How does Mozart’s music affect the reading comprehension of Iranian EFL Learners of both genders?

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Abstract
The present study was conducted to evaluate the effect of classical music (Mozart Sonata) on the reading comprehension performance of Iranian English students of different genders. To this end, the study put the reading comprehension of Iranian English students under focus for an academic semester (i.e. four months). The study’s participants belonged to English institutes of private sector (i.e. Dialog Language Institute) and were selected through convenient sample selection. The participants were required to learn reading passages and accordingly take two tests of reading comprehension in different conditions, namely, no music (quiet situation) and Mozart music (music situation). A set of comparisons were made between teaching reading comprehension passages with background music and without background music through a set of t-tests. The results of the study showed a significant difference between the performance of the group exposed to music and the performance of those who had not. The participants who were taught reading passages with background music outperformed their peers who had experienced learning passages without background music. Nonetheless, this research implied that the participants’ gender was not a determining factor at reading comprehension performance in music and non-music conditions of learning.

Keywords: Reading comprehension, Background music, Mozart music, Gender.
1. Introduction

The use of music as a tool by language teachers to teach foreign languages has been the center of attention to researchers for many years. Since positive comments concerning the effectiveness of music in language learning and performance are remarkably noticeable. Music like language is unique to the human species (Behar, 2005). The intention to use music in the classroom has often been met with ridicule and a cautionary statement that although students were enjoying class, they were not learning. Advice from other faculty was given to this researcher that music must be used rarely and with care since it serves as enjoyment only-to enrich the class-but should not rob too much time from necessary lessons. This attitude prevailed, due in part to the lack of empirical research using music in foreign language teaching. Stansell (2005) presented the idea that making music is seen historically to be as fundamental as the characteristically human activities like drawing and painting. For centuries it has been used to boost memory and learning.

Hence, music can soften the harsh atmosphere of the classroom and make new information meaningful and integrate education and entertainment known as edutainment. Background music can also be encouraged at home and it is the job of educators to “let parents know that music offers a sense of comfort and security to young children in this confusing world and creates a bond among members of the entire family” (Chazin & Neuschatz, 1990, p. 2). The purpose of this study was to examine how background music in the classroom would affect students’ internalization of written texts and enhances the productivity and motivation of EFL learners of both genders; therefore, this can be considered as bringing different realms such as music and cognition together for language learning to happen. In better words, this study has been an attempt to find empirically reasonable answers to the following research questions:

- Is there any significant difference between the result of reading comprehension of Iranian EFL learners under music and non-music conditions?
- Is there any significant difference between reading comprehension of male and female Iranian EFL learners under music condition?

2. Background

Until recently, research on the use of music and song as a pedagogical tool in the foreign language classroom has been rare. As Falioni (1993) stated, music’s use in the foreign language classroom has long been valued, but “all too often, music in the classroom has been relegated to recreation and entertainment status” (p. 98). She went on to state that a survey of the last two decades of journals for foreign language teachers shows only a few articles on the subject compared to multitudinous articles on other methodological ideas.

Howle (1989) said that lullabies are more than simple nursery songs, serving to set musical patterns to words the child hears but does not yet comprehend. This language-music structure provides an early formation of listening skills and language facility through cradle songs and nursery rhymes. The rhythm made the words memorable, as the child learned the prosody of his language. She believes this early memory bonding forms the basis of literary repertoire and future creativity. She admonishes both mothers and fathers to “seize every opportunity to sing and read to their children” (p. 22).
2.1 Language learning and music

An early method called the Audio-Singual Method by Kind (1980) used familiar songs to teach the English language. He contended that because the tunes are familiar, a satisfying feeling of recognition helps the learner overcome any fear and resistance to the unknown or fear that a student learning a second language may experience. Kind’s (ibid.) Audio-Singual Method has been developed and tested at Harvard University and other American and European schools. According to Kind, “It has been found that foreign languages can be taught more rapidly, more effectively and with greater recall through the use of music and song, rather than the mechanical classroom drills” (p. 49).

A program using songs specifically to teach grammatical points is Singing Grammar (Hancock, 1998). Although based on music, this second language course for learning English dissects each song according to its syntactic structures. Each unit has a song as the basis for the lesson; however, all the songs were unfamiliar to this researcher. Since the songs are not commonly heard in the culture, they do not serve as examples of authentic language use and may not provide catchy popular tunes. There are exercises to practice the grammar in the song, for pronunciation and vocabulary usage, as well as comprehension of the song’s meaning by checking the appropriate drawing. This text did have one unique feature, in that there is a variety of related games provided one for each unit, which the entire class may play.

2.2 Physiological Response to Music

Music has been shown to have physiological as well as pedagogical benefits. Physiological benefits include lowered anxiety, heart rate, pain, and blood pressure, as well as improved respiratory rate, recovery, and tension relief. Results indicated that the presence of background music significantly affected behavioral manifestations of tension in specific areas of the body. Background music also significantly affected verbalizations associated with pain in all subjects, as compared to the same setting with no background music. The behavioral measure supported patients’ verbal reports of music’s effectiveness in assisting relaxation. In a more recent report, Reilly (2000) compared the physiological recovery of patients after a medical procedure. She found that patients who volunteered to listen to music during surgery used post-operative medication 47% less often than patients who had not listened to music during surgery.

Stratton and Zalanowski (1984) also found significant correlations between the degree of relaxation and the liking for the music. Music preference may therefore be an influential factor that should be taken into consideration when providing music to students for relaxation purposes. The human heartbeat’s change in response to music may be due to the listener’s enjoyment of the music rather than the type of music.
3. Method

3.1 Participants

This study was conducted with four groups of male and female EFL learners (totally 80) at the age cohort of 12 to 15, with the same level of proficiency (already tested by ARCO TEOFL), studying at Dialog Language Institute (DLI), Shiraz, Iran. Each group consisted of 20 students who were selected through convenient sampling selection procedure. The participants were classified into two different classes of control and experimental; control group was taught reading passages in non-music condition while their peers were taught the same passages in music condition. They attended their classes 3 days a week for 15 sessions, and each session lasted for 90 minutes. These two groups had the same reading comprehension passages to cover. Each of the main classes of the study was categorized into two groups of male and female English learners to make it possible to focus on the participants’ genders as one of the study’s variables.

3.2 Materials and instruments

Sixteen passages were chosen from Reading Through Interaction: Book One by Hartman and Mantal (2004) to cover during the course of study, i.e. each session 1 reading passage. The researchers tried to select the passages which benefitted more understandable topics for students e.g., family reunion, travelling etc.

A DVD-player was employed to broadcast the music of Mozart at 50 decibel or dBA (a unit of sound pressure level) which was prescribed and adjusted by an audiologist. In this study, participants were exposed to Mozart’s Sonata for Two Pianos in D Major.

A researcher-made reading comprehension test was used at the end of the study to see if music had positively affected reading comprehension performance of the participants. Moreover, the test made it possible to see if participants of different genders had been meaningfully dissimilar on reading comprehension tasks. For constructing the test two passages were chosen and due multiple-choice were proposed. The test was piloted and its reliability (86%), difficulty and time-allocation were attested.

3.3 Procedure

After assigning the participants to main groups of control and experimental and sub-categories of males and females the study’s treatment was initiated. The reading passages were being taught within 40 minutes. Table 1 depicts the procedures employed for teaching reading comprehension passages for both groups of the study. The only difference was that the experimental group unlike the control one was exposed to Mozart’s music during the instructional activities.
Table 1. The activities done for teaching reading comprehension passages

<table>
<thead>
<tr>
<th>Instructional activities</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warming up on the passage: The teacher asks the students different questions concerning</td>
<td>5 minutes</td>
</tr>
<tr>
<td>the subject of the passage to draw their attention to what they are going to read.</td>
<td></td>
</tr>
<tr>
<td>Silent reading: The teacher gives the students enough time to read the passage silently.</td>
<td>10 minutes</td>
</tr>
<tr>
<td>Asking general questions about the passage: The teacher asks the students general</td>
<td>5 minutes</td>
</tr>
<tr>
<td>questions, concerning what they have read silently, to answer chorally, and subsequently</td>
<td></td>
</tr>
<tr>
<td>repeats the general questions to have individual students give complete answers.</td>
<td></td>
</tr>
<tr>
<td>Paraphrasing the passage: The teacher reads out the passage sentence by sentence, and</td>
<td>20 minutes</td>
</tr>
<tr>
<td>works on it by paraphrasing the paragraphs, asking detailed questions, and giving</td>
<td></td>
</tr>
<tr>
<td>synonyms/ antonyms for certain words in the passage.</td>
<td></td>
</tr>
<tr>
<td>Comprehension check: the comprehension of the text is evaluated through some multiple-</td>
<td>15 minutes</td>
</tr>
<tr>
<td>choice and true/false test items.</td>
<td></td>
</tr>
<tr>
<td>Assignment: The teacher wants the students to read the passage at home once more and</td>
<td>10 minutes</td>
</tr>
<tr>
<td>make as many questions as they can on it.</td>
<td></td>
</tr>
</tbody>
</table>

At the end of the semester two groups (control and experimental) were given the same reading comprehension test, but in different conditions. The control group took the test in a condition where no music was being played, whereas, the experimental group took it in a condition where music (Mozart Sonata) was being played. The time allowed to take the test was 30 minutes for each group. After the administration of the tests, all the papers were collected and corrected by the researchers.

4. Data analysis and discussion

4.1 Results

When the test was conducted and the needed data were gathered and entered into SPSS, an independent-samples t-test was employed to see if there was a difference between the performance of experimental and control participants on the reading comprehension test. Tables 2 and 3 show the results of the mean comparison.

Table 2. Descriptive statistics for the control and experimental groups of the study on the reading comprehension test

<table>
<thead>
<tr>
<th>Std. Error</th>
<th>Std. Deviation</th>
<th>Mean</th>
<th>N</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>.49271</td>
<td>2.69866</td>
<td>16.8000</td>
<td>40</td>
<td>The scores in quiet condition (non-music)</td>
</tr>
<tr>
<td>.24798</td>
<td>1.35824</td>
<td>17.5000</td>
<td>40</td>
<td>The scores in music condition (music)</td>
</tr>
</tbody>
</table>

Regarding the mean scores of the two groups (music and non-music), obviously, the music group has a better performance on the reading comprehension test than the non-music group (17.5 > 16.8). To see whether this difference had been statistically significant, an independent-samples t-test was also run with the following results.
Table 3. Mean comparison of two groups on the reading comprehension test

<table>
<thead>
<tr>
<th>Sig</th>
<th>T</th>
<th>df</th>
<th>Music group mean</th>
<th>Non music Group mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.03</td>
<td>-5.602</td>
<td>42.608</td>
<td>17.5000</td>
<td>16.7000</td>
</tr>
</tbody>
</table>

As it is discernible, the mean difference was significant (Sig. = 0.03 < 0.05). Since the present study investigated the effect of music (Mozart Sonata) both on teaching reading comprehension and on testing it, the results can be discussed in two respects of A) The contribution of music for providing a suitable environment for enhancing language internalization in general and B) The positive effect of music on reading comprehension performance i.e., reading comprehension tests in particular.

The experimental group of the study was taught reading comprehension passages in a music environment for three months, and then significantly outperformed the control group on the reading comprehension test. This improvement in the experimental group may have something to do with Krashen (1982) affective filter hypothesis in that when learners are in unfavorable situations they may develop an affective filter which in turn can reduce language internalization. Regarding the improving effect of music on the reading skill, the result of the present study showed consistency with Kelly's (1981) study in that music had a positive effect on the reading comprehension of the participants what can be observed in the works of Nicholson (1972), Movsesian (1967) and Khaghaninejad and Chahibakhsh (2015).

For answering the second research question, after tabulating the raw data, the performances of male and female experimental participants were put under investigation. In order to see if there was any difference between the performance of male and female experimental participants, a second independent-samples t-test was run to make the mean comparison possible.
Table 4. Descriptive statistics for the male and female experimental participants on reading comprehension test

<table>
<thead>
<tr>
<th>Std. Error</th>
<th>Std. Deviation</th>
<th>Mean</th>
<th>N</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>.30271</td>
<td>1.47866</td>
<td>16.67</td>
<td>15</td>
<td>The test mark for male (music)</td>
</tr>
<tr>
<td>.24798</td>
<td>1.11824</td>
<td>17.33</td>
<td>15</td>
<td>The test mark for female (music)</td>
</tr>
</tbody>
</table>

Table 5. Mean comparison of male and female participants on reading comprehension test

<table>
<thead>
<tr>
<th>Sig</th>
<th>T</th>
<th>df</th>
<th>Male group mean</th>
<th>Female Group mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.048</td>
<td>1.40</td>
<td>38.108</td>
<td>16.6700</td>
<td>17.2300</td>
</tr>
</tbody>
</table>

Table 5 reveals that although male and female participants in the two groups had gained different scores, the difference was not statistically significant. Therefore, the difference between males and females was not significant and accordingly gender was found to be an unimportant factor in doing reading comprehension tasks under music condition.

The researchers also designed a survey for the experimental participants to complete. One of the questions asked the student if they would like to listen to music while doing class activities. Another question asked if the student thinks music could motivate them to do their class activities. The researchers’ observations revealed the fact that it was evident that playing soft classical background music influences the students overall performance in the classroom in a tremendous way. The observations were made each day during the course of the three week study. The data collected from these observations is summarized in Tables 6 and 7. As discernible in Table 6, the positive attitude was attested toward music employment in most of instructional aspects.

Table 6. Data collected during researcher and classroom teacher observations

<table>
<thead>
<tr>
<th>Statements:</th>
<th>Agree</th>
<th>Disagree</th>
<th>Number of votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students would be motivated.</td>
<td>34</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Students would enter in AM smoothly.</td>
<td>29</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Students seem relaxed.</td>
<td>35</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Students would be on-task.</td>
<td>37</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Students would express positive behaviors.</td>
<td>34</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Students would be autonomous gradually.</td>
<td>37</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Table 7. Comments collected during the observations by the researcher on different sessions.
<table>
<thead>
<tr>
<th>Observation Dates</th>
<th>comments</th>
</tr>
</thead>
</table>
| 9/09/2015         | -The students seemed like they wanted to get their work done correctly.  
                  -The students were saying nice things to each other.  
                  -They seemed to all be on-task. They were trying to get it completed.  
                  -The students were offering to help one another and were going from one task to the next. |
| 9/12/2015         | -The students entered the classroom silently and got to work.  
                  -The students continued to work and as they finished one task they moved to the next one.  
                  -The students helped one another. |
| 9/14/2015         | -The students completed many tasks today.  
                  -The students in talking and had to be reminded what the procedures were. Then they got to work.  
                  -Some students encouraged others to do their work.  
                  -The class seemed happy while working. |
| 9/15/2015         | -The students were saying nice things.  
                  -The students seemed like they wanted to do a good job.  
                  -The students were working non-stop. |
| 9/18/2015         | -The students entered the class quietly.  
                  -The music makes the class feel relaxed and calm.  
                  -The children were staying on task as well as kept their voices down. |
| 9/19/2015         | -The students entered talking, but once they heard the music they calmed down and began working. |
| 9/20/2015         | -The students were very motivated. Once they finished one task they moved to the next.  
                  -The students were relaxed. They worked quietly and not in a hurry.  
                  -They entered the classroom quietly and started their morning work. |
| 9/21/2015         | -While reading independently two students sat beside each other in the classroom and one put his arm around the other while they sat and read. |
| 9/22/2015         | -The students did everything correctly. Good day! |
| 9/25/2015         | -Great day! The students did everything they needed to do, and did it correctly. |
| 9/26/2015         | -Great day! The relaxing music really keeps the mood of the class motivated and calm.  
                  -Some students gave compliments to others when they do a good job.  
                  -Hard working students! |
| 9/27/2015         | -The students speak very kindly to each other while working. The music makes the environment very relaxing and the children seem to be happy making the work more pleasant even when it is hard or the children get things incorrect. Awesome day! |
| 9/28/2015         | -The students are excited to see each other in the mornings and need a reminder to get quiet.  
                  -Once the students get on task they stay that way.  
                  -The students’ help each other unpack.  
                  -They say “Good Job” when someone does something well.  
                  -“It’s tremendous to see how the class has changed in such a positive way! I thank the teacher every day for his graduate study!!” |
| 9/29/2015         | -“As these past three weeks have progressed the students progressed in their ability to stay on task and work independently. The music really helps motivate the children to be calm and relaxed. It’s been an awesome three weeks!” – Classroom Teacher. |

In Table 7, one could see the day to day effects of having background music in the classroom. More specifically, pay close attention to the dates when looking at the comments.
As one could see as the study came to an end the results were astonishing. Each day the students were growing to the music and their outcomes confirm that the background music being implemented enhanced the quality of the participants learning experiences, as well as, had a positive effect on their social development. Their attitudes towards one another changed. Towards the end of the study the students were saying “Good Job” to students who were doing something well, they smiled a lot more — expressing positive behaviors and their willingness to help one another increased.

4.2 Discussion

The researcher set out to show that having background music in the classroom would have a positive impact on each student, as well as, the class; nevertheless, the Mozart music has no effect on gender. In other words, both male and female EFL learners equally benefitted from the background music played in the classroom.

As the findings of the study implied, English teachers can make use of music as an effective tool to facilitate students' language learning (reading comprehension, in particular). Practically, applying music to all the teaching sections of a language class session may not be possible, but applying it to the reading comprehension section would be beneficial (as the results of the present study showed), and can bring variety to the language class as well. The teachers would be very pleased with the results of the reading course while each student would improve their behaviors, motivations to learn, and their ability to stay on-task.

This research indicated that Mozart music would improve language learning; young students can concentrate and read better in this environment. Maybe one of the reasons of the positive effect of Mozart music on silent reading refers to Claerr and Gargan’s (1984) belief. They indicated that music processing units are stimulated in the right hemisphere of the brain, while the left one controls language processing. On the face of it, these two seemingly isolated tasks are performed independently, and they may not interfere with each other. Correspondingly, as the results of this study demonstrate, exposing students to music, especially Mozart music can improve their reading comprehension and facilitate their arriving at the meaning in their silent reading.

The thrust of the proposed study on the foreign language teaching field would change the input focus from spoken or read texts to a musically based focus. This method would provide students the opportunity to practice second/foreign language production through entertaining and culturally rich music. The introduction of songs in the classroom may aid in the retention of texts, while producing a mental repetition that may stimulate language acquisition.

5. Conclusion

The pedagogical potential of music in foreign languages is enormous and has only begun to be realized. As more experimentation takes place and better materials become available, music in all its forms—from opera to popular ballad—would probably become an integral part of any sophisticated foreign language instruction program (Leith, 1979).

Two groups of Iranian English students belonging to one English institute with the same level of proficiency were taught and tested reading comprehension under two different conditions (music and no-music) within one academic semester. The results of the study
showed a significant difference between the reading comprehension scores of the two groups regarding the effect of music. Therefore, the answer to the research question was positive, that is, there is a significant difference between the result of reading performance of the Iranian English students taught reading comprehension passages in a music condition (Mozart Sonata condition) and that of those taught them in a non-music condition. Nevertheless, as for the second hypothesis concerning the effect of gender, no statistically significant difference between male and female EFL learners was observed. Yet, background music proved to be efficient increasing concentration which led to improving reading comprehension of EFL learners. Results also showed that students reported greater enjoyment of class time with the addition of music to the curriculum. The significance of the present study would be to expand on the research regarding the music-text integration in relation to memory. This study also compared the occurrence of involuntary mental rehearsal, which may stimulate the language acquisition process by internal repetition of words and phrases.

5.1 Pedagogical implications
The following implications can be drawn from the study:

- Hence, the result of the present study seems to be beneficial for the students who wish to improve their silent reading because anyone who has been in large classes knows that complete silence is nearly impossible to achieve. Therefore, with the help of music, one can not only cover up the noise but also foster the learning.
- The results suggest that background music in the classroom has a positive effect not just for the individual, but for the class as a whole.
- Music can be used to nurture students and lead them to their highest potential as a learner. Music can lower the number of disturbances created by students because the inclusion of music keeps them engaged more of the time.
- Research has shown that students learn better and cooperate with each other more when there is music playing in the background while they are completing a task.
- Students would have higher test scores when music is included in instruction because they are more involved and engaged in the lesson; therefore, they are retaining more knowledge. The power of music in foreign language classrooms is invaluable; chants and songs can be used to serve as chunks of comprehensible input so that students can understand, create relevancy and retain the second/foreign language content.
References


