

THE IMPACT OF WATCHING SUBTITLED ANIMATED CARTOONS ON INCIDENTAL VOCABULARY LEARNING OF ELT STUDENTS

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Abstract

This study aimed to find out whether watching subtitled cartoons influences incidental vocabulary learning. The study was conducted with 42 first grade English Language Teaching (ELT) department students at the University of Mehmet Akif Ersoy, Burdur. To collect data from the subjects, a 5-point vocabulary knowledge scale was used and 18 target words were integrated into the scale. The pre-test and post-test group design was selected for the administration. After subjects had been randomly assigned into two groups (one subtitle group and the other no-subtitle group), they were given the same pre- and post-tests.

The findings of study did not support the assumption that the subtitle group would outperform the no-subtitle group, since there were no significant differences between two groups according to t-test results. However, there was significant improvement in both of the groups from pre-test to post-test scores. This progress was attributed to the presentation of target words in cartoons. In this way, the target words were contextualized and it became easy for participants to elicit the meanings of the words.

Keywords: animated cartoons, vocabulary development, subtitles and captions, language learning

1. Introduction

As a consequence of the rapid development in science, technology and media, foreign/second language teaching field has gained much improvement in the recent years. Especially, the function of language classes has changed dramatically. Their potential to provide comprehensible input, which, according to Krashen (1982), leads to ‘subconscious language acquisition’, has increased a lot with the provision of such technical devices as TV, LCD projector, laptop, DVD player and video materials into the classrooms. Out of all these, particularly, the use of video and TV has grown rapidly due to the increasing focus on

communicative aspects of language use (Çakır, 2006). This has helped language teaching quality boost both in and outside the class. However, language learners have difficulty in following and understanding video materials and TV programs in the target language. Therefore, such visual materials have been enhanced with subtitles either in the mother tongue or the target language in order to facilitate the comprehensibility of these materials.

The study attempts to explore the impact of animated cartoons enhanced with English subtitles with upper intermediate first-year ELT students. Particularly, the research aims to answer the question “How would a language material (i.e., animated cartoons) with or without English language subtitles affect these students’ vocabulary development?” It is assumed that significant differences will be found between the groups watching animated cartoons with and without subtitles in developing vocabulary knowledge.

This study differs from the previous studies in that it focuses on vocabulary development process, rather than on reading or listening comprehension. While doing this, it avoids using discrete multiple-choice tests, used extensively in the previous studies. Instead, a vocabulary knowledge scale (VKS) developed by Wesche & Paribakht (1996) was applied as this scale is process-oriented and compatible with the view that vocabulary acquisition is a continuum of development.

Another innovation in the study is using animated cartoons as language input. To the researcher’s best knowledge, no other study has used animated cartoons as a material in similar studies yet. To understand the matter well, it is better to have a look at the previous literature and related studies about subtitles and captions in audiovisual materials

2. Literature review

2.1. Subtitles as language materials

There have been a great number of supporters of the use of subtitles in videos and TV programs for various reasons. For example, Danan (2004) claims that audiovisual materials enhanced with captions or subtitles may function as a powerful educational tool in many ways. For example,

- (1) they improve the listening comprehension skills of second/foreign language learners;
- (2) facilitate language learning by helping students visualize what they hear and
- (3) increase language comprehension and lead to additional cognitive benefits, such as greater depth of processing (p. 67).

However, Danan (2004) also reports that many language teachers are against their use in audiovisual materials. This might be because they fear that subtitles may distract learners’

attention, especially that of lower-level learners, from the actual spoken language to written text and create a sense of laziness on the part of students (Taylor, 2005).

There are also several studies that focused on the effects of subtitles/captions on comprehension in reading, listening and vocabulary acquisition. These studies aimed to investigate whether captioned videos or TV programs are more effective than non-captioned ones (Baltova, 1999; Danan, 1992, 2004; Garza, 1991; Markham, 1993, 1999; Neuman & Koskinen, 1992). The general findings of these studies supported the common assumption that subtitles and captions are powerful instructional tools in learning vocabulary and improving reading and listening comprehension skills of language learners. However, according to Winke, Gass, and Sydrenko (2010), it is difficult to generalize the findings of the studies reviewed above for at least two reasons: "First, several studies did not group subjects by proficiency levels; second, the types of tests used to measure the effects of language learners' processing of captions varied widely" (p.67). Hence, the differences in comprehension may have resulted from the effects of captions/subtitles or from the level of proficiency, and we still do not know whether the other type of tests may produce similar results or not.

In her experiment with keyword captions, full text captions and no-text groups, Guillory (1998) demonstrates that "the keyword captions group outperformed the no text group and that the full text captions group outperformed the keyword captions group" (p. 89). Rather than focusing attention on reading and comprehension skills, she attempted to use captions to help learners link written words with their phonetic realizations, namely; they might arouse the phonological visualization of aural cues in the minds of listeners (Bird & Williams, 2002). That is another benefit of captions/subtitles in visual materials.

In addition to this, captions/subtitles play an important role in lowering the affective filter, which psychologically affects one's learning. For example, we feel comfortable since it is easy for us to get meaning from foreign language films with subtitles and captions. This assumption was supported by Koskinen *et al.*, who examined the effects of captioned videos on incidental reading vocabulary knowledge and confirmed that captioned videos considerably improved the reading vocabulary knowledge of the participants (cited in Yüksel & Tanrıverdi, 2009).

2.2. Incidental vocabulary learning

Vocabulary, the core of the language, is not acquired at one shot. It necessitates a long process. Throughout this process, learners become familiarized with the encountered words.

However, the major source of subtitles is the Internet, and one can download the subtitles of any video in the target language. Currently, all of these facilities are available to almost any language learners in Turkey.

3. The study

3.1. Setting and participants

The study was conducted with 42 English Language Teaching (ELT) 1st grade students studying at Mehmet Akif Ersoy University (MAKU) in the academic term 2010-2011, including 13 male and 29 female students. The participants of the study took intensive English courses at high school before their undergraduate education in ELT. Since the university does not have a prep-program, they did not take a proficiency test prior to their study at the ELT department. However, they all took the LYS 5 exam (the foreign language exam for those wishing to study in ELT) to meet the placement requirements of YOK (The Council of Higher Education). The exam covered questions in reading comprehension, vocabulary and grammar knowledge. All of the participants were approximately at a similar English proficiency level (i.e. upper intermediate) based on their scores obtained from the LYS 5 exam.

3.2. Design and procedure

A pre-test - post-test experiment and group framework was used as a research design in the study. The participants were randomly assigned to each group. In group A (the subtitle group), participants watched cartoon movies with the English subtitles and in Group B (the no-subtitle group) participants watched without subtitles. Both groups were given the same pre- and post-tests. Table 1 illustrates the design of study.

Table 1: Design of the study.

Pretest	Treatment	Post-test
VKS is given to both groups	Group A (cartoons with subtitles)	VKS is given to both groups
	Group B (cartoons without subtitles)	

The administration of the tests and treatments was done in the computer lab, where participants often watch movies and videos in English in other classes. An LCD projector and

a laptop were available for the treatment in the lab. The free software Gom Player, a media player that has the facility to incorporate subtitles into the moving picture, was utilized to play the cartoons.

A popular American television series, *Family Guy*, was selected as the teaching aid for this study. It is a popular animated TV sitcom followed by a very wide audience around the world. Episodes 3 and 6 from the 3rd season were selected since these episodes do not include much slang and are clear for students to understand. Twenty-four target words from these two episodes were drawn out based on the proficiency level and background of the students following the suggestions of their course lecturer. All of these words belonged to the same word category (all verbs). Pilot tests were conducted with similar freshman students from the ELT department of Suleyman Demirel University to determine the suitability of the selected target words (Cronbach's Alpha .864). According to the results of the pilot tests, six of the verbs that do not serve the purpose of the study were eliminated from the scale. Totally, eighteen target words that are not frequently used were kept in the scale.

Wesche and Paribakht's (1996) 5-point self-report scale of vocabulary knowledge (VKS) was adapted to measure the vocabulary development of the subjects since it allows to specify the stages of vocabulary acquisition from first exposure to production and enables the researcher to determine how well the participants know these vocabulary items. This scale also shows the students' partial knowledge of items. The VKS is composed of 5 levels as follows:

- 1: I don't remember having seen this word before.
 - 2: I have seen this word before but I don't know what it means.
 - 3: I have seen this word before and I think it means _____ (synonym or translation).
 - 4: I know this word. It means _____ (synonym or translation).
 - 5: I can use this word in a sentence. e.g.: _____ (if you do this section, please also do section 4).
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Figure 2: The Vocabulary Knowledge Scale (Wesche and Paribakht, 1996).

The participants' responses were simply coded according to the level they chose for each word on VKS (Wesche and Paribakht, 1996). However, level 3, 4 and 5 entail some kind of production from students. Thus, the researchers checked the accuracy of their answers and marked their choices as they are, if they were correct. However, if the responses were incorrect, the researcher downgraded the participant's choice by one level. For instance, if a

participant chose Level 3 for a word, the answer was marked as Level 3 only if the response was accurate, if it was not, then the researcher marked the answer as Level 2.

4. Results and findings

18 target words to collect data were integrated into Wesche's VKS. Then, the scales were distributed to the students in Groups A and B during their course with the researcher at the computer lab at different times of the same day. One week after the pretest the students in Group A watched episodes 3 and 6 from the 3rd season of *Family Guy* with the English subtitles and the ones in Group B watched them without subtitles at different class hours. One week later both groups were given the post-tests.

The expected responses were based on a 5-point vocabulary knowledge scale ranging in level from 1 to 5 (see Figure 2 above). To keep the study confidential, the students were not informed about the purpose of the study till they finished with the post-tests and they were not allowed to use their dictionaries during test administration. Besides, before the administration of the study the students were reminded that participation was voluntary and there would be no extra marks or rewards. The collection of all surveys of Group A and B took one class hour – 45 minutes. The watching of the episodes also lasted nearly 40 minutes for each group. Afterwards, the participants were given the VKS and were asked to answer the items on it. The expected responses were placed on a five-point scale indicated above.

Finally, the participants' responses were loaded into SPSS 15.0. Then, descriptive statistics on SPSS were employed by the researcher to see the general distribution of the data and average scores (Table 2). Following descriptive statistics, one sample t-test was used to see the progress in each group (Table 3). Further analysis was conducted to understand whether one of the groups improved significantly better than the other. For this purpose, independent sample t-test was utilized (Table 4).

5. Discussion

According to the results of the descriptive statistics (see Table 2), the highest mean value was seen in the post-test of Group A (Mean= 2.81) and the second highest mean value lies in the post-test of Group B. Also, the mean scores of pre-tests of both groups were very close to each other (Group A= 2.47, Group B= 2.53). It is assumed, thus, that both groups had similar knowledge about the target words before they were exposed to the treatment.

Table 2: Average scores attained in each group.

	N	Minimum	Maximum	Mean	SD
Group Pretest	21	1.05	4.27	2.4735	1.0400
Group Posttest	21	1.11	4.88	2.8148	1.1834
Group Pretest	21	1.05	4.11	2.4232	.9815
Group Posttest	21	1.11	4.50	2.5343	1.0989
Valid N (listwise)	21				

The development in each group was measured through t-test. One sample T-test demonstrated that there was an improvement in each group. Participants in Group A improved on an average of .34127 from pre-test to post-test while those in Group B (the subtitles group) progressed by .1111 approximately. As Table 3 illustrates, the progress made in each group was significant at a .01 level.

Table 3: Summary of one-sample r-test results.

	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Upper	Lower
Gains for Group A	11.391	20	.000	.34127	.4066	.2751
Gains for Group B	10.985	20	.000	.11111	.1645	.0577

*significant at $p < .01$

Further analysis was conducted through t-test to discover whether one of the groups improved significantly more than the other (Table 4). Prior to this, the homogeneity variances were checked through Levene statistic and it showed no significance ($p=.521$). This indicated that there was no evidence of homogeneity. Though Group A slightly outperformed Group B on average scores, the t-test results demonstrated that there was no statistically significant difference between the two groups' gains ($p=.094$).

Table 4: The summary of t-test results for the gains between two groups (Independent Samples Test).

		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. Error difference	95 % Confidence Interval of the Differences	
									Lower	Upper
Mean	Equal variances assumed	.419	.521	1.715	40	.094	.28042	.16350	-.05002	.61086
	Equal variances not assumed			1.715	39.292	.094	.28042	.16350	-.05020	.61105

According to the findings of the study, both Group A (the subtitle group) and Group B (the no-subtitle group) had significant gains from pre-test to post-tests in the self-reported Vocabulary Knowledge Scales. When the gains of two groups were compared, the participants in Group A, who watched cartoons with subtitles, were found to improve a bit more than those in Group B, who watched without subtitles (Group A= .34127, Group B= .11111). However, there was no significant difference between groups in terms of gains. Thus, what facilitated the improvement in vocabulary knowledge was not the incorporation of subtitles into the cartoons. At this point, it might be posited that the cartoons increased the vocabulary development of participants.

As mentioned earlier, both groups' initial knowledge was close to each other before the treatment (see pre-test scores of the groups). The mean scores were slightly under 2.5. on average. This was an indication that most participants had seen the words before but did not remember what they meant. However, the post-test points of both groups increased concurrently after watching the cartoons (Group A from 2.47 to 2.81, Group B from 2.42 to 2.53). Based on this fact, it might be assumed that the participants not only remembered seeing the words but also guessed almost half of the target words accurately by providing their Turkish equivalents or translations.

The previous research attributes the vocabulary development of students to their being exposed to the target words in a specific context (in subtitled cartoons). Nation and Waring (1997) point out that it is one of the most important vocabulary learning strategies and an essential part of any vocabulary learning program. Since the participants were not informed about the purpose of the study beforehand and were not allowed to use their dictionaries during the treatment phase, they most probably took advantage of this strategy with the help of contextual clues embedded in the cartoons. Based on this fact, it is assumed that incidental learning of the vocabulary items occurred due to the incorporation of target words into the

cartoons that functioned as a context, obviously a fundamental notion within the process of incidental vocabulary learning (DeRidder, 1999). It is also preferred by teachers since teaching words in isolation does not produce the desired results.

The data collection tool utilized in this study, VKS, is concerned with the descriptions of stages that words pass through. That is why the use of such scales seems attractive on the surface. However, such scales have been criticized in many ways. For example, Meara (1996) criticizes Wesche and Parikbath's VKS by claiming that the description of the word knowledge is rather simple; only the very basic stages that a vocabulary item passes through are defined and there is no attempt to account for more detailed knowledge about a word that develops over time. However, it was not an obstacle for the study to use VKS since its goal was not to account for detailed knowledge about the target words or more complex stages they pass through. Instead, the main aim was to identify the initial stages or levels in vocabulary in vocabulary development by students' self-reports and demonstrations. To the researcher's understanding, VKS satisfied the objectives of the study.

The materials used in the treatment phase, namely cartoon movies, attracted students' attention. They seemed to enjoy watching the episodes. However, it was observed by the researcher that a few of the students lost their interest while watching the second cartoon movie. The reason was attributed to the length of the cartoon, nearly 40 minutes in total. Given the concentration span of students, it would have been better if the movies had been kept under 30 minutes. Thus, in further research, the cartoons should be trimmed to include only the related parts targeted in the study.

6. Conclusion

In this study, the relationship between watching subtitled and non-subtitled cartoons and its effect on the vocabulary development was investigated. It has been found that, no matter whether participants watched the movies with subtitles or without them, they improved at a significant level from pre-test to post-test scores. The gains of participants were thought to be the result of contextual aids of cartoons. The actions, signals of hands and arms, as well as facial expressions might facilitate the understanding of the target verbs when accompanied with subtitles. Finally, the following propositions can be concluded from this study:

1. Vocabulary development is a long lasting process that needs to be supported by contextual clues. It is due to the fact that the possibility of guessing meaning from context is higher. Words in isolation, overall, give no clues to the learner and thus they are hard to guess from

context. Then, the implication for the teachers is that the new vocabulary items should be presented in context rather than in isolation. Nevertheless, it is worth noting that this conclusion would need to be verified by a longitudinal study. Thus, one of the limitations of this study was that the interval between two tests was too short, which might have caused bias in the interpretation of the results.

2. Frequent encounters with novel words make learners become familiarized with the words, which was supported by the findings of the study. Those students who claimed in the pre-test that they had not seen the word before reported in the post-test that they could make a guess about the unknown word. This familiarization was definitely strengthened by repetition. Consequently, vocabulary improvement occurred incidentally regardless of watching the episodes with or no subtitles.

3. Though there were no statistically significant differences between subtitle and no subtitle groups in terms of vocabulary gains, the mean score was higher in the subtitle group from pre-test to post-test. The lack of homogeneity in groups might be the reason of this high mean score. To prevent such kind of random errors, the group members should have taken the homogeneity test before being assigned to any group.

4. One implication for further research is that other word groups (i.e. adjectives or nouns) can be selected to work on with a focus on different language skills (i.e. listening, reading comprehension, etc.) Another idea might be to incorporate only the keywords as subtitles since the whole subtitled sentences make it difficult for learners to follow the flow of speech, as they either concentrate on the speech or the subtitles. Whenever this happens, it becomes hard to measure the vocabulary gains. Therefore, including only the target words in the form of keywords may bring us closer to the goal.

References

- 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.
- Çakır, İ. (2006). The use of video as an audio-visual material in foreign language teaching classroom. *The Turkish Online Journal of Educational Technology*, 5(4), 67-72.

- Danan, M. (1992). Reversed subtitling and dual coding theory: New directions for foreign language instruction. *Language Learning*, 42(4), 497-527.
- Danan, M. (2004). Captioning and subtitling: undervalued language learning strategies. *Meta: Translators' Journal*, 49(1), 67-77.
- Day, R.R., Omura, C. & Hiramatsu, M. (1991). Incidental EFL vocabulary learning and reading. *Reading in a Foreign Language*, 7(2), 541-551.
- De Ridder, I. (1999). Are we still reading or just following links? In K. Cameron (Ed.), *CALL and the Learning Community* (pp. 195-116). Exeter: ELM Bank Publications.
- Fraser, C.A. (1991). Lexical processing strategy use and vocabulary learning through reading. *SSLA*, 21, 225-241.
- 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*, 15(1-3), 89-108.
- Krashen, S.D. (1982). *Principles and Practice in Second Language Acquisition*. Oxford: Pergamon Press Inc.
- Markham, P. L. (1993). Captioned television videotapes: Effects of visual support on second language comprehension. *Journal of Educational Technology Systems*, 21(3), 183-191.
- Markham, P. L. (1999). Captioned videotapes and second-language listening word recognition. *Foreign Language Annals*, 32(3), 321-328.
- Meara, P. (1996). The Vocabulary Knowledge Framework. Vocabulary Acquisition Research Group Virtual Library [On-line]. Available: <http://www.lognostics.co.uk/vlibrary/meara1996c.pdf> (2011, May 29).
- Nation, I. S. P. (1990). *Teaching and Learning Vocabulary*. Boston: Heinle & Heinle.
- Nation, P & Waring, R. (1997). Vocabulary size, text coverage, and word lists. In Schmitt N, & McCarthy, M. (Eds), *Vocabulary: Description, Acquisition, Pedagogy* (pp. 6-19). New York: Cambridge University Press.
- 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, 94-106.
- Schmidt, R. (2001). Attention. In P. Robinson (Ed.), *Cognition and Second Language Instruction* (pp. 332). Cambridge: Cambridge University Press.
- Sun, Y. & Dong, Q. (2004). An experiment on supporting children's English vocabulary learning in multimedia context. *Computer Assisted Language Learning*, 17(2), 131-147.
- Taylor, G. (2005). Perceived processing strategies of students watching captioned video. *Foreign Language Annals*, 38(3), 422-427.
- Wesche, M. & Paribakht, T.S (1996). Enhancing vocabulary acquisition through reading: A hierarchy of text-related exercise types. *The Canadian Modern Language Review*, 52(2), 155-178.
- Winke, P., Gass, S. & Sydronke, T. (2010). The effect of captioning videos used for foreign language listening activities. *Language Learning and Technology*, 4(1), 65-86.
- Yüksel, D. & Tanrıverdi, B. (2009). Effects of watching captioned movie clip on vocabulary development of EFL learners. *The Turkish Online Journal of Educational Technology*, 8(2), 48-54.

Appendix

Dear student,

This questionnaire was prepared to measure your knowledge of listed words. The answers to the survey will be used only in accordance with research objectives and will be kept confidential. Sincere answers to the questions are of high significance for the success and reliability of the study. Thank you very much for taking your time to help me.

Vocabulary Knowledge Scale

- 1: I don't remember having seen this word before
 2: I have seen this word before but I don't know what it means
 3: I have seen this word before and I think it means _____ (synonym or translation)
 4: I know this word. It means _____ (synonym or translation)
 5: I can use this word in a sentence. e.g.: _____ (if you do this section, please also do section

Mark the appropriate column for each word and provide an answer, if necessary.

Note: You can write synonyms, translations and sentences in **Turkish**, if you wish.

VERBS	LEVELS				
	1	2	3	4	5
1. mop					
2. hug					
3. hail					
4. sigh					
5. fart					
6. gasp					
7. swab					
8. dump					
9. rely					
10. ditch					
11. growl					
12. vomit					
13. roast					
14. murmur					
15. chuckle					
16. applaud					
17. negotiate					
18. terminate					