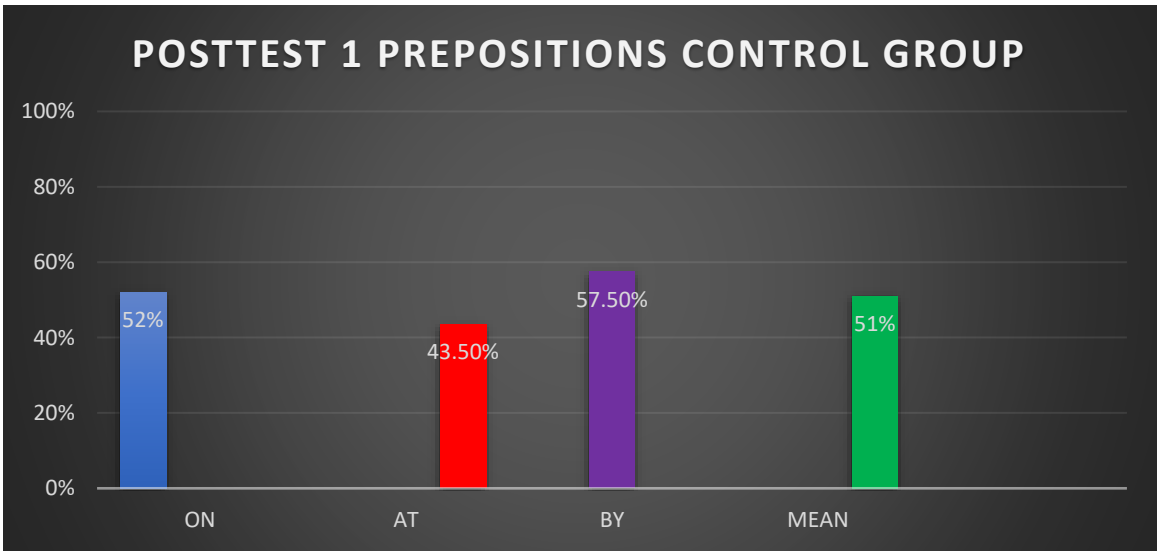

Figure 4. Posttest 1 control group, and Posttest 1 prepositions and means.

Table 6. Pretest results regarding gender and level of education.

Total of Correct Answers	Gender: Male Total Number of Correct Answers	Gender: Female Total Number of Correct Answers	Level of Education: Secondary School	Level of Education: University or Master's Degree
330	134	196	71	259

6.2. Posttest 1: Grammar (Prepositions)

In order to carry out Posttest 1, the participants had to follow exactly the same procedures described in the pretest (see Section 6.1).

Regarding Table 7, we would like to highlight that the first two collocations in the song *on sale* and *on a farm* were the two which obtained most correct answers. These results are in keeping with the working memory capacity [52]. Brain capacity is limited to approximately five to seven pieces of information. Our brain tends to firstly memorize the seven pieces of information on a list or in a text. In this first posttest, we can observe a better performance in the experimental group compared with the control group.

From the 275 accurate answers regarding the preposition *on*, 192 were given by participants who majored from university or have a master's degree, and 179 right answers were given by females.

Regarding Table 8, the phrase *at Christmas* obtained a slight improvement in both groups compared to the pretest; this improvement was also homogeneous. This can be explained by the fact that this phrase was not present in the song. In other words, both groups had the same type of input; they just read this phrase once on the training sheet (see Appendix D). Concerning the phrase *at 234 Oxford street*, the experimental group performed slightly better than the control group as this phrase was present in the song. However, this phrase was translated from Arabic into English, and as in Arabic there is no preposition for such a phrase (*I live in Oxford Street, 51*), participants translated it literally. The collocation at *Alramsa@email.com* had a homogenous progress; both groups had the same input as this phrase is not present in the song.

As we have previously mentioned, our brain tends to memorize the first seven pieces of information. In a song, apart from the actual beginning, the chorus is also considered a new beginning as it is repeated several times throughout the song. Our chorus "on the weekend in, in the USA, at the weekend in the UK, UK". All participants in the experimental group translated the sentence "I will see you on/at the weekend" correctly.

Table 9 shows us the result obtained regarding the preposition *by*, which was intentionally left out of the song so that we could compare if there was a homogenous improvement in both the control and the experimental groups. We observed very similar results in both groups.

The few participants who did not use the collocation *written by Shakespeare*, kept using the preposition *from* instead.

Figure 4 shows that the mean of the control group is of 51% of correct answers. This percentage almost doubled when compared to the control group mean in the pretest (Figure 3), which was 27.83%. We can confirm that training contributes to an improved performance in the discrimination and identification of L2 [20,53,54].

Figure 5 evidences the performance of the experimental group in Posttest 1. We can already observe better results when compared to the control group in the same posttest (Figure 6).

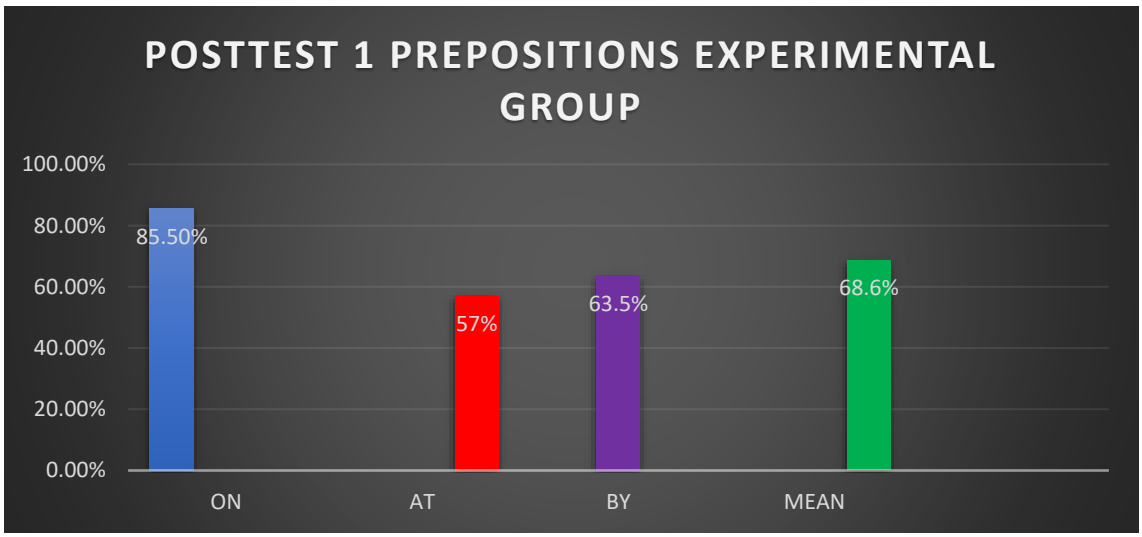

Figure 5. Experimental group Posttest 1 prepositions and means.

Table 7. Posttest 1 for the preposition *on*.

Preposition *on*	on a Farm	on an Island	on Independence Day	on the Bus	on This List	on the Phone	في أول من ديسمبر (on the 1st of Dec.)	في التلفزيون on TV	في يوتيوب on You-Tube	عليهم خصم on Sale	Percentage of Correct Answers
Control group	8	9	11	9	8	14	12	11	9	13	X = 10,400 /200 = 52%
Experimental group	20	15	15	16	16	18	17	17	18	19	X = 17,100 /200 = 85.5%

Table 8. Posttest 1 of the preposition *at*.

Preposition *at*	at Christmas	at 234 Oxford Street	at al-ramsa@email.com	at the End of the Month	at the Weekend	at Night	7 في at 7	Laugh at	Yell at	Good at	% of Correct Answers
Control group	4	6	14	6	11	8	20	6	6	6	X = 8700/200 = 43.5%
Experimental group	5	10	15	7	20	8	20	8	7	14	X = 11,400/200 = 57%

Table 9. Posttest 1 for the preposition *by*.

Preposition *by*	by Preparing for It	Go by Metro	by Mistake	by Chance	by Credit Card	by Shakespeare	by My Side	by Myself	by 5 pm	by the Lake	% of Correct Answers
Control group	8	13	15	17	7	15	13	15	6	6	X = 11,500/200 = 57.5%
Experimental group	7	14	15	17	7	16	14	15	6	16	X = 12,700/200 = 63.5%

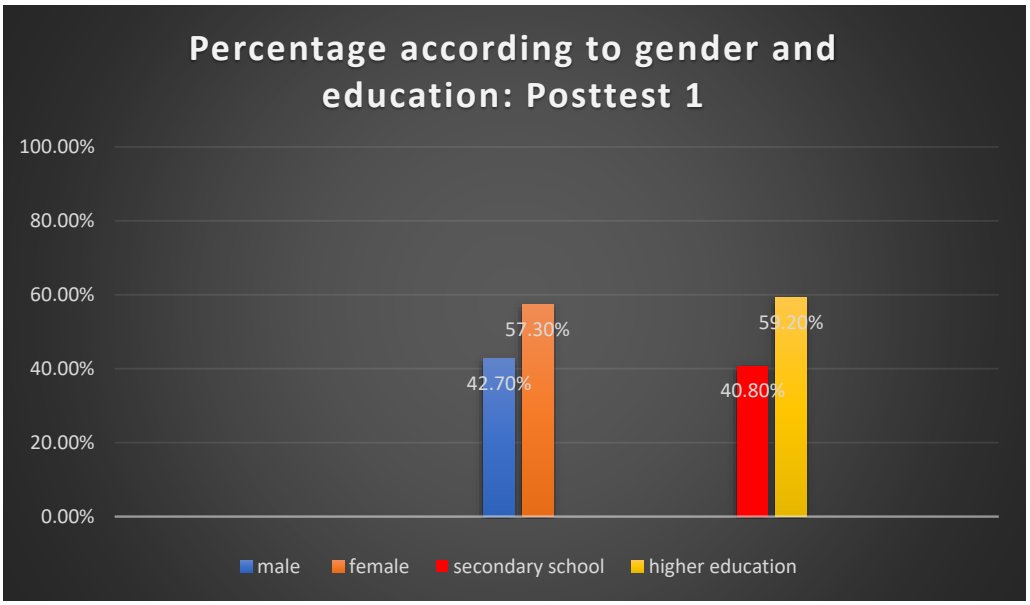

Figure 6. Posttest 1: Percentage of correct answers regarding gender and education.

As we can observe in Table 10, Posttest 1 confirmed the proclivities in the pretest: Female participants and the ones who hold a University or master's degree obtained better results.

Table 10. Posttest 1 results regarding gender and level of education.

Total of Correct Answers	Gender: Male Total Number of Correct Answers	Gender: Female Total Number of Correct Answers	Level of Education: Secondary School	Level of Education: University or Master's Degree
718	306	412	293	425

Let us visualize these figures in Figure 6 below:

6.3. Posttest 2: Grammar (Prepositions)

Posttest 2 was administered after the final training session, Session 6. Below there are the results obtained by both groups:

Table 11 shows us the results regarding the preposition *on*. It can be seen that the experimental group almost mastered this preposition while the control group also improved its performance but not even one collocation with the preposition *on* was mastered.

It can be observed in Table 12 that the collocations *at Christmas*, *at the end of the month*, *at night*, *yell at*, which were not present in the song, obtained the same or nearly the same number of correct answers in both groups. The table shows that the phrase *good at* present in the song stood out in performance when compared to the control group, whose majority kept using *good in*.

Table 13 evidences the results regarding the preposition *by*, which was intentionally left out of the song. We can observe a homogenous improvement in both the control and the experimental groups. We can observe remarkably similar results in both groups, except for the collocation *by the lake*, which was present in the song used in the training of the experimental group. It can be seen that the experimental group has mastered this collocation. It is worth remembering that the control group also read the lyrics of the song in each training session, but it seems to be the musical training itself that made participants in the experimental group master this collocation.

Table 11. Posttest 2 of the preposition *on*.

Preposition *on*	on A Farm	on An Island	on Independence Day	on the Bus	on This List	on the Phone	في أول من ديسمبر (on the 1st of Dec.)	في التلفزيون on TV	في يوتيوب on You-Tube	عليهم خصم =on Sale	% of Correct Answers
Control group	12	14	13	12	9	15	14	14	13	14	X = 1,3000/200 = 65%
Experimental group	20	20	16	20	19	20	18	19	20	20	X = 1,9200/200 = 96%

Table 12. Posttest 2 of the preposition *at*.

Preposition *at*	at Christmas	at 234 Oxford Street	at al-ramsa@email.com	at the End of the Month	at the Weekend	at Night	في أول من ديسمبر 7 at 7	Laugh at	Yell at	Good at	% of Correct Answers
Control group	8	9	16	9	13	9	20	9	8	8	X = 10,900/200 =54.5%
Experimental group	8	19	17	9	20	9	20	11	9	20	X =14,200/200 = 71%

Table 13. Posttest 2 of the preposition *by*.

Preposition *by*	by Preparing for It	Go by Metro	by Mistake	by Chance	by Credit Card	by Shakespeare	by My Side	by Myself	by 5 pm	by the Lake	% of Correct Answers
Control group	12	16	17	18	11	17	16	17	9	10	X = 14,300/200 = 71.5%
Experimental group	13	16	18	19	12	17	17	18	10	20	X = 16,000/200 = 80%

Figure 7 shows that the mean of the control group is of 63.66% of correct answers. This percentage more than doubled when compared to the control group mean in the pretest (Figure 3), which was 27.83%. Again, we can confirm that training contributes to an improved performance in the discrimination and identification of L2 [20,53,54].

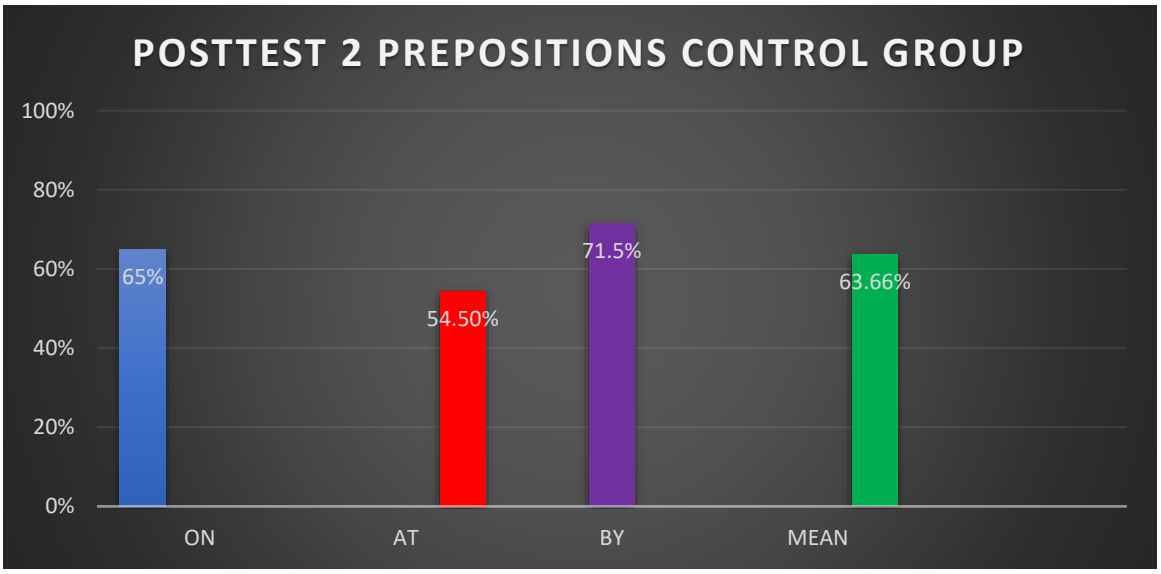

Figure 7. Posttest 2 control group prepositions and means.

Figure 8 evidences the performance of the experimental group in Posttest 2. We observed results of almost 20% higher when compared to the control group mean (Figure 7).

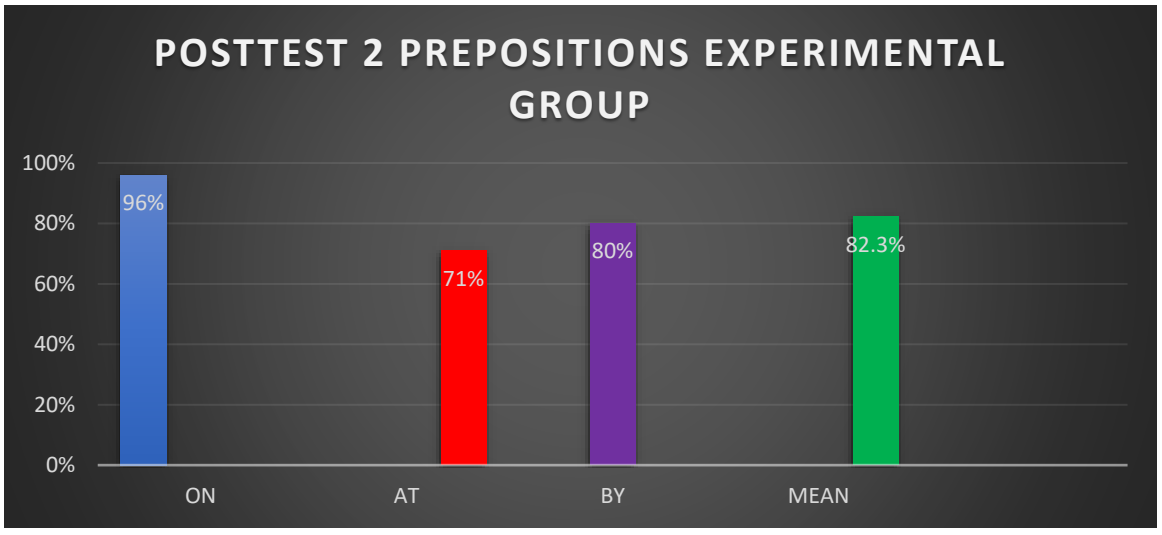

Figure 8. Posttest 2 experimental group prepositions and means.

As we can observe in Table 14, Posttest 2 again confirmed the proclivities in the pretest and posttest 1: Female participants and the ones who hold a University or master's degree obtained better results.

Table 14. Posttest 2 results regarding gender and level of education.

Total of Correct Answers	Gender: Male Total Number of Correct Answers	Gender: Female Total Number of Correct Answers	Level of Education: Secondary School	Level of Education: University or Master's Degree
876	407	469	414	462

Figure 9 shows us a more homogenous panorama, while there is a seven percent difference between the correct answers between male and female participants, there is a five percent difference between participants who completed secondary school and the ones who pursued higher education. The differences in the level of education in the pretest were over 50%.

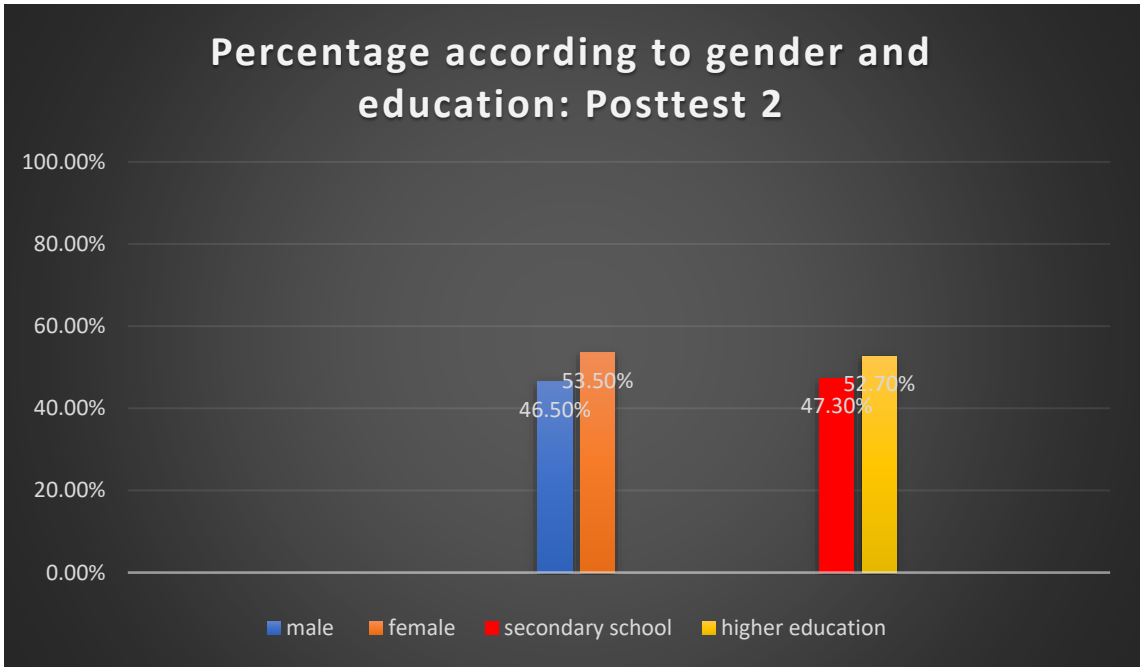

Figure 9. Posttest 2: Percentage of correct answers regarding gender and education.

6.4. Descriptive Analysis

In order to make a descriptive analysis, the Mann–Whitney U test was applied (see Table 15).

Table 15. Mann–Whitney U test.

	Control			Experimental				
	Mean	**SD**	**Median**	**Mean**	**SD**	**Median**	**z**	***p*-Value**
Differences pre–posttest 2	10.750	1.070	11	16.450	0.759	17	−5.531	<0.001

To test the hypothesis of whether there are differences between the pretest and Posttest 2 regarding the control and experiment groups, the first thing we have done was to calculate the variable of the difference between the scores of Posttest 2 and the pretest. Then, to see if there are differences between this variable depending on the group (as the normality of the difference variable was not fulfilled in both groups), we have used the nonparametric Mann–Whitney U test where the hypotheses were as follows:

H0: *There are no differences between the means between the control group and the experimental group.*

H1: *There are differences between the means between the control group and the experimental group.*

As demonstrated in Table 15, a result z = −5.531 was obtained with an associated *p*-value less than 0.001, which is why the null hypothesis of equality of means was rejected and therefore we can say that the increase in the scores in the experimental group (mean = 16.450; standard deviation (SD) = 0.759; median 17) is significantly higher than that found in the control group (mean = 10.750; SD = 1.070; median 11).

Figure 10 illustrates the differences between the means between the control group and the experimental group.

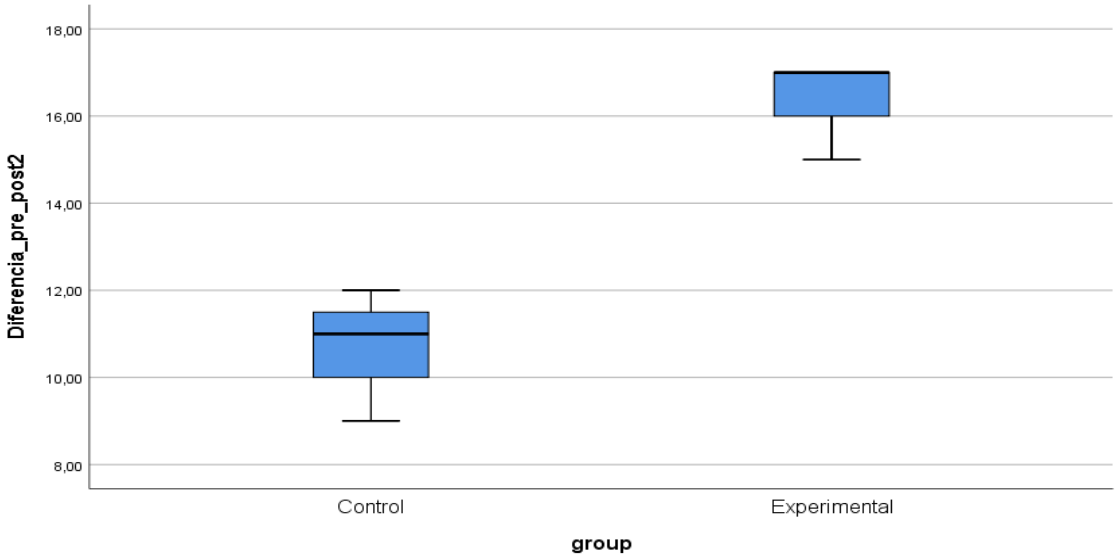

Figure 10. Difference in means control and experimental groups

7. Conclusions

This study has attempted to demonstrate that students' proclivities, strengths, and weaknesses should be considered in the learning process and with a simple ten-minute training the performance can be considerably improved. We would like to emphasize that grammar, more precisely prepositions, was arbitrarily used in this study; nevertheless, educators can and should use any subject topics to assist learners. A short session was favored to an extended one due to the fact that this study was designed to be implemented in the classroom where teachers usually work with a tight schedule.

The ambition of progress led to the non-preservation of linguistic identity in the UAE. There are daily situations in which an Emirati citizen is unable to speak their own native language, i.e., Emirati Dialect, in their own country or rather are forced to speak a second language, namely English, which some locals often struggle with [55]. Although the country has a bond of over 220 years with England, not all Emiratis master the language. There are many instances of Arabic influence in Emirati English, one of them is the negative transfer of Arabic prepositions in Emirati English. These negative transfers are due to the fact that English and Arabic belong to different language families, and therefore, have distinct prepositional systems [32]. Besides, English contains more than a hundred prepositions, whereas Arabic has only twenty, and only six of them are commonly used [33].

As we could read in our theoretical framework, musical intelligence has been proved to be an isolated area that can stand out from other areas. The literature is replete with accounts of astonishing autistic young people who perform music amazingly [8–12,35–40]. Moreover, studies have suggested that music may provide benefits for people with Alzheimer's disease as well as other sorts of dementia [41,44,46,47], as well as release anxiety and promote well-being. There are also studies regarding musicians' brains, which were demonstrated to be larger in the left cerebral hemisphere when contrasted with other individuals [1].

Concerning our four research questions, the first inquired whether there were influences of MSA and Emirati Dialect in the acquisition of prepositions in Emirati English. We could find evidence that there is an over usage of the preposition *in* in Emirati English. This happens due to the fact that the preposition *fi*, usually translated in English as *in*, is the most used preposition in Arabic. This negative transfer was encountered in all the studied prepositions in this study, mainly in the pretest, when participants were still not aware of the correct usage of prepositions. The preposition *in* obtained the best results—98% correct

answers. That is why we decided to discard this preposition from our training. The preposition *on* was substituted in the pretest by the preposition *in* in nine out of ten expressions: *on a farm*, *on an island*, *on independence day*, *on the bus*, *on this list*, *on the 1st of December*, *on TV*, *on YouTube*, and *on sale*. The only expression that was about 50% correct was *on the phone*. The preposition by, however, has more expressions correctly fossilized in Emirati Arabic. Six out of ten expressions (*by metro*, *by mistake*, *by chance*, *by Shakespeare*, *by my side*, and *by myself*) obtained more than 50% correct answers. Regarding the preposition at, only the expression *at 7 o'clock* is fossilized correctly in Emirati English, as it obtained 97.5% correct answers. Concerning the preposition *from* (min in Arabic), present in Appendix B, three of the four sentences were negatively transferred into English by more than 90%.

Our second research question investigated the learning through music and through traditional learning (reading and repeating the content). The null hypothesis of equality of means was rejected (see Table 15) and therefore we could confirm that the increase in the scores in the experimental group was significantly higher than that found in the control group. In other words, learning through music was proved to be statistically more efficient than learning through a more conventional way.

The following research question analyzed the educational level and gender, two important social variables related to linguistic behavior [56,57], and it was revealed that the level of education plays a great role in the proficiency of English: in the pretest, 78.5% of the correct answers were among the participants who pursued higher education. Our findings are in keeping with Alnamer S. and Alnamer M.'s study [58], which revealed that educated Emirati speakers are more in contact with English and use English loanwords more than their uneducated counterparts. Conversely, uneducated Emirati speakers prefer to use Persian, Hindi, and Turkish words instead of words in English.

Regarding gender, the female participants performed better than the masculine ones: 59.3% of the correct answers in the pretest belonged to women. Again, our study is in line with Alnamer S. and Alnamer M. [58], who also demonstrate that female speakers of UAE use English more than their male counterparts in light of the fact that women pursue prestige even in the linguistic level. Male speakers of UAE, nevertheless, use more Persian and Hindi loanwords and are not usually mindful that these are in fact borrowed. We could also observe that the more training both groups received the smaller was the difference in correct answers concerning the two social variables: gender and educational level.

The achievement of superior results when learning through music demonstrated in this present study are similar to the ones obtained in our previous study [20], in which the content taught through dance (experimental group) obtained a statistically meaningful difference compared to the control group (participants were trained in a traditional way, by reading and repeating the content). Therefore, we propose that learning through the MI, be it kinesthetic, musical, or any other intelligence, is worthier than just learning in a traditional way. This has been demonstrated in this study in which we applied musical intelligence to boost learning as well as in our previous study in which kinesthetic intelligence was used during training.

This paper presents various limitations as well as proposals to be improved in future studies. The principal restriction is with respect to the quantity of participants. Having groups of twenty members in training may not be sufficient to test for homogeneity. In future research, an expanded number of participants would surely invigorate the outcomes and subsequently the capacity to analyze the findings of the current study more precisely.

Our previous study [20] marked a solid beginning for questions regarding MI. This study is a detailed follow-up study applying musical intelligence. The data collection used in this study tracked participants' responses during the preposition task, responses which can be analyzed and coded in order to study participants' performance and, specifically, to which extent accuracy improved as the training advanced. Analyzing more participants in this way may shed more light on the findings of the training obtained in the present study.

A long-term goal is to explore MI applied in learning. There are other intelligences, such as mathematical, naturalistic, and inter- and intrapersonal, which may be applied

in similar experiments to corroborate our findings, as well as to seek more factors that facilitate learning. Through such a line of research questions, cognitive skills and learners' strengths can also be explored. In conclusion, this paper marks the second step in this line of MI research, and we hope for follow-up studies that will keep finding out the elements that facilitate learning.

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Data Availability Statement: All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Committee of Applied Linguistics, UCM.

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Appendix A Questionnaire to Select Participants to the Experiment and Control Group

Sex: __ male __ female
Level of education: __ secondary school __ University degree
__ master's degree __ PhD
Do you usually listen to music?
Yes, every day. _____ Yes, between 5 to 6 days a week. ____
Yes, 3 to 4 days a week. ____ Yes, one or two days per week. ____
No, never/almost never. ___
Is music important in your life?

_____

Do you like to sing along when you are listening to music?

_____

Does music relax you?

_____

Can music change your mood for the better? In other words, can you feel happier/more motivated when listening to music?

_____

Do you play any instruments?
___ yes ___ no
If yes, which instrument do you play?

_____

And how long have you been playing it?

_____

Are your parents or siblings musicians or do they play any instruments?

_____

If so, which instruments do they play?

_____

Appendix B Pretest and Posttests I and II (Arabic to English; Participants Had Neither the Translation nor the Colored Prepositions Shown Below. The Prepositions in Green Means that the Preposition Exists in only One of the Languages)

Please, translate the following sentences into English:
7 انتي من العمل في (I finish work at 7)

_____

2. ترومين تشوفينها في الصورة. (you can see her in the picture)

_____

3. **هو متزوج من ماريا.** (he is married to her)

_____

4. بشوفك في إجازة نهاية الأسبوع. (see you on/at the weekend)

_____

اشوفك في أول من ديسمبر. (See you on December 1.)

_____

بشوفك في ديسمبر. (I will see you in December.)

_____

7. انا شفته في التلفزيون (I saw it on TV.)

_____

انا شفته في يوتيوب. (I saw it on YouTube.)

_____

9. من زمان ما شفتك (long time no see.)

_____

10. أنا طالع اجازة (I am **on** vacation.)

_____

11. من زمان وأنا أبا هالشي (I've been wanting this for a long time.)

_____

12. اترييني (wait **for** me)

13. شو رايك نسير بالمترو؟ (what do you think about going by metro?)

_____

14. هالجينزات عليهم خصم (These jeans are on sale.)

_____

15. 51 ساكن على شارع الشيخ زايد (I live at 51 Sayed road.)

_____

16. ساكن في برج على شارع الخير (I live in a tower on/in Alkhair street.)

_____

17. سويت هذا بروحي. (I did it by myself)

_____

Appendix C Pretest and Posttests I and II: Prepositions Part II

Complete the text with the correct preposition (on, in, at, about, for, since, from, through, to, by, with) when necessary.

I live ___ a farm.
Pat is __ an island.
Let's have a barbecue ___ Independence Day.
I will see you ___ Christmas.
Come to my office ___ 234 Oxford street, first floor.
I am __ the bus now. I will call you later.
Buy everything which is ___ this list.
Max is __ the phone now.
Email me ___ alramsa@email.com.
This shirt comes ___ four different colors. (to indicate a shape, color or size)
You can pass the exam ___ preparing for it.
Can we go __ metro?
Patrick visits us ___ spring.
She has been living ____ London since 2007.
I am sure she did it ___ mistake.
You should send these books ___ mail.
You can pay ___ credit card or cash.
I met Sheila ___ chance in the shopping mall.
Hamlet was written ___ Shakespeare.

___ the end of the month.
Stay ___ my side and don't move, please.
I hate it when my mom yells ___ me.
You have to finish the report ___ 5 pm. (that is, no later than 5 pm)
His house is ____ the lake. (that is, near the lake).
I have English classes ___ the morning.
We always go out ___ night.
Are you laughing ___ me?
Mike is really good ___ playing the guitar.
The bag is ___ the car.
I forgot my wallet ___ in the taxi.

Appendix D Preposition Training—Part 1 (Both Groups Were Explained How to Use the Following Prepositions and Each Session Started by Reading the List Below)

We use **on** for dates and for holidays that last just one day:
On Independence Day/**on** Halloween/**on** Saint Patrick's Day
My birthday is **on** the 22 of March.
These shirts are **on** sale.
For big means of transport on which you can walk.
I am **on** the bus, **on** the train, **on** the ship.
For all the social media: **On** YouTube, **on** Instagram, **on** Facebook.
For the expressions **on** TV, **on** the radio and **on** the phone.
We use **at** before the number of an establishment (houses, clinic, pharmacy) + street name.
The supermarket is **at** 27 Oxford Street.
I live **at** 512 Conrad Road.
I never go out **at** night.
Before holidays that last longer than one day:
I will visit you **at** Christmas. We went to Malta **at** Easter.
With the verbs yell and laugh at someone:
He yells **at** you. He laughs **at** you.
With the expression be good **at**: Paul is good **at** singing.
We use **in** with parts of the day **in** the morning, **in** the afternoon, and **in** the evening.
With months: I was born **in** March. I will see you **in** September.
With years: He was born **in** 1997.
With small vehicles in which you cannot stand up: I am **in** the car, **in** the taxi.
We use **by** to describe how you travel somewhere: I went **by** car, **by** bus, **by** bike, **by** plane
We use by to mean "near". She lives **by** the train station. Her house is **by** the lake.
The means we pay something: We pay **by** credit card pay **by** check, but we pay **in** cash (this is not he means but the money itself)
To express 'how to do something': **by** + -ing form to describe how to do something:
By pressing this button, you turn on the alarm system. Then **by** entering the code 1256, you can switch it off.
To express that you do something without anyone else's help, or alone:
I made the cake **by** myself.
He came all **by** himself.
In the expressions:
By mistake and **by** chance.

Appendix E Preposition Training—Part 2 (Both Experimental and Control Groups Had the Following Text; However, the Experimental Group Sang Along as They Were Drilled)

The karaoke for this song is available online at:
https://www.youtube.com/watch?v=0_yVbr6kLhw (accessed on 30 March 2021)
On sale, **on** a farm, **on** the list . . . **on** an island and **on** vacation.
On the phone, **on** the radio and **on** TV: information

on YouTube **on** WhatsApp. **On** Mon**DAY**, **on** the 1st of March. **On** the 2 of January, **on** the third of January but **in** February.
On the WEEKend in, in the USA
At the weekEND **in** the UK, UK
On the Street in the USA
In the Street **in** the UK
But **AT** 30 Deira Street, is that ok?
By the lake, **in** July, **on** a bus here in Dubai
At seven o' clooooooock,
yeah, I'm good **at** walking **in** this block.
On the WEEKend **in, in** the USA
At the weekEND **in** the UK, UK
On the WEEKend . . . **in** the USA (oh uoh uoh . . .)
At the weekEND **in** the UK yeah
On the Street **in** the US
In the Street: **in** the UK
But AT 30 Deira Street, at 30 Deira street, here **in** Dubai.
On the **WEEK**end **in**, **in** the USA
At the weekEND **in** the UK, UK . . . (fade out)

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