The Effect of Intersemiotic Translation on Vocabulary Learning
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Abstract
To study the significance of the recent convictions in the application of multimodal tools in teaching vocabularies, the present study sets out to investigate the extent of vocabulary learning within two different environments: audio-visual signs accompanied by intersemiotic translation (subtitles) versus audio-visual signs (no subtitles). Elementary level participants watched the two different versions of The Lorax, a famous cartoon in Iran. To evaluate the effect of each set of signs on their vocabulary learning, participants were required to answer three levels of questions. The obtained results were analysed using paired sample t-test. The results revealed a better performance of the group who received subtitles.

Keywords: Intersemiotic Translation; Vocabulary Learning; Multimodal Tools

1. Introduction
Culture is changing towards modality and mixture of media is invented and used in favour of daily needs; visual advertisements accompanied by words, texts mixed with visual means of communication in children’s picture books, motion pictures mixed with audio or even with written means of communication in cartoons or movies, are the least examples of the mixture of media or multimodality. Displaying one message in various forms has made an attention attracting field of study which incorporates the act of translating between different sign systems or, technically, ‘intersemiotic translation’ which involves translating from language to non-language (Torop, 2002). Audio-visual Translation and its various applications such as in audio description, subtitling, live subtitling, and dubbing have been investigated by various scholars. Its potential to be used in foreign language learning environment is one of such areas which is much regarded in investigating the effect of interlingual and interalingual subtitles on second language acquisition with regard to reading comprehension (Gillory, 1998; Bravo, 2008), listening comprehension (Danan, 2004; Caimi, 2006), oral production (Borras & Lafayette 1994), vocabulary recall

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Although lots of researches are done on the relationship between modality and improving different language learning skills, the number of studies done on the effect of modality on vocabulary learning are rare. However, in the following, the most relevant findings to the present study are to be briefly overviewed.

In the study conducted by Syderenko (2010), vocabulary acquisition via different media was investigated. What the research suggests is that for beginner learners 1) subtitles can be useful in recognition of written word forms, while audio facilitates recognition of aural word forms, 2) vocabulary learning can occur more easily when video is shown with both audio and subtitles rather than audio or subtitles per se, and 3) the participants paid most attention firstly to subtitles then to images, and lastly to audio, indicating the images to be the most helpful one. Syndorenko (2010) believed that the subtitled video whose content is well-supported by visual images can be a useful type of input to improve the students' vocabulary knowledge especially for beginners. Consequently, she concluded that each specific media may act in a particular way to improve a unique language skill.

Via a quasi-experimental research, Lertola (2012) investigated the effect of subtitling on incidental foreign language vocabulary learning. Based on her research question she formulated two hypotheses: 1) subtitled and non-subtitled conditions will result in retention of new L2 vocabulary compared to the pre-task performance. 2) The subtitling condition will lead to more significant L2 incidental vocabulary acquisition compared to the non-subtitling condition. The results showed that the first hypothesis was confirmed and the second one was confirmed just in the case of post-delayed point.

Concerning the most useful media for language learners, most of the studies done in this regard indicate that in comparison with using video and audio (VA), presenting video, audio, and subtitle (VAS) leads to a better performance especially on listening and reading skills (e.g., Baltova, 1999; Danan, 2004; Markham, 2001).

Investigating the types of modality (video, audio, or subtitle), to which L2 learners may pay attention when simultaneously encountered with different types of stimuli, has also been a field of interest. For instance, a study on high intermediate to advanced European and Arabic college students who watched subtitled British TV programs over nine weeks period, indicated that European students found subtitles useful and not distracting while the Arab students mentioned that they could not pay attention to the audio part because of the presence of the fast changing subtitles (Vanderplank, 1988 as cited in Syndorenko, 2010). Vanderplank (1988) concluded that in comparison with Arab students, European students are used to subtitles while other scholars as Winke, Gass, and Sydorenko (2010) believed that the difference between L1 and L2 scripts might be an underlying factor. Another effective element, according to Taylor (2005), is the level of language proficiency which is a factor in successfully using multimodals in language learning atmosphere. He indicates that for the beginner college learners of Spanish with little exposure to the language, subtitles were found to be distracting while more experienced learners didn’t find it as such. Vanderplank (1988) and Taylor (2005) believed that learners can “develop” strategies for dealing with different types of input when exposed to subtitled videos.

One noteworthy point to be considered about the above mentioned efforts is that all of mentioned scholars made use of authentic means of teaching rather than educational ones. Using authentic vs. educational multimedia as pedagogical means in the classroom not only is supported since it leads to target culture exposure and enhancement of motivating factors in learners (Brinton, 2001) but also is useful source of vocabulary learning (Jones, 2004; Plass, Chun, Mayer, & Leutner, 2003).

Among various authentic audio-visual sources of language input, cartoons are among the most pedagogic and valuable sources, which can be used as useful means of improving the learning atmosphere (Bahrani & Soltani, 2011). Clark (2000) believed that cartoons can keep the learners’ attention and present information in a stress-free atmosphere. Moreover, cartoons can improve thinking process and discussion skills (Clark, 2000). Additionally, exposure to cartoons can create low affective filter atmosphere for learners by improving their confidence and
motivation to answer the questions more comprehensively (Doring, 2002). This is in line with the study conducted by Rule and Ague (2005) which indicates that cartoons are preferred by language learners because they create low affective filter atmosphere which causes high degree of motivation.

The importance of the investigating the pedagogical effect of cartoon as an authentic audio-visual source on learners’ vocabulary learning is a point of departure to examine the effect of both subtitled and non-subtitled videos on vocabulary learning of the elementary EFL Iranian learners, not considered by researchers before. To fill the gap, the present study intended to answer the following research question: Does the subtitled cartoon lead to a more significant L2 vocabulary learning compared to the non-subtitled one? Based on the mentioned research question, the following null hypothesis was formulated as well: There is no difference between the performances of participants viewing the subtitled-video or the non-subtitled one with regard to their vocabulary learning.

2. Method

The participants were 32 Iranian elementary English learners at language institute. They were 16 females and 16 males. After taking a ‘Group Equality Test’ (appendix A) to determine the participants’ equality in written and aural vocabulary learning, each two participants were paired according to their obtained scores and randomly grouped into two conditions: video with audio and subtitles (VAS), video with audio (VA).

2.1. Group Equality Test

“Group Equality Test” phase of the study was preceded by some explanations in a warm up session, which took about 5 minutes. All participants read a text about different professions (appendix A.1) and listened to another text about animals (appendix A.2). Both reading and listening texts were accompanied by pictures. While after reading the text students took a written Recognition (mixed with non-words) and Translation Test (appendix A.3), they took an aural Recognition (mixed with non-words) and Translation Test after the listening one (appendix A.4). On the Recognition Test, the participants had to mark the words which appeared in the texts, whether read or heard. The task in the Translation Tests was to translate the heard or read words from English into Persian. The third part in both written and aural tests was a four-part scale (appendix A5) and the students were asked to choose one scale for each of the target words: whether (1) never encountered it before, (2) encountered it before, (3) knew its meaning, or (4) used it. This scale was used to omit the known words as marked by the students.

2.2. Procedures

According to the ‘Group Equality Test’, each of the two paired students was randomly put into VA or VAS groups; as a result, 16 VA-VAS pairs were made. They all watched the film in accordance with the group into which they were put. After watching each video, the participants encountered three comprehension true/false questions (appendix B), a written and aural recognition section, a written and aural translation section, and a word knowledge scale. The Translation Tests always came after the recognition ones. Finally, students completed a questionnaire consisted of 6 open-ended questions as well as 6 multiple-choice questions related to participants’ attitudes and options about watching video with or without subtitles (appendix C).

2.3. Material

The video clips, about 2 minutes long, was an extract from “The Lorax” which is a well-known animation movie among the Iranian young. The clip contained 8 target words that could be learned from videos since each word was accompanied with its related image. Two versions of the video were prepared: one with subtitles (intersemiotic translation) for the VAS group the other without any subtitles for the VA group.

2.4. Instruments

2.4.1. Comprehension Test

Three general true-false questions were posed to check the participants’ general understanding of the movie’s theme.
2.4.2. Recognition Test

Recognition Test, according to Sydorenko (2010), was formed because the ability of recognizing the new word is the primary step in vocabulary learning. It contained 8 target words and 4 non-words. In the test, half of the target and non-words were in written and the rest were in aural form. It was scored in accordance with what will be mentioned in ‘Group Equality Test’ below.

2.4.3. Translation Test

The same words as appeared in Recognition Test, excluding non-words, half written and half aural, were presented in this section. It was scored as will be mentioned in ‘Group Equality Test’ below.

2.4.4. Word Knowledge Scale

Word Knowledge Scale was used to exclude the known words, as marked by the students. Its application is the same as what will be mentioned in ‘Group Equality Test’ below.

2.4.5. Final Questionnaire

The questionnaire used in this phase of study consisted of six open-ended and six multiple choice questions related to participants’ attitudes and options about watching cartoons with or without subtitles. The questions were in Persian for the ease of students’ understanding. The questionnaire included general questions as:

1. Did you learn any new words through watching cartoons? If yes, how?
2. Which modality was of help to you to understand the cartoon?

The participants’ answers were a great help to analyse the obtained results from previous phases.

3. Results

To analyse the collected data, some strategies consisting quantitative and qualitative methods were used. To score the ‘Group Equality Test’, the Word Knowledge Scale was regarded for both Recognition and Translation sections. Written and aural Recognition Tests were scored by means of the following equation (Sydorenko, 2010), in which the non-words were also regarded:

\[
\text{Recognized new words + Unselected non - words} \over \text{All new words + all non - words}
\]

In addition, in the case of aural and written Translation Tests, each correctly translated word into Persian was scored “1”; also, the scores obtained from the totality of the reading text were added to the totality of the scores obtained from the aural text for each student. In the end, each two students with near or the same scores were paired. Identifying the participants’ equality in written and aural vocabulary learning based on their obtained scores in ‘Group Equality Test’, the next phase of data analysis concentrated on obtaining participants’ scores in the main test, computed via the same scoring procedures. To examine if there is any significant difference between the performance of the participants in the main test in two groups of VA and VAS, the paired sample t-test was utilized, the results of which are presented as follows:
Table 1. Result of the t-test between two groups of VAS (B1) and VA (B2)

<table>
<thead>
<tr>
<th>Paired T-Test and CI: B1; B2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paired T for B1 - B2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>StdDev</th>
<th>SE Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>16</td>
<td>4.131</td>
<td>1.323</td>
<td>0.331</td>
</tr>
<tr>
<td>B2</td>
<td>16</td>
<td>5.194</td>
<td>1.279</td>
<td>0.320</td>
</tr>
<tr>
<td>Difference</td>
<td>16</td>
<td>-1.063</td>
<td>1.438</td>
<td>0.359</td>
</tr>
</tbody>
</table>

95% CI for mean difference: [-1.823; -0.296]
T-test of mean difference = 0 (vs not = 0): T-Value = -2.96 P-Value = 0.010

As illustrated in Table 1, the P-Value (0.010) is smaller than the critical value at the 0.05 level of significance, so there is a significant difference between the performance of participants on the VA and VAS groups; as a result, the null hypothesis was rejected. Hence, the analysis of data revealed that the performance of the participants in the VA group was significantly better than that of VAS group.

3. Discussion

Regarding the research question posed in this study, whether the subtitled cartoon leads to a more significant L2 vocabulary learning compared to the non-subtitled one, the obtained results through T-test rejected the formulated null hypothesis. Therefore, a significant difference was found between the performance of participants in the VA and VAS groups and it can be claimed that the performance of VA group was better than that of VAS group. Although the methodology used in this study was similar to that of Sydorenko’s (2010), the present outcome did not support what she gained. However, the result of this study was in agreement with the obtained results from Vanderplank’s (1988, in Sydorenko, 2010) research on Arab participants in the case of subtitles which were distracting for the participants. Most of the researches in this field suggested using subtitles in favour of enhancing language learning skills (e.g. Baltova, 1999; Danan, 2004; Markham, 2001), but in the present study the obtained results were different. The participants in the VA group showed a better performance in comparison with VAS group. Analytical observations of the questionnaire revealed that although 50% of participants who were in the VAS group always agreed to use and actually used the subtitles in their understanding procedure, the results indicated the reverse outcome and the VA group obtained better scores. The qualitative analysis of questionnaire also showed that 45.5% of participants reported that the images were of great help in understanding the theme of the video.

Furthermore, results obtained through the questionnaire revealed that the most problematic point for the 50% of participants was the audio part. Nevertheless, 30% of participants had difficulty with the speed of changing the subtitles which is in agreement with the Vanderplank’s (1988, in Syndorenko, 2010) research results. It can be concluded that VAS participants were distracted by reading the subtitles besides the listening problem they had and the speed of changing the subtitles they encountered with.

4. Conclusion

For the ease of students’ vocabulary learning, the gateway into language acquisition, modality is the most common attended strategy in the rapid changing culture. The effect of various types of modality on vocabulary learning has been investigated by different scholars. Although all of their gained results agreed with using subtitles in favour of vocabulary learning, outcome of the present study did not support it. The present result indicated that the VA participants performed better in comparison with the VAS group. As mentioned in the discussion part, factors such as low reading speed, level of language proficiency, and the distracting effects of subtitles might be effective in the related results of the research. The present study had its own limitations specially in collecting relevant data from language institutes which embraced a few number of students and had their particular managing rules. Therefore, the result of this study needs to be generalized with more participants. The pedagogical implications of this study may be applicable for language classroom settings and instructors.
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References


Appendices

Appendix A. Group Equality Test

或者说你是哪一种？

Kate: What do you think you’ll be in the future?

Jenny: I think I’ll be a surgeon. I am good at science. What about you?

Kate: I’ll be a hair stylist. I love styling my hair.

Jenny: what about our friends Christine, John and Peter? What do you think they’ll be?

Kate: I think Christine will be a movie director. She loves movies.

John will be a goal keeper. He loves football.
Jenny: let me guess what Peter will be. He will be a designer. He loves sewing.
Kate: Wow! We will have amazing future.

Note: The pictures of underlined words were shown to the participants as well.

A.2. Listening Text: Animals

A-This is interesting.
B-What is?
A-People walk as fast as an elephant.
B-Which animal is faster? A rhinoceros or a polar bear?
A- The polar bear is probably faster.
B-wrong! A rhinoceros is as fast as a polar bear.
A-Ok. Is a skunk as fast as a squirrel?
B-a skunk is probably faster.
A-You’re wrong! A squirrel is faster.

Note: The pictures of underlined words were shown to the participants as well.

A.3. Recognition and Translation Tests related to the Reading Text

Check the words you saw in the text.

1. Surgeon
2. Movie director
3. Pai
4. Goal keeper
5. salmun
6. Hair stylist
7. Designer

Translate the following words into Persian.

1. Surgeon
2. Movie director
3. Pai
4. Goal keeper
5. salmun
6. Hair stylist
7. Designer

A.4. Recognition and Translation Tests related to the listening Text

Mark the words you heard in the audio text.

1. nomeneph
2. Polar bear
3. Squirrel
4. Skunk
5. Rhinoceros
6. Topple
7. Elephant

Translate the words you heard into Persian.
8. nomeneph
9. Polar bear
10. Squirrel
11. Skunk
12. Rhinoceros
13. Topple
14. Elephant

Note: 1. The words in the last two sections above, were omitted in the test to which students answered.
2. Translation test was not on the same page as the recognition test.

A.5. Four-part scale

Choose one choice for each of the following words.

<table>
<thead>
<tr>
<th>Never encountered it (1)</th>
<th>Encountered it (2)</th>
<th>Know its meaning (3)</th>
<th>Use it (4)</th>
</tr>
</thead>
</table>

1. Surgeon
2. Movie director
3. Pai
4. Goal keeper
5. salmun
6. Hair stylist
7. Designer

Note: The related words in the listening text appeared in the same manner in the “four-part scale”.

Appendix B. Comprehension questions.

Mark the following sentences with T, if correct, and F, if wrong.

............ Ted likes real trees.
............ It is easy for Ted to go outside of the town.
............ Ted’s mother likes real trees.

Appendix C

Questions used in open-ended questionnaire:

1. Did you like watching English videos? Yes ___ No ___ Why?
2. Did you learn any new words when watching the videos? Yes ___ No ___
If yes, describe what you did to figure out the meanings of new words.
3. For each of the following statements, please circle the option that applies to you
   a. When watching the videos, I was listening to the sound
b. When watching the videos, I was reading the captions
All the time  Most of the time  Half of the time  Some of the time  Not at all

c. When watching the videos, I was paying attention to the visual images
All the time  Most of the time  Half of the time  Some of the time  Not at all

4. What were the most difficult things for you when watching the videos?

5. What would have helped you to understand the videos better?

6. What was difficult while you were doing the exercises after the videos?

7. Please rate the following statements on a scale from 5 to 1.

   a. “The captions helped me to understand the videos.”
   Strongly agree  strongly disagree
   1  2  3  4  5

   b. “The audio helped me to understand the videos.”
   Strongly agree  strongly disagree
   1  2  3  4  5

   c. “The visual images helped me to understand the videos.”
   Strongly agree  strongly disagree
   1  2  3  4  5

8. If you have more comments, please write them here.