

## Effects of Captioning Video Clips on Vocabulary Learning Among ESL Learners

**Elias Bensalem**

Northern Border University, Saudi Arabia  
ebsalem@gmail.com

### Abstract

*This study examines the impact of two captioning types (i.e., on-screen text in the same language as the video) on beginning-level university ESL students' incidental vocabulary learning. A total of 70 ESL students participated in the study. They watched three English video clips. Participants were randomly assigned to one of three listening treatments. The first group (n = 24) watched fully-captioned video clips; the second group (n = 23) watched the video clips with keyword captions; the control group (n = 23) watched the video clips without captions. All groups completed vocabulary tests in written and oral formats to test their vocabulary word recognition and meaning recall. The results revealed that there were no significant differences between the captioned groups and the non-captioned group on word recognition and translation test scores. Recommendations for various ways of using captions to enhance the vocabulary acquisition of ESL students whose native language has a non-Roman script are included.*

**Keywords:** Video, Captions, Vocabulary, Multimedia, CALL, ESL.

## **Introduction**

Listening is one of the major sources of second language (L2) acquisition (Rost, 2002). However, it remains a challenging skill for many foreign language learners because communication with others in the target language depends on listening skills. Therefore, educators try to assign students video materials to help them improve their abilities to hear the intricate sounds, articulations, and content (Jones, 2003). Some of these materials can be enhanced with captions, which are increasingly used in foreign language classes because of the recent accessibility to video media platforms such as DVD, YouTube, etc. (Winke et al., 2010). These pedagogical tools can help improve listening and reading comprehension skills (Borras & Lafayette, 1994; Danan, 2004; Garza, 1991; Markham & Peter, 2003) and facilitate vocabulary learning (Markham, 1999; Winke et al., 2010). Most of the prior research favors the importance of captioning in foreign language class as captions bring more native voices into the learning environment and help learners integrate written and aural information in support of language acquisition (Winke et al., 2010). However, there is no consensus among researchers about which type of captioning is more effective in aiding vocabulary learning. Studies that used only keyword captions instead of full captions have not yielded conclusive results (Guillory, 1998; Montero Perez et al., 2014). The need to explore variation in captioning prompted some researchers (Montero Perez et al., 2014) to examine the impact of fully captioned clips with highlighted keywords on the incidental vocabulary acquisition of target words and comprehension. The participants of this study were Flemish undergraduate students learning French as a second language. The results revealed that captioned groups significantly outperformed the non-captioned group on form recognition and clip association. Furthermore, the keyword captioning and full captioning with highlighted keywords groups outperformed the control group on meaning recognition. However, captioning did not affect meaning recall. Thus, the recurring question regarding which type of captioning provides more assistance for students' vocabulary acquisition remains unanswered. The bulk of the research conducted on captioning involved native speakers of Roman script languages, namely French and Spanish. There has been very little, if any, empirical research conducted on learners whose native language has a Non-Roman script based on the expectation that the distance between the L1 and L2 affects the way learners use captions (Winke et al., 2010). The purpose of the current study is to help fill the void in caption research by investigating the impact of two captioning types: full captioning and keyword captioning on Arabic university-level ESL students' incidental vocabulary learning.

### **1. Literature Review**

Many of the studies that investigated captioning starting in the 1990s looked at whether captioned video is more beneficial than non-captioned video. Most of them focused on how captions impacted learners' performance on comprehension tests (e.g., Garza, 1991; Guillory, 1998; Markham, 1993, 1999; Montero Perez et al., 2013) and vocabulary tests (e.g., Baltova, 1999; Danan, 1992; Markham, 1999; Montero Perez et al., 2014; Neuman & Koskinen, 1992). Generally, these studies reported the benefits of captions. This literature review focuses on the impact of captions on vocabulary learning.

Several studies have investigated the effects of captioning on word recognition and productive skills such as meaning recall. In an earlier study, Neuman & Koskinen (1992) examined the impact of captioned videos on advanced EFL students. The results showed that students who viewed fully captioned video had higher scores in vocabulary recognition and acquisition exercises than students who viewed captionless video segments. In another study that involved advanced, university level ESL students, Markham (1999) examined the effects of captioning on aural word recognition skills. Students in the experimental group watched two short videotapes with full captions, while the control group watched the same videotapes without captions. The results of the oral multiple-choice tests revealed that the availability of captions significantly improved the ESL students' ability to recognize words on the videotapes.

Another study that documented the positive impact of captioning on learning new vocabulary was conducted by Danan (2006). She examined the effect of three viewing modes (L2 audio only, standard subtitling with English subtitles), and reversed subtitling (English dialogue with French titles) on vocabulary recall for beginning and intermediate French college students. The participants watched a five-minute video segment of a French program. The findings revealed that students who had access to reversed subtitling (captions) achieved the best results. They were able to recall more words based on the results of translation tests. Danan (2006) argues that students will be able to recognize the same items even when presented in new contexts.

In a study that involved high school level French learners, Baltova (1999) investigated the effects of captions on the learning and retention of content and vocabulary from watching a short video. A sample of 93 Canadian high schoolers learning French as a second language watched an authentic video in one of three conditions. The first group (reversed) watched the video with English audio and French subtitles. The second group (bimodal) watched the video with French audio and French captions. The control group watched the video without any captions. Since the selected video excerpt was deemed too fast (about 160 words per minute), Baltova (1999) included important keywords, which represented 50% of the total script for her lower-level participants. The results showed that the bimodal group achieved significantly higher scores on a C-Cloze test than the other two groups. Baltova (1999) reported that on a post-treatment questionnaire, participants of the bimodal group had a positive reaction to the French keyword captions as they felt that it assisted them in understanding the content of the video, and also in completing the tests.

A unique experiment was conducted by Winke et al. (2010) examining the impact of captioning during video-based listening activities on second and fourth-year learners of Arabic, Chinese, Spanish, and Russian. A sample of twenty-six students watched three captioned, and three captionless short videos. The results revealed that captioning was more effective than no captioning in terms of vocabulary recognition and overall comprehension. The authors reported that captions helped learners with different levels of language proficiency to improve their input processing and reinforced their previous knowledge.

While the previous studies used either aural or written tests, Sydorenko (2010) combined both test formats in her research that aimed at assessing the effects of different types of input (video, audio, and captions) on form recognition and meaning recall. The study involved second-

semester learners of Russian who watched three short video clips from a popular Russian comedy series. She found that captions significantly helped learners on written form recognition tests. However, the video-only group achieved a higher score than the captioning group on an aural form recognition test. Sydorenko (2010) reported that participants who watched the videos with audio and captions acquired more word meaning than participants who watched video with audio only. She suggests that her findings supported previous research on captions (Baltova, 1999; Danan, 1992; Neuman & Koskinen, 1992).

In spite of the advantages of captions, there was a concern among some researchers about the amount of reading required on the part of learners. This was a problem addressed by Garza (1991) and Winke et al., (2010) who suggested reducing the amount of textual density in the captioning line by exploring the potential of keyword captioned video. One of the advantages of using keywords is that they facilitate information processing. Conversely, verbatim captioning leaves little space in working memory to process visual information in a video (Reese, 1984). Limited space does not help learners adequately process information because adults do not attend to visuals until the captions have been read (e.g., Rayner, Rotello, Stewart, Keir, & Duffy, 2001; Underwood, Jebbett, & Roberts, 2004). A second advantage of keyword captioning is that it facilitates word boundary recognition, especially for low-proficiency learners. This claim was supported by the findings of Guillory (1998), who revealed that 68.66% of the respondents of the keyword caption group (receiving 14% of the full captioning text) felt that keywords helped them identify word boundaries. Conversely, only 38.5% of the respondents in the full-script group thought the full captions assisted them in identifying word boundaries.

One of the very few empirical studies that examined the impact of keywords captioning on vocabulary acquisition was conducted by Montero Perez et al. (2014). They compared the effectiveness of three captioning types (full captions, keyword captions, full captions with highlighted keywords) on students' incidental learning of 17 target words and listening comprehension. The participants were 133 Flemish undergraduate students, who watched three French clips under one of the four conditions: full captions; keyword captions; full captions with highlighted keywords; or no captioning. The findings revealed that the three captioning groups outperformed the no-captioning group on form recognition and clip association. However, only the keyword captioning and full captioning with highlighted keywords groups outperformed the control group on meaning recognition. Regarding meaning recall, no significant differences were found between the scores of captioning groups and the no-captioning group. These findings are in line with previous research that indicated that captions enhance written form and recognition (e.g., Neuman & Koskinen, 1992; Sydorenko, 2010). Contrary to what the authors hypothesized, the participants in all captioning conditions achieved similar scores on the form recognition and clip association test. There was no evidence of the superiority of any captioning group over another in terms of helping learners achieve higher vocabulary scores.

The effectiveness of keyword captioning for improving vocabulary learning has not been sufficiently researched. To the authors' best knowledge, no other study was conducted to examine the impact of keyword captioning on vocabulary. There is a need to compare the

effectiveness of keyword captions to full captions for incidental vocabulary learning among learners whose language has a non-Roman script.

## **2. Research Questions**

The current study raises the following research questions:

- 1) Does the type of video captioning (full captions and keyword captions) have a differential effect on ESL students' incidental learning of target vocabulary words, as measured by oral and written word recognition tests?
- 2) Does the type of video captioning (full captions and keyword captions) have a differential effect on ESL students' incidental learning of target vocabulary words, as measured by oral and written meaning recall tests?
- 3) Does the type of video captioning (full captions and keyword captions) have a differential effect on ESL students' incidental overall learning of new vocabulary?

## **3. Hypotheses**

- 1a. The full captions (FC) and keywords (KC) groups will outperform the no-captioning group on oral and written word recognition tests based on the previous research on captioned video (NC).
- 1b. There will be no difference between FC and KC on oral and written word recognition test scores as reported by an earlier study.
- 2a. The FC group and KC groups will outperform the NC group on oral and written meaning recall tests based on the previous research on captioned video.
- 2b. There will be no difference between FC and KC on oral and written meaning recall tests as reported by an earlier study.
- 3a. The FC group and KC groups will outperform the NC group on overall vocabulary learning based on the previous research on captioned video.
- 3b. There will be no difference between FC and KC on overall vocabulary learning as reported by an earlier study.

## **4. Methods**

### **4.1. Participants**

Seventy university-level ESL students (40 males, 30 females) participated in the study. They are all native speakers of Arabic enrolled at a public university in the Arabian Gulf region. All students take English courses as part of their major. Courses cover language skills: reading, listening, speaking and writing. Classes have an average number of 20 students. Participants were informed that taking part in the study is optional and that their test scores will not affect their grades. Students had an elementary level of English as measured by the English department. Students were randomly assigned to one of the following groups: full captioning (FC), keyword captioning (KC), and no captioning (NC).

## **4.2. Materials**

### **4.2.1. Video clips**

The materials consisted of three short video clips (each 2 to 3 minutes long) from educational programs. Lavery (1984) recommends that video activities for second or foreign language learners should range between two and four minutes in length. The video clips presented information about famous national parks in the US. The narrator described one park in each video. The three video clips were of approximate equal difficulty based on the caption speed. The overall average words per minute were 101. Captions were added using video editing software. Two experienced university-level ESL instructors were consulted in the selection of the video clips. They thought the clips were appropriate for the target learners. Three ESL instructors who were teaching in the same department where the study took place served as keyword selectors. Keywords refer to words that are important for understanding a given sentence. A set of keywords that represented 31% of the full script was generated. Previous studies used keyword rates that ranged between 30 and 50% of the full script of videos (e.g., Baltova, 1999; Rooney, 2014).

## **4.3. Instruments**

The tests used in this study were evaluated by experienced foreign language teachers in order to validate their suitability for measuring the students' vocabulary knowledge. Necessary adjustments were made to tests after piloting the study. To examine the test's internal consistency, Cronbach's alpha was calculated. The alpha value was .797, which is considered adequate.

### **4.3.1. Recognition test**

A vocabulary recognition test (see Appendix A) was used to measure recognition of lexical forms, which is deemed to be the first step in vocabulary learning (Sydorenko, 2010). The test assessed participants' ability to recognize TWs from words that were not in the video clips. Non-target words were non-words selected from a database compiled by Rastle et al. (2002). This study adopted the recognition test developed by Sydorenko (2010). This test was divided into two parts: written and oral. Half of the TWs and half of the non-words were presented in the oral portion of the test. The second half of TWs and non-words were presented in the written portion of the test. The inclusion of non-words in the test was meant to control for guessing. One point was awarded for each correct answer. The total score of the recognition test combines both the oral and written section.

### **4.3.2. Translation Test**

The purpose of this test was to measure participants' ability to recall the meaning of TWs. Meaning recall is another aspect of vocabulary knowledge that is different from word recognition. Recognition and translation of vocabulary are different skills (Nation, 2001). Recognition involves noticing the forms in the input, while translation indicates whether language learners have understood and internalized the meaning of the forms (Pulido, 2004). Obviously, the production of meaning requires deeper processing since learners have to first deduce the meaning of the form and then recall it when they take the translation test (Sydorenko, 2010). Previous studies used translation tests as a tool to measure vocabulary recall (e.g.,

Sydorenko, 2010; Winke et al., 2010; Montero Perez et al., 2013, 2014). The exact format of the translation test used by Sydorenko (2010) was adopted in this study, and is divided into two parts: oral and written. Half of the TWs were presented orally, the other half in a written form. The participants' task was to provide an Arabic translation for each of the TWs. A native speaker of Arabic graded all translation tests. One point was awarded for each correct translation. The total score of the translation test combined both the oral and written section.

#### 4.4. Procedures

The study took place in a language lab during class time. The lab was equipped with software that allowed the researcher to project the video clips to each individual workstation. After being briefed about the nature of their tasks, participants watched the three video clips from their computer screen. The control group (NC) watched video clips without captions. The second group watched video clips with full captioning (FC). The third group watched video clips that included key word captioning (KC). All participants watched each video clip twice before completing aural and written recognition tests followed by the aural and written translation tests. Then all participants completed a prior knowledge vocabulary. This test was not given prior to watching videos in order to make sure participants would not pay special attention to the TWs. The same procedure was followed by previous studies (e.g., Al-Seghayer, 2001; Bird & Williams, 2002; Winke et al., 2010).

#### 4.5. Data Analysis

A one-way analysis of variance (ANOVA) was conducted for each of the first two questions. The dependent variable was the vocabulary test scores and the independent variable was the type of video clips (FC, KC, and NC).

### 5. Results

#### 5.1. Research Question 1

The means and standard deviations for each vocabulary test are reported in Table 1.

A one-way ANOVA was calculated on participants' oral and written vocabulary recognition tests. The analysis yielded no significant differences between groups (FC, KC, and NC) on the oral recognition test,  $F(2, 67) = .687, p = .507$ . Similarly, the results of a one-way ANOVA on the written vocabulary recognition test showed no significant main effect of test,  $F(2, 67) = .617, p = .542$ . There was also no significant difference between overall score of vocabulary recognition test scores (i.e., combined written and aural) for each group,  $F(2, 67) = .854, p = .430$ . This result indicates that the availability of captions had no significant effect on participants' ability to achieve higher scores on vocabulary recognition tests.

Table 1

*Descriptive Statistics on Vocabulary Tests*

	<i>FC (N = 24)</i>		<i>KC (N = 23)</i>		<i>NC (N = 23)</i>		<i>All Groups</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Written recognition	3.92	1.61	3.43	1.56	3.52	1.59	3.63	1.58

Aural recognition	3.29	1.12	2.91	1.35	3.30	1.40	3.17	1.29
Written translation	1.46	2.15	1.22	1.95	1.17	1.73	1.29	1.93
Aural translation	1.83	2.30	1.70	2.14	1.91	2.20	1.81	2.18

## 5.2. Research Question 2

Concerning the second research question, a one-way ANOVA was calculated on participants' oral and written meaning recall tests. The analysis yielded no significant differences between groups (FC, KC, and NC) on the oral meaning recall test,  $F(2, 67) = .057, p = .945$ . The results of a one-way ANOVA on the written meaning recall test showed no significant main effect of test,  $F(2, 67) = .146, p = .865$ . The difference between the overall score of meaning recall test scores (i.e., combined written and aural) for each group is not significant,  $F(2, 67) = .017, p = .983$ . This indicates that the availability of captions had no significant effect on participants' ability to recall the meaning of a larger number of new words.

### 5.2.3 Research Question 3

With regard to the third research question, a one-way ANOVA was calculated on participants' overall vocabulary tests (all four tests combined). The analysis yielded no significant differences between groups (FC, KC, and NC),  $F(2, 67) = .089, p = .915$ .

## 6. Discussion

The purpose of this study was to explore which type of captions (FC or KC) would boost more elementary-level ESL students' listening ability to recognize and recall the meaning of words in video clips. The results suggest that no significant difference was found between fully captioned clips and keyword captioned clips. Furthermore, even though participants who had access to captions outperformed participants who did not have access to captions, the difference between the vocabulary test scores was not significant. These results were unexpected because it was hypothesized that the availability of captions would result in greater vocabulary learning based on previous research. These findings are discussed below.

### 6.1. Research Question 1

Does the type of video captioning (full captions and keyword captions) have a differential effect on ESL students' incidental learning of target vocabulary words, as measured by oral and written word recognition tests?

The analyses indicated that all participants achieved similar scores on both oral and written word recognition tests. FC and KC groups scored only slightly, but not significantly, higher than the NC group. These results were unexpected because it was hypothesized that the availability of captions would help FC and KC groups to outperform NC on the vocabulary recognition tests. The results of the current study are not in line with Sydorenko's findings for beginning L2 learners of Russian (2010). She found that groups that had access to captions scored significantly higher on written than on aural word recognition tests, while the group that had no access to captions scored higher on aural than on written recognition vocabulary tests. The



findings of the current study also contradict the results reported by Montero Perez et al. (2014) for Flemish high- intermediate learners of French. Their findings show that the captioning groups outperformed the non-captioning group on word recognition. However, all captioning groups scored equally well. It is worth mentioning that Montero Perez et al. (2014) used only written vocabulary tests to measure word recognition, while in this study, vocabulary tests were both in oral and written format.

Perhaps the most likely explanation for this unexpected outcome is that the lack of frequency of some TWs did not allow participants to pay much attention to them while watching the video. It was difficult to focus on those words even if each word was visually enhanced by the presence of a picture. Some of the TWs were repeated only once. Participants were prompted to watch each video for general understanding. They may have paid more attention to TWs if they were told that they would take a vocabulary test after viewing the videos. It is possible that participants' lack of exposure to videos with captions may have prevented them from paying enough attention to captions, which is a new feature for most of them. According to participants' instructors, no captioned videos were shown in class. They argued that such materials were lacking so they rely only on non-captioned video clips. Another plausible explanation for the lack of effect of captions on participants' word recognition abilities has to do with the major difference between their L1 script and English script. Arabic natives read from right to left and their alphabet is not Roman. Given their elementary level of English, it takes them longer to read while listening to a native speaker who narrates with a normal pace. Similarly, a native speaker's pace can be too fast for them to process aural input as well as written input. Winke et al. (2010) argued that script differences can play a role in the way learners' process captions.

## **6.2. Research Question 2**

Does the type of video captioning (full captions and keyword captions) have a differential effect on ESL students' incidental learning of target vocabulary words, as measured by oral and written meaning recall tests?

This study tried to measure meaning recall which is a different skill from word recognition (Nation, 2001) as it requires deeper processing of TWs. It was hypothesized that participants of the FC and KC groups would outperform participants in the NC group. However, the analyses show all groups obtained similar scores on both oral and written translation tests. In fact, the NC outscored the FC and KC but the difference is not significant. This result is rather surprising as it contradicts previous research on video captioning (e.g., Danan, 1992; Sydorenko, 2010; Winke et al., 2010) which demonstrated the positive impact of captioning on meaning recall. The current study supports, however, the findings reported by a more recent study that revealed that captioning did not affect meaning recall (Montero Perez et al., 2014). There is a difference between their test modality, which was written, while in this study they were both aural and written. In addition, the participants had a significantly different L1.

Most scholars agree that the task of listening itself is challenging for L2 learners. Goh (2000) identified ten L2 listening problems faced by ESL learners. Among these problems, Goh mentions that ESL learners: "Do not recognize words they knew; neglect the next part when

thinking about meaning; could not chunk streams of speech; miss the beginning of texts; and concentrate too hard or unable to concentrate", p.59). Furthermore, inferring word meaning is a difficult process that takes time for foreign language learners (Liu & Nation, 1985). Within the same vein, Montero Perez et al. (2014) argued that the inability of captioned-groups to translate more words than the non-captioned group was perhaps due to the burden of the recall test on students. They thought that the translation test was very demanding as it not only required them to watch the clip and read the captions, but also to remember the content and derive the meaning of unknown words. This may be the case for the participants of this study who were not used to performing many tasks with multiple videos. Participants may have performed better on translation tests if they had the chance to view the video clips more than twice. Though the researcher did not conduct a questionnaire to assess the participants' experience, some participants did communicate feeling overwhelmed when they were told they had to watch three video clips and that they were limited to two viewings.

### **6.3. Research Question 3**

Does the type of video captioning (full captions and keyword captions) have a differential effect on ESL students' incidental overall learning of new vocabulary?

Contrary to what was hypothesized, the NC group outscored both captioned groups (FC and KC) on overall vocabulary tests that combine word recognition tests and translation tests. However, the difference in test scores was not significant. This result was rather surprising as it was not consistent with previous research that has found that the availability of captions fostered learners' ability to acquire more new words than learners who had no access to captions (e.g., Sydorenko, 2010; Winke et al., 2010; Montero Perez et al., 2014).

One possible explanation is that all participants attended more to the audio, including the captioned group. Markham (1999) found that learners focus on audio when they have captions. The presence of captions could have been a burden. In other words, this dataset supports the predictions of cognitive load theory. The presentation of the same information in multiple modalities (text, audio, and picture, for example) increases cognitive load, which can negatively impact comprehension (Sweller, 2005). Learners split their attention between modalities. Consequently, their capacity to process information will be undermined (Chandler & Sweller, 1991). The presence of many stimuli is more demanding of one's attention for L2 learners (Robinson, 2003).

There have been reports of L2 learners who were able to handle multiple input (images and captions) while watching captioned videos (e.g., Taylor, 2005). However, these learners were native speakers learning languages with similar scripts (Winke et al., 2013). In an eye-tracking study that involved different groups of native speakers of English, learning different languages including Arabic, Chinese, Russian and Spanish, Winke et al. (2013) found that learners of Arabic spent significantly more time reading captions than learners of Spanish and Russian. This indicates that the way learners use captions is tightly connected with the distance between L1 and L2 (Winke, Gass, & Sydorenko, 2008). Arabic learners need more extensive processing in order to extract meaning (Winke et al., 2010, 2013). In the present study it is the learners' native Arabic which could have been the cause of the low performance of captioned groups on vocabulary tests.

Obviously, more research that involves Arabic speakers' use of captions is needed to confirm this hypothesis.

Another possible reason for the results above might be the participants' lack of familiarity with captions. Vanderplank (1988) conducted a study that involved Western Europeans from France, Germany, Austria, Denmark, Italy, and Spain, along with Arabic high-intermediate to advanced college ESL students. Participants watched captioned British TV programs for nine weeks. Findings revealed that European students found captions useful, while the Arabic students complained that captions were too fast for them to understand. Vanderplank concluded that European students utilize captions better because they are used to them.

One final possible reason for the lack of impact of captions is related to the low reading level of the participants. Some participants could be slow readers. Because they were not allowed to pause the video clips the pace might have been too fast for them to finish reading all captions while trying to infer the meaning of new words. As mentioned earlier, all the participants' native language is Arabic, which has a non-Roman alphabet. In order to reveal whether L1 had an impact on L2 learners' ability to process captions, further research is necessary.

## **7. Implications**

The study did not offer evidence that captions facilitate vocabulary learning as demonstrated by previous research. However, the researcher hypothesizes that many factors prevented the participants of this study to benefit from captions. One of them was their unfamiliarity with this feature and lack of practice. Therefore, teachers who choose to incorporate captioned videos in their teaching should probably train learners in using captions as recommended by some researchers (Danan, 2004; Taylor, 2005; Winke et al., 2013). In the case of Arabic learners, reading captions may take longer as suggested earlier. Therefore, teachers should pause videos so that students can have more time to read captions as suggested by Winke et al. (2013). The rationale for recommending this technique is based on the findings of L1 eye-tracking research which revealed that the task of processing input gets easier if learners are allowed to first read text prior to watching corresponding images (Rayner et al., 2001; Underwood et al., 2004).

## **8. Limitations**

There are several limitations to this study. First of all, the participants were limited to the elementary level. Conducting a study that involves participants with higher proficiency might have yielded different results. Therefore, these findings should be interpreted with caution and cannot be generalized. Second, the study used a limited number of short video clips that covered the same topic (American national parks) that may not have been interesting for the participants. Choosing video clips with a variety of interesting topics could have impacted the results of the vocabulary tests. Third, the number of target words (TWs) was relatively small. The researcher was forced to eliminate the TWs that were familiar to the participants and that explains the low number of TWs. Given the short length of videos, it was not possible to find alternative TWs. The small number of TWs made the vocabulary tests short. Longer tests would have been desirable. Another limitation of this study was that the learners' opinions about the usefulness of captions were not measured. A questionnaire could have given the researcher insight into the participants' experience with captions and the potential challenges they may have faced.

Participants in this study had a very tight schedule and instructors could not use the whole class period to conduct the study and a survey.

## **9. Conclusion**

The purpose of this study was to investigate which type of captioning is more effective in enhancing learners' abilities to acquire incidental vocabulary: FC or KC in the context of elementary ESL students whose native language is Arabic. The results showed that there were no significant difference between the captioned groups and the non-captioned group scored on word recognition and translation test scores. The researcher hypothesizes that the lack of evidence this current study offers for the positive impact of captions might be due to the learners' L1 and their lack of familiarity with captions.

Future research should continue to explore under what conditions captioning can help L2 learners enlarge their vocabulary size. Most of the studies that were conducted involved native speakers of Indo-European languages. Researchers should turn their attention to other languages with a different script such as Arabic and Chinese. This study might be replicated involving learners with a higher level of language proficiency to see if the difference in script will still be a factor. Furthermore, as technology advances it is even possible to incorporate captions enhanced with glosses containing the L1 translation as suggested by some researchers (e.g. Sydorenko, 2010; Webb, 2010; Montero Perez et al., 2014) with the option of making them available upon request from the learners.

## **ACKNOWLEDGMENTS**

The authors wish to acknowledge the approval and the support of this research study by the grant no. **9 / 8 / 1436 / 5** from the Deanship of Scientific Research in Northern Border University, Arar, **K.S.A.**

## References

- Al-Seghayer, K. (2001). The effect of multimedia annotation modes on L2 vocabulary acquisition: A comparative study. *Language Learning & Technology*, 5(1), 202-232. Retrieved from <http://llt.msu.edu/vol5num1/alsegayer/default.html>
- Baltova, I. (1999). Multisensory language teaching in a multidimensional curriculum: The use of authentic bimodal video in core French. *The Canadian Modern Language Review*, 56(1), 32-48.
- Bird, S. A., & Williams, J. N. (2002). The effect of bimodal input on implicit and explicit memory: An investigation into the benefits of within-language subtitling. *Applied Psycholinguistics*, 23 (4), 509-533.
- Borras, I., & Lafayette, R. C. (1994). Effect of multimedia courseware subtitling on the speaking performance of college students of French. *The Modern Language Journal*, 78, 61-75.
- Chandler, P.; Sweller, J. (1991). Cognitive load theory and the format of instruction. *Cognition and instruction*, 8, 293-332.
- Danan, M. (2006). Reversed subtitling and Dual Coding Theory: New directions for foreign language instruction. *Language Learning*, 42(4), 497-527.
- Garza, T. J. (1991). Evaluating the use of captioned video materials in advanced foreign language learning. *Foreign Language Annals*, 24(3), 239-258.
- Guillory, H. G. (1998). The effects of keyword captions to authentic French video on learner comprehension. *CALICO Journal*, 15(1-3), 89-108.
- Goh, C. C. (2000). A cognitive perspective on language learners' listening comprehension problems. *System*, 28(1), 55-75.
- Jones, L. (2003). Supporting listening comprehension and vocabulary acquisition with multimedia annotations: The students' voice. *CALICO Journal*, 21(1), 41-65.
- Lavery, M. (1984). Active viewing plus. Oxford, England: Modern English Publications.
- Markham, P. (1993). Captioned television videotapes: Effects of visual support on second language comprehension. *Journal of Educational Technology Systems*, 21(3), 183-191.
- Markham, P. (1999). Captioned videotapes and second-language listening word recognition. *Foreign Language Annals*, 32(3), 321-328.
- Montero Perez, M., Peters, E., & Desmet, P. (2015), Enhancing Vocabulary Learning Through Captioned Video: An Eye-Tracking Study. *The Modern Language Journal*, 99 (2) 308-328. doi: 10.1111/modl.12215
- Montero Perez, M., Peters, E., & Desmet, P. (2014). Is less more? Effectiveness and perceived usefulness of keyword and full captioned video for L2 listening comprehension. *ReCALL*, 26(01), 21-43.
- Montero Perez, M., Peters, E., Clarebout, G., Desmet, P. (2014). Effects of captioning on video comprehension and incidental vocabulary learning. *Language Learning & Technology*, 18 (1), 118-141.
- Nation, I. S. P. (2001). Learning vocabulary in another language. New York: Cambridge University

- Neuman, S. B., & Koskinen, P. (1992). Captioned television as comprehensible input: Effects of incidental word learning from context for language minority students. *Reading Research Quarterly*, 27(1), 95-106.
- Pulido, D. (2004). The relationship between text comprehension and second language incidental vocabulary acquisition: A matter of topic familiarity? *Language Learning*, 54(3), 469-523.
- Rastle, K., Harrington, J., & Coltheart, M. (2002). 358,534 Nonwords: The ARC Nonword Database. *The Quarterly Journal of Experimental Psychology*, 55(4), 1339-1362.
- Rayner, K., Rotello, C. M., Stewart, A. J., Keir, J., & Duffy, S. A. (2001). Integrating text and pictorial information: Eye movements when looking at print advertisements. *Journal of Experimental Psychology: Applied* 7(3), 219-226.
- Reese, S.D. (1984). Visual-verbal redundancy effects on television news learning. *Journal of Broadcasting*, 28(1), 79-87.
- Robinson, P. (2003). Attention and memory during SLA. In C. J. Doughty & M. H. Long (Eds.), *The handbook of Second Language Acquisition*. Malden, MA: Blackwell.
- Rooney, K. (2014). The Impact of Keyword Caption Ratio on Foreign Language Listening Comprehension. *International Journal of Computer-Assisted Language Learning and Teaching* 4 (2), 11-28.
- Rost, M. (2002). *Teaching and Researching Listening*. London, UK: Longman.
- Sydorenko, T. (2010). Modality of input and vocabulary acquisition. *Language Learning & Technology*, 14(2), 50-73. Retrieved from <http://llt.msu.edu/vol14num2/sydorenko.pdf>
- Sweller, J. (2005). The redundancy principle in multimedia learning. In R.E. Mayer. (Ed.), *The Cambridge handbook of multimedia learning* (pp.159-168). Cambridge University Press.
- Taylor, G. (2005). Perceived processing strategies of students watching captioned video. *Foreign Language Annals*, 38(3), 422-427.
- Underwood, G., Jebbett, L., & Roberts, K. (2004). Inspecting pictures for information to verify a sentence: Eye movements in general encoding and in focused search. *Quarterly Journal of Experimental Psychology* 57A (1), 165-182.
- Vanderplank, R. (2010). Déjà vu? A decade of research on language laboratories, television, and video in language learning. *Language Teaching*, 43(1), 1-37.
- Webb, S. (2010). Using glossaries to increase the lexical coverage of television programs. *Reading in a Foreign Language*, 22(1), 201-221.
- Winke, P., Gass, S., & Sydorenko, T. (2010). The effects of captioning videos used for foreign language listening activities. *Language Learning & Technology*, 14(1), 65-86. Retrieved from <http://llt.msu.edu/vol14num1/winkegasssydorenko.pdf>
- Winke, P., Gass, S., & Sydorenko, T. (2013). Factors influencing the use of captions by foreign language learners: An eye-tracking study. *The Modern Language Journal*, 97(1), 254-275.

#### APPENDIX A

Sample Vocabulary Word recognition and Translation Tests

