

Watching Captioned Authentic Videos for Incidental Vocabulary Learning: Is It Effective?

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Abstract

This article examines the effectiveness of watching captioned authentic videos for incidental vocabulary learning by comparing it to intentional learning of new lexis through a set of tasks and a control group. For this purpose, 32 Spanish learners of English were distributed among three groups: intentional, incidental and control. The intentional group took part in a one-hour classroom teaching session, whereas the participants from the incidental group were exposed to 5 hours of captioned authentic video. The control group was used as a reference. The performance of the three groups was compared in three vocabulary tests, which were developed to measure the learning of three different aspects of word knowledge: form recognition, meaning recognition and written use in a sentence. While no significant difference was observed between the performance of the incidental group and the control one, the intentional group demonstrated considerably higher scores in the three vocabulary tests. The effectiveness of incidental vocabulary learning through watching 5 hours of captioned authentic videos is discussed in terms of the variables that could have affected the learning process.

Keywords: incidental vocabulary learning; intentional vocabulary learning; authentic videos; captioned/subtitled videos.

1. Introduction

Vocabulary is an indispensable part of target language (TL) learning because “words are the main carrier of information and conceptual knowledge” (Baltova 1999: 16). Whenever we want to say something in the TL, it is usually the words that we feel we struggle for “rather than grammar or pronunciation” (Cook 2001: 66). New vocabulary can be acquired intentionally or incidentally while being exposed to some kind of input in the TL. Nowadays, subtitled/captioned authentic videos can be considered a valuable source of input for incidental new vocabulary learning. They provide verbal and non-verbal stimuli, which can help to improve the processing of information (Paivio 1991; Sadoski 2005). Moreover, apart from giving an opportunity for observing target language in a diversity of communicative contexts (Harmer 2003; Lin and Siyanova-Chanturia 2014), authentic videos can have a strong

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motivational effect on the learners' attitude to TL learning (King 2002; Cruse 2007).

The usefulness of watching subtitled/captioned authentic videos for new vocabulary learning has been widely studied by scholars. Experiments into this matter can be divided into two groups: the ones that used short videos (maximum 1 hour) and the studies with extensive exposure to authentic audio-visual material. Studies from the first group show contradictory results: while some of them report certain vocabulary gains (Koolstra and Beentjes 1999; D'Ydewalle and Van de Poel 1999; Yuksel and Tanriverdi 2009; Peters and Webb 2018), there are also experiments that did not find conclusive evidence of the effectiveness of watching short authentic videos for new lexis learning (Bisson et al. 2014; Birulés-Muntané and Soto-Faraco 2016; Peters et al. 2016; Sinyashina 2019). As for the experiments from the second group, which focused on extensive exposure to authentic audio-visual material, all of them recorded vocabulary gains after the participants watched subtitled/captioned authentic videos (Zarei 2009; Rodgers 2013; Gorjian 2014; BavaHarji et al. 2014; Frumuselu et al. 2015; Chen et al. 2018; Pujadas and Muñoz 2019).

Although the majority of empirical studies reveal that TL learners can incidentally acquire some vocabulary while being exposed to subtitled/captioned audio-visual input, scholars still point out the slow nature of incidental vocabulary learning (see, for example, Sökmen 2001; Schmitt 2012; Sonbul and Schmit 2010). They emphasize the need of direct instructions, which can facilitate the initial meeting or noticing of a new word, better engagement with its aspects and its recycling. (Nation 2004; Schmitt 2007; Jack 2015, Barcroft 2015; Benati and Angelovska 2016). In this case, it is said that new vocabulary is learned intentionally, when learners consciously attempt to do so by, for example, studying a list of new words or doing a set of tasks with them. We have found two experiments that investigated the effectiveness of incidental lexis learning through the reading input by comparing it to intentional learning (see Coyne et al. 2007; Alemi and Tayebi 2011) and both of them report better performance of the intentional condition in comparison to the incidental one. Nevertheless, no study has so far examined the usefulness of incidental learning of English vocabulary through the audio-visual type of input by comparing it to intentional learning that can take place in a classroom session while doing tasks that

allow practicing different aspects of new words. To my knowledge, the effectiveness of incidental vocabulary learning through watching authentic videos has been mainly examined by either using a control group or pre and post-tests. That is why, the purpose of the present experiment was to study the effectiveness of viewing captioned authentic videos in English for incidental learning of new lexis by not only comparing it to a control group but also to intentional vocabulary learning through a set of tasks. The tasks for the intentional part of the study were designed to practice three different aspects of the target words: form recognition, meaning recall and written use in a sentence, whereas watching captioned authentic videos provided exposure to the same target lexis.

2. Literature Review

2.1. Incidental and Intentional Vocabulary Learning

When referring to new language learning in general, Krashen (1989: 440) defines incidental acquisition as the process that occurs subconsciously when learners do not know they are acquiring a language because their “conscious focus is on the message, not form”. He also explains that this process “is identical to what has been termed ‘incidental learning’” (Krashen 1989: 440).

Regarding incidental vocabulary learning, while Gass (1999: 319) defines it as “a by-product of other cognitive exercises involving comprehension”, Nation (2004) and Barcroft (2015) highlight the importance of the context. Nation (2004: 232), for example, explains that incidental learning of new words can occur when “reading or listening to normal language use while the main focus of the learners’ attention is on the message of the text”. Barcroft (2015: 41), in his turn, introduces the term *incidentally oriented vocabulary learning*, which he describes it as “picking up new words from context without intending to do so, such as when engaging in a conversation or reading a text for meaning and processing new words as input and inferring their meanings”.

By contrast, intentional learning is a deliberate attempt to commit factual information to memory, which “often includes the use of rehearsal techniques” (Hulstijn 2013: 1). According to Barcroft (2015), intentional vocabulary learning can take place while TL learners consciously attempt to do so when, for example, studying a list of new

words or trying to learn “new words while viewing word-picture pairs, or consciously attempting to learn new words from context while reading a text” (Barcroft 2015: 25). Nation (2004) expresses the idea that the difference between incidental and intentional learning lies in the deliberate use of strategies that can occur in incidental learning.

The effectiveness of these two manners of new vocabulary learning through reading has been widely discussed by scholars. They agree that both incidental and intentional learning can contribute to vocabulary gains in the TL, although to different extents. Regarding incidental learning, Krashen (1989: 452) expresses the idea that incidental picking up of vocabulary from reading “is more time-efficient than methods that aim to give students a thorough knowledge of words”. Moreover, the experiments by Day et al. (1991), Hulstijn et al. (1996), Horst et al. (1998), Pellicer-Sánchez and Schmitt (2010) and Webb et al. (2013) provide evidence that TL learners managed to acquire new vocabulary incidentally from reading.

Although many scholars do not deny possible vocabulary gains that can occur through reading, they still point out the slow nature of vocabulary learning under truly incidental learning conditions (Hulstijn 1992; Paribakht and Wesche 1994; Schmitt 2012; Hulstijn 1992; Hulstijn et al. 1996; Swanborn and de Glosper 1999; Waring and Takaki 2003; Zahar et al. 2001). That is why direct instructions and active position of a learner, who is willing to be a part of the teaching-learning process and acquire different aspects of a new language, are of great importance. Paribakht and Wesche (1999: 215), for example, express the idea that “achieving any level of input processing requires both attention to a given new word and effort on the part of the learner to find its meaning”. According to the *Involvement Load Hypothesis* by Hulstijn and Laufer (2001: 545), “retention of unfamiliar words is, generally, conditional upon the degree of involvement in processing these words”, that is “who has set the task, whether the new word has to be searched, and whether it has to be compared, or combined with other words”. Moreover, the results of the few studies that compared the effectiveness of these two manners of vocabulary learning speak in favour of intentional learning. Coyne et al. (2007), for example, compared the effectiveness of extended instruction to embedded and incidental exposure to the target words while reading. The authors of the study concluded that extended instruction resulted in greater word learning than either incidental

exposure or embedded instructions. The results of Alemi and Tayebi's study (2011) showed that students from the intentional group performed slightly better than the subjects from the incidental one.

2.2. Authentic Video Material as Input for Vocabulary Learning

Authentic material is defined by Harmer (2003: 205) as natural language, which TL learners can "encounter (or will encounter) in real life if they come into contact with target-language speakers, and precisely because it is authentic, it is unlikely to be simplified, spoken slowly, or to be full of simplistic content". Nowadays, thanks to the advances in new technology, authentic videos have become part of the TL teaching-learning process. The omnipresent Internet, the website YouTube.com, SVOD (subscription video on-demand) and OTT (over-the-top) services, such as Amazon and Netflix, are only some of the sources that offer the new generation of *Digital Natives* (Prensky 2001) an unlimited access to authentic audio-visual material.

Watching authentic videos can have various benefits for TL learning. Firstly, they provide a combination of three types of input: video/image, sound and verbal information. The combination of verbal and non-verbal stimuli improves the processing of information (Paivio 1991; Sadoski 2005). The results of Sydorenko's study (2010), for example, showed that performing three tasks (watching a video, listening to it and reading captions) was better than performing only two tasks (watching video with captions or watching video with audio). The beneficial effect of subtitles/captions for new vocabulary learning has also been reported in many recent studies (see, for example, Baltova 1999; Zarei 2009; Frumuselu et al 2015; Montero Pérez et al. 2017; Chen et al. 2018; Pujadas and Muñoz 2019). Secondly, authentic videos can communicate with viewers on the emotional level (Cruse 2007), thus fulfilling the motivational function. King (2002), for example, explains that watching a complete film may enhance students' motivation because they become impressed with how much English they know and understand. Thirdly, authentic videos provide an opportunity for seeing how target language is used in different communicative contexts and, as a consequence, for cross-cultural awareness (Harmer 2003; Lin and Siyanova-Chanturia 2014).

Although viewing captioned authentic videos may provide certain advantages for learners of a new language, scholars still warn about possible difficulties they can pose. For one thing, authentic videos, unlike educational ones, are intended for native people (Lin and Siyanova-Chanturia 2014). As a result, the challenge of understanding natural language while watching videos can cause serious problems not only for beginners, but also for intermediate TL learners (Harmer 2003; Suárez and Gesa 2019). For example, knowledge of the most frequent 3,000 families is required in order to be able to understand 95% of the words in movies (Webb and Rodgers 2009). Also, according to the *Cognitive Load Theory* by Sweller (1988, 1994), learning difficulty may occur when learners have to simultaneously connect “between a large number of elements” (Sweller 1994: 304). Processing three types of input (audio, video and verbal information), therefore, may impose high cognitive load on TL learners and not allow them to acquire the target material. Finally, teachers and learners need to be careful and selective when choosing authentic videos, as some of them deal with controversial topics (Sathyanarayanan and Sheenu 2013).

2.3. The Effectiveness of Watching Authentic Videos for Vocabulary Learning

Nowadays, there is a growing body of research into the matter of the effectiveness of watching authentic videos for incidental vocabulary learning. A summary of some of the studies is reflected in Appendix A. When attention is paid to the methodology of these experiments, we can find certain similarities and differences in the design of the experiments. As is reflected in Appendix A, the experiments focused mainly on English as the target language, probably due to the current international status of this language (Dewi 2013; McKay 2018). Only two studies used Dutch, and Danish and French as the target languages (see D’Ydewalle and Van de Poel 1999 and Bisson et al. 2014).

Regarding the total exposure time to authentic audio-visual material, on the one hand, there are studies in which the viewing time does not exceed 1 hour (Koolstra and Beentjes 1999; D’Ydewalle and Van de Poel 1999; Yuksel and Tanriverdi 2009; Bisson et al. 2014; Peters et al. 2016). On the other hand, we have experiments with extensive exposure time to the audio-visual input (Zarei 2009; BavaHarji et al. 2014; Gorjian

2014; Frumuselu et al. 2015; Birulés-Muntané and Soto-Faraco 2016; Chen et al. 2018; Peters and Webb 2018; Pujadas and Muñoz 2019; Sinyashina 2019).

Concerning the language proficiency level of the participants, the majority of the studies were conducted with TL learners of intermediate proficiency level (see Yuksel and Tanriverdi 2009; Rodgers 2013; Gorjian 2014; BavaHarji et al. 2014; Birulés-Muntané and Soto-Faraco 2016; Peters and Webb 2018; Sinyashina 2019). There are also research papers that used mixed-level TL subjects (Frumuselu et al. 2015; Chen et al. 2018) and elementary level TL learners (Koolstra and Beentjes 1999; D'Ydewalle and Van de Poel 1999).

As for the data collection instruments, the studies by D'Ydewalle (1999), Peters et al. (2016) and Chen et al. (2018) used various post-tests to assess incidental learning of different aspects of word knowledge. At the same time, there are experiments that measured either one or two aspects of the target words (see, for example, Koolstra and Beentjes 1999 and Bisson et al. 2014 for the auditory aspect, and Peters and Webb 2018, Pujadas and Muñoz 2019 and Sinyashina 2019 for the aspects of word form and meaning). Several studies opted for the multiple-choice format of the post-tests (e.g. Zarei 2009; Gorjian 2014; Frumuselu et al. 2015; Sinyashina 2019).

On the whole, except for the three papers by Bisson et al. (2014), Peters et al. (2016) and Sinyashina (2019), the majority of studies report certain vocabulary gains while watching captioned/subtitled videos (Zarei 2009; Rodgers 2013; Gorjian 2014; BavaHarji 2014; Frumuselu et al. 2015; Chen et al. 2018; Pujadas and Muñoz 2019).

3. The Study

3.1. Research Questions and Hypotheses

This experiment was designed to study the effectiveness of incidental vocabulary learning while viewing 5 hours of captioned authentic audio-visual material. In order to do so, we compared the performance of the incidental group to the intentional and control ones in the three tests of word knowledge: form recognition, meaning recall and written use in a sentence. The tests were administered one week after the participants from the incidental group finished watching 5 hours of authentic TV series and the subjects from the intentional group took part in a one-hour

teaching session with the target vocabulary. Two research questions were addressed:

- Does watching 5 hours of captioned authentic TV series as a leisure time activity result in higher vocabulary gains in comparison to a 'no watching' condition (control group)?
- Does doing a set of vocabulary tasks during 1 hour of a classroom teaching/learning session give better results in the three tests of vocabulary knowledge (form recognition, meaning recognition and written use in a sentence) than watching 5 hours of captioned authentic videos?

We hypothesise that watching 5 hours of captioned authentic videos results in incidental learning of different aspects of new words. At the same time, incidental learning of different aspects of new words while viewing 5 hours of captioned authentic videos is not as effective as intentional learning of new lexis while doing three vocabulary tasks during one-hour classroom session.

3.2. Participants, Pre-experimental Questionnaire and Placement Test

Two weeks prior to the experiment, 97 first year students of the English Studies degree from the University of Alicante (Spain) answered a questionnaire about the videos chosen for the experiment (see Appendix B). We wanted to know whether they had seen it in their mother tongue or in English and if they were interested in watching it in English. The purpose of the questionnaire was to select participants who, firstly, had little or no previous knowledge of the TV series and, secondly, were interested in taking part in the experiment.

At this stage, the students were also asked to do a placement vocabulary test (see Appendix B), the purpose of which was to assess their level of English and select the subjects with similar proficiency level. According to the Spanish education law (the LOE + the LOMCE) (for more information, <https://www.boe.es/boe/dias/2013/12/10/pdfs/BOE-A-2013-12886.pdf> and <https://www.boe.es/eli/es/lo/2006/05/03/2/c on>), high school students (*Bachillerato* in Spanish), who pass this stage of education and begin their university studies, should have the B1 proficiency level of English (according to the CEFR). Bearing this idea in mind, the placement test was designed to discard the students who could show the knowledge of English higher than the B1 level.

To design the placement test, twenty words were chosen from the script of the first season of *The Big Bang Theory* TV series (see Table 1). In order to select the words for the pre-test, the *Range* program with BNC/COCA lists of 25,000 words by Nation (2017) and the Garnier and Schmitt's (2015) pedagogical list of phrasal verbs (the PHaVE List) were used. The first 2,000 or 3,000 of the BNC/COCA lists, which come with the *Range* program, are an alternative to the General Service List by Michael West. The PHaVE List contains 150 most frequent phrasal verbs with their frequency ranking order.

Table 1. Words chosen for the pre-test.

BNC/COCA word family lists (Nation 2017)	The PHaVE List (Garnier and Schmitt 2015)
baselist 1 – 1st 1000 words – upset, smooth	
baselist 6 – 6th 1000 words – to baffle, to woo	to turn out (12) ²
baselist 9 – 9th 1000 words – obnoxious, to brag	to figure out (21)
baselist 17 – 17th 1000 words – dibs	to show up (27)
baselist 33 – 33rd words – breakthrough,	to bring up (45)
noteworthy	to check out (49)
Not in the lists ¹ :	to break up (86)
a fling, a jerk, whiny, to weep	

When doing the placement test, the students were asked to circle and translate the words and the phrasal verbs that they considered as known. Bearing in mind the idea that B1 to B2 learners of English should have an approximate knowledge of 2,750 to 3,750 words (Meara and Milton 2003, cited in Milton and Alexiou 2009: 198), we selected only those

¹ We also included the words that were marked by the program as Not in the lists words

² The number refers to the frequency ranking order of the phrasal verbs as mentioned in Garnier and Schmitt (2015)

participants who did not circle and translate the words from the baselists 6, 9, 17 and 33, and marked as known the minimal number of the phrasal verbs.

Once the results of the pre-test were analysed, 32 out of 97 students were chosen for the experiment and three groups were formed (see Table 2).

Table 2. Participants.

Groups	Number of participants	Age	Male	Female	L1
Intentional	11	18-20	1	10	Spanish
Incidental	12	18-22	1	11	Spanish
Control	9	18-20	0	9	Spanish

3.3. Authentic Video Material

The first season of the *The Big Bang Theory* TV series was chosen as authentic video material for this study. This TV series was considered appropriate for the experiment, firstly, because each episode has an approximate running time of 20 minutes and, therefore, it can help to reduce and avoid viewer's fatigue and loss of interest and attention, which may take place when watching a longer film or video. Moreover, the TV series tells about the life of five young people and the author of this paper thought it could be interesting and engaging for the participants of the study who were teenagers and young adults.

The total running time of the 17 episodes used in this study was approximately 5 hours. The participants of the study, who were all Spanish learners of English as the target language, had to watch each episode with captions in English because previous research on the use of subtitled/captioned videos for new vocabulary learning revealed their positive effect for the incidental learning of different aspects of new words (Baltova 1999; Koolstra and Beentjes 1999; D'Ydewalle and De Bruycker 2007; Sydorenko 2010; Frumuselu et al. 2015; Montero Pérez et al. 2017; Pujadas and Muñoz 2019). No precise instruction concerning how to watch the episodes or regarding the intervals between viewings

was given to the participants: they could watch one episode at a time or several in a row.

3.4. Target Words

The *Range* program with BNC/COCA lists of 25,000 words (see Nation 2017) was used to select the target words for the experiment. Although most of the target words were of low frequency (they did not belong to the 6,000 most frequent words), we also chose one word from the 4,000-word list. The decision to include this word in the target words list was made because the B1 to B2 proficiency level participants were unlikely to be familiar with all the words from the 4,000-word list. Three phrasal verbs were also added to the target words list. The Garnier and Schmitt's (2015) PHaVE List was consulted to make sure that the phrasal verbs chosen for this study were not among the 150 most common ones. None of the phrasal verbs chosen for the experiment were detected on the PHaVE List.

The *Frequency* program, which is part of the *Range* program by Nation (2017), helped to determine the number of repetitions of the target words in the video material chosen for the study. The target words selected for the experiment had from 1 to 5 repetitions in the first season of the TV series.

Table 3 shows the target words chosen for the experiment and the results of the analysis for their inclusion in the target words list.

Table 3. Target words

Target words	Number of repetitions	BNC/COCA word lists / PHaVE List
a loofah	5	baselist 17
to screw up	4	not on the PHaVE List
heads-up	4	not on the lists
to back off	4	not on the PHaVE List
a loom	3	not on the lists
corduroy	3	baselist 10
puffy	3	baselist 4
to back down	2	not on the PHaVE List
geeky	1	baselist 12
a gurney	1	baselist 31

3.5. Vocabulary Tests

The tests were developed to measure the learning of three aspects of the target words: form recognition, meaning recognition and written use in a sentence. The measurement categories were based on the “dependent measures” designed by Webb (2008: 55). A multiple-choice test format was used to measure the learning of the form recognition aspect (see Appendix D). Each target word appeared along with two distractors. When designing the distractors, we bore in mind Webb’s (2008) idea that they should resemble the target words orthographically.

Meaning recognition was also assessed using a multiple-choice test (Appendix E). The target words were presented with three translations

into the participants' L1 (Spanish). We decided to use translation into the participants' mother tongue because sometimes the definitions in the target language can be more difficult than the words they define. The two distractors were of the same part of speech as the target words.

As for the aspect of written use in a sentence, the participants were asked to write sentences with the target words (Appendix F). Each sentence was analysed in terms of grammatical and contextual accuracy. A maximum of one point was awarded when the target words were correctly used in terms of grammar and the sentences provided an appropriate context for the target words. If the context reflected the meaning of the target words but the grammatical use was erroneous, then 0.5 points were awarded. A similar evaluation rule was applied to the sentences in which the grammatical use of the target words was correct but the context was vague or inappropriate.

3.6. Procedure

As was explained in Section 3.2, the participants of the study were distributed among three groups: intentional, incidental and control. The control group was used as a reference group to correct for the possible influence of the variables that were out of range of this study. The participants from the incidental group were assigned to watch the *The Big Bang Theory* TV series as a leisure time activity during 3 weeks. Each participant from the incidental group could choose to watch the episodes at the most appropriate time for them.

The subjects from the intentional group took part in a teaching session that lasted approximately one hour. The teaching session consisted of completing tasks with the target vocabulary (see Appendix C). In Task 1, the participants were asked to match the target words to their meanings and equivalents in Spanish, whereas in Task 2, they were asked to write the target words several times. In Task 3, the subjects had to answer questions using the target words. In general, the purpose of the three tasks was to draw participants' attention to the three aspects of new word knowledge (meaning, form and written use in a sentence) as well as provide an opportunity for practicing them. The learning of these three aspects by the three groups (intentional, incidental and control) was further assessed in the three vocabulary tests.

One week after the incidental group finished watching the first season of the TV series and the intentional group took part in the teaching-learning session, the three tests were administered. First, the participants did the form recognition test. After that, they were asked to complete the meaning recognition multiple-choice test and write sentences with the target words. The answer sheets of the three tests were given to the participants of the study in this sequence in order to avoid copying answers from one test to another.

3.7. Results

In order to answer the research questions, we compared the performance of the three groups in the three tests of word knowledge. First, the mean scores for each of the three groups were calculated (see Table 4).

Table 4. Mean scores out of 10 for the three groups.

Aspect	Intentional	Incidental	Control
form	9.27 (92.7%)	6.50 (65.0%)	6.11 (61.1%)
meaning	9.27 (92.7%)	5.67 (56.7%)	5.78 (57.8%)
written use in a sentence	4.05 (40.5%)	1.46 (14.6%)	1.39 (13.9%)

In the form recognition test, almost 93% of the participants from the intentional group answered correctly the multiple-choice test, whereas the subjects from the incidental and control groups managed to recognise the forms of 65% and 61.1% of the target words respectively. Similarly, the intentional group scored higher in the meaning recognition test: 92.7% of correctly recognised meanings of the target words in comparison to 56.7% and 57.8% of correct answers in the incidental and control groups. As for the aspect of written use in a sentence, considerably poorer performance is observed in the three groups in comparison to the form and meaning recognition aspects. Although 40.5% of the participants from the intentional group used the target

words correctly in the sentences, very low scores were obtained by the incidental (14.6%) and control (13.9%) groups.

A Kruskal-Wallis H test (2 degrees of freedom) was then applied to see if there was statistically significant difference among the three groups. The H test was chosen instead of the analysis of the variance (ANOVA) because we could not guarantee the normality of the data due to the low number of participants. The H test revealed significant differences among the three groups for each of the three aspects with the probability value p of 0.0003 for the form aspect and 0.0001 and 0.0005 for the meaning and written use in a sentence aspects, respectively. Table 5 shows the detailed results of the H test.

Table 5. Kruskal-Wallis H test results.

Aspect of a new word	H	p	Significance
form	16.44	0.0003	Significant
meaning	18.59	0.0001	Significant
written use in a sentence	15.40	0.0005	Significant

As the Kruskal-Wallis H test found a significant difference among the three groups, we then ran a Mann-Whitney U test to determine which of the three groups stood out. The U test was chosen instead of the t test due to the non-parametric data. To configure the test properly, the Bonferroni adjustment for the type I error was used. Having three possible comparisons, the α error was set at $0.05/3 = 0.0167$. Table 6 shows the results of the Mann-Whitney U test with the p value for three pairs of groups.

The U test showed no significant difference between the incidental and control groups for the three aspects (form recognition, meaning recognition and written use in a sentence). At the same time, significant statistical differences were observed between the intentional and incidental groups as well as between the intentional and control groups for the three aspects of word knowledge. Overall, the U test results suggest that the intentional group outperformed the incidental and control ones.

Table 6. Mann-Whitney *U* test results.

Aspects	Compared groups	<i>U</i>	<i>P</i> (bilateral)	Significance
form	intentional vs. incidental	15.5	0.0014	significant
form	intentional vs. control	3.0	0.0003	significant
form	incidental vs. control	37.5	0.2259	not significant
meaning	intentional vs. incidental	6.5	0.0002	significant
meaning	intentional vs. control	3.0	0.0002	significant
meaning	incidental vs. control	46.5	0.5796	not significant
written use	intentional vs. incidental	12.5	0.0006	significant
written use	intentional vs. control	9.5	0.0019	significant
written use	incidental vs. control	45.0	0.4450	not significant

3.8. Discussion and Conclusions

The aim of this paper was to examine the effectiveness of watching captioned authentic videos for incidental vocabulary learning. For this purpose, two research questions were stated. The first one asked whether watching 5 hours of authentic audio-visual material results in higher vocabulary gains in comparison to the ‘no watching’ condition. When comparing the results achieved by the control and incidental groups in the three tests, very similar scores were observed in both groups. Moreover, the *U* test did not find significant statistical difference in the results between these two groups. We, therefore, had to refute the first hypothesis, which states that watching 5 hours of captioned authentic video results in incidental learning of different aspects. Similar

performance of the incidental and control groups, in principle, indicates that the participants from the incidental group did not acquire the target words after having watched 5 hours of the TV series. In this sense, the results of our study are in line with previous research by Bisson et al. (2014), Birulés-Muntané and Soto-Faraco (2016), Peters et al. (2016) and Sinyashina (2019) as the authors of these papers did not find conclusive evidence of the effectiveness of watching authentic videos for incidental learning of new lexis. At the same time, there seems to be a contradiction between the results of the present study and those by Zarei (2009), Rodger (2013), Gorjian (2014), BavaHarji et al. (2014), Frumuselu et al. (2015), Peters and Webb (2018), Chen et al. (2018) and Pujadas and Muñoz (2019) as these studies reveal clear incidental vocabulary gains after the participants' exposure to subtitled/captioned authentic video material. I believe that this difference in the results between the current study and the ones mentioned above can be explained by the time of exposure to authentic audio-visual material. While in the present experiment the participants watched approximately 5 hours of the TV series, the other experiments focused on considerably longer viewing time (see Table 1 for more information). The variable of the time of exposure, however, does not explain the contradiction in the results between this study and the ones by Koolstra and Beentjes (1999), D'Ydewalle and Van de Poel (1999), Yuksel and Tanriverdi (2009), and Peters and Webb (2018). The total exposure time to authentic audio-visual material in the present experiment was longer than in these studies. In this case, the difference in the results may be attributed to the design of the experiments (e.g. the choice of the target words and video material, etc.) as well as to other variables, such as participants' proficiency level, motivation, aptitude, etc. (see Benati and Angelovska 2016; Malone 2018; Cervatiuc 2018 Lin and Siyanova-Chanturia 2010; Chen et al. 2018; Suárez and Gesa 2019). For instance, according to Lin and Siyanova-Chanturia (2010), Chen et al. (2018), and Suárez and Gesa (2019), participants' proficiency level is one of the crucial factors that affects language and vocabulary learning through watching captioned authentic videos. Authentic videos can result too challenging for beginners and intermediate learners, whereas TL learners with higher linguistic competence are more likely to learn new vocabulary while being exposed to captioned video material (Chen et al. 2018). In this study, we assume that the participants were of B1 moving to B2

proficiency level. Basing on this assumption, they were likely to have vocabulary knowledge of approximately 4,000 words (see Meara and Milton 2003, cited in Milton and Alexiou 2009). This vocabulary size, in principle, allows them to understand 95% of the words in movies (see Webb and Rodgers 2009). It is worth noting, however, that even though the placement test took place prior to the experiment and helped to discard the students who showed a higher knowledge of English than the B1 level, we cannot be completely sure that all of the participants were of B1 proficiency level. Some of the subjects could have had a lower proficiency level of English (e.g. A2, according to the CEFR) and, therefore, they were unlikely to know all the words from the 4,000 most frequent families. Following this line of reasoning, the cognitive load (Sweller 1988, 1994) of watching the episodes was probably too high and did not allow the participants to explore all the benefits that the audio-visual material had to offer for incidental new vocabulary learning. The subjects of this study may have gotten lost in unknown words and, therefore, could not focus on the target lexis. Moreover, apart from processing vocabulary, images and captions they had to deal with processing other aspects of the video, such as external references or grammatical forms (Suárez and Gesa 2019). Another factor related to the choice of the target words is concerned with their frequency and the total number of the target items. Almost all of the target words (except for the word *puffy*) were of low frequency, which could have made them less accessible and noticeable for the participants, who allegedly had the B1 proficiency level of English. What is more, the sample size of the target words chosen for the study was rather small. Bearing this limitation of the study in mind, we do not exclude the possible vocabulary gains that could have taken place for the words that were not in the target word list.

As for the second research question, a comparison of the scores of the incidental group to the ones achieved by the intentional one reveals a clear outperformance of the intentional group in the three tests of word knowledge. These results support the second hypothesis that says that incidental learning of three different aspects of new words while viewing 5 hours of captioned authentic videos is not as effective as intentional learning of new lexis while doing three vocabulary tasks during one-hour teaching/learning classroom session. The data of the present study clearly indicate that doing three vocabulary tasks in a classroom session is a more efficient way of new lexis learning than watching 5 hours of

captioned authentic videos, in which these target words were repeated from 1 to 5 times. This finding does not come as a surprise as many scholars speak in favour of direct instructions when it comes to new vocabulary learning (Hulstijn 1992; Swanborn and de Glopper 1999; Nation 2001; Schmitt 2008). What is more, previous research into this matter through the reading input also revealed better results of the intentional learning condition in comparison to the incidental one (Coyne et al. 2007; Alemi and Tayebi 2011).

All in all, similar scores of the incidental and control groups as well as the better performance of the intentional group suggest that watching 5 hours of captioned authentic TV series cannot be considered an effective way of new vocabulary learning for supposedly B1 level learners of English as the target language. Further experimental studies into this matter are required as they may shed light on the results observed in the present study. Future research should particularly consider the limitations of the current experiment related to the sample size of the target words and the participants, the frequency of the target words and some personal characteristics of the participants, such as their proficiency level, which could have been determined using one of the official vocabulary size tests (for example, Vocabulary Levels Test by Schmitt et al. 2001).

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Appendices

Appendix A

Studies into the effectiveness of incidental vocabulary learning through watching subtitled/captioned authentic videos

Author/s (year): Koolstra and Beentjes (1999)

Target language: English

Time of exposure: 27 min

Participants' proficiency level: elementary school children

Groups: subtitled condition, non-subtitled condition and control group (in the L1 language)

Measures: auditory word recognition

Findings: “young children can acquire elements of a foreign language through watching subtitled television” (Koolstra and Beetjes 1999: 58)

Author/s (year): D'Ydewalle and Van de Poel (1999)

Target language: French and Danish

Time of exposure: 10 min

Participants' proficiency level: children (8-12 years old)

Groups: 5 groups: Dutch subtitles and French sound track, French subtitles and Dutch soundtrack, Dutch subtitles and Danish sound track, Danish subtitles and Dutch soundtrack and a control group

Measures: three tests: vocabulary (translation in French and Danish), syntax and morphology

Findings: “real but limited foreign-language acquisition by children watching a subtitled movie, despite the short exposure time (10 min)” (D'Ydewalle and Van de Poel 1999: 242)

Author/s (year): Zarei (2009)

Target language: English

Time of exposure: 9 episodes approx. 30 min each + the same time of exposure at home

Participants' proficiency level: a 40-item multiple-choice vocabulary test (sub-section of the Michigan test)

Groups: 3 groups: soundtrack and subtitles in English; English soundtrack and Persian subtitles; Persian soundtrack and English subtitles

Measures: a 40-item multiple-choice vocabulary test

Findings: vocabulary learning took place in the three groups

Author/s (year): Yuksel and Tanriverdi (2009)

Target language: English

Time of exposure: 19 min

Participants' proficiency level: intermediate university students

Groups: 2 groups: captions and no captions

Measures: levels from Wesche and Paribakht's scale (1996)

Findings: "viewing the movies clip has helped the participants of the current study develop their vocabulary knowledge regardless of the absence or presence of captions" (Yuksel and Tanriverdi 2009: 52)

<p>Author/s (year): Rogers (2013)</p> <p>Target language: English</p> <p>Time of exposure: 10 episodes approx. 42 min each</p> <p>Participants' proficiency level: pre-intermediate to intermediate</p> <p>Groups: 2 experimental groups and a control group</p> <p>Measures: form and meaning</p> <p>Findings: incidental learning of vocabulary does occur through watching television (learners acquired approximately a quarter of the vocabulary)</p>
<p>Author/s (year): BavaHarji et al. (2014)</p> <p>Target language: English</p> <p>Time of exposure: 30 episodes approx. 50 min each</p> <p>Participants' proficiency level: intermediate (Michigan English Test, 2009)</p> <p>Groups: 2 groups: experimental (with captions) and a control (without captions)</p> <p>Measures: the MET and Content Specific Tests (CST)</p> <p>Findings: vocabulary gains recorded in both groups; better performance of the experimental group</p>
<p>Author/s (year): Bisson et al. (2014)</p> <p>Target language: Dutch</p> <p>Time of exposure: 25 min</p> <p>Participants' proficiency level: not specified</p> <p>Groups: 4 conditions: no subtitles, intralingual (L2 audio and L2 subtitles), standard (L2 audio and L1 subtitles), reversed (L1 audio and L2 subtitles)</p> <p>Measures: auditory vocabulary test (translation)</p> <p>Findings: no evidence of vocabulary acquisition</p>

<p>Author/s (year): Gorjian (2014)</p> <p>Target language: English</p> <p>Time of exposure: 8 sessions, 30 min long</p> <p>Participants' proficiency level: intermediate</p> <p>Groups: 3 groups: bimodal subtitles, standard subtitles and reversed subtitles</p> <p>Measures: not specified (multiple-choice test)</p> <p>Findings: the mean scores of the participants in all groups have increased from pre-test to post-test</p>
<p>Author/s (year): Frumuselu et al. (2015)</p> <p>Target language: English</p> <p>Time of exposure: 13 episodes, 25 min each</p> <p>Participants' proficiency level: mixed level, from A2 to C1</p> <p>Groups: 2 groups: English sound + English subtitles; English sound + Spanish subtitles</p> <p>Measures: the 30-item post-test (multiple choice and open questions)</p> <p>Findings: vocabulary gains in both groups</p>
<p>Author/s (year): Birulés-Muntané and Soto-Faraco (2016)</p> <p>Target language: English</p> <p>Time of exposure: 1 hour</p> <p>Participants' proficiency level: intermediate</p> <p>Groups: 3 conditions: subtitles in L2, subtitles in L1 and no subtitles</p> <p>Measures: definition matching</p> <p>Findings: no conclusive evidence for a clear acquisition of new vocabulary after watching the episode</p>

Author/s (year): Peters et al. (2016)

Target language: English

Time of exposure: Experiment 1: 13 min; Experiment 2: 20 min

Participants' proficiency level: Experiment 1: intermediate level;
Experiment 2: proficiency level

Groups: Experiment 1: L2 captions group and L1 subtitles group;
Experiment 2: L2 captions group and L1 subtitles group

Measures: Experiment 1: spoken form recognition and spoken meaning
recognition;

Experiment 2: written form recall, written form recognition and written
meaning recognition

Findings: in general low vocabulary learning gains

Author/s (year): Chen et al. (2018)

Target language: English

Time of exposure: 10 episodes, 9 min each

Participants' proficiency level: mixed (high-level, intermediate-level
and low-level)

Groups: 2 groups: with and without the captions, further subdivided
into three groups (high-level, intermediate-level, and low-level)

Measures: phonological form recognition and form-meaning mapping

Findings: vocabulary gains in the form recognition and form-meaning
mapping post-tests occurred at all levels

<p>Author/s (year): Peters and Webb (2018)</p> <p>Target language: English</p> <p>Time of exposure: approx. 1 hour</p> <p>Participants' proficiency level: intermediate</p> <p>Groups: Experiment 1 and 2: experimental and control groups</p> <p>Measures: Experiment 1: spoken form recognition + meaning recall; Experiment 2: meaning recognition</p> <p>Findings: positive effect of viewing TV on word learning; “substantial learning gains particularly at the level of meaning recall and meaning recognition” (Peters and Webb 2018: 19)</p>
<p>Author/s (year): Pujadas and Muñoz (2019)</p> <p>Target language: English</p> <p>Time of exposure: 24 episodes, approx. 20 min each</p> <p>Participants' proficiency level: secondary school students</p> <p>Groups: 4 different captions conditions</p> <p>Measures: form recall and meaning recall</p> <p>Findings: “Results showed that participants learnt vocabulary in all four conditions.” (Pujadas and Muñoz 2019: 1)</p>
<p>Author/s (year): Sinyashina (2019)</p> <p>Target language: English</p> <p>Time of exposure: 16 episodes, approx. 20 min each</p> <p>Participants' proficiency level: pre-intermediate</p> <p>Groups: 2 groups: control group and incidental group</p> <p>Measures: form recognition and meaning recall</p> <p>Findings: although the incidental group performed better than the control one in the two post-tests, a broad range of results is observed in the sample</p>

Appendix B

Pre-experimental questionnaire and placement test

1. Have you seen the *The Big Bang Theory* TV series in Spanish?
Yes No
2. Have you seen the *The Big Bang Theory* TV series in English?
Yes No
If no, would you like to watch it in English?
Yes No
3. If you have seen the *The Big Bang Theory* TV series either in English or in Spanish, did you enjoy watching it?
Yes No
4. Do you know the words below? Please, circle the words you know and translate them into Spanish.

upset
smooth
to baffle
to woo
obnoxious
to brag
dibs
breakthrough
noteworthy
a fling
a jerk
whiny
to weep
to check out
to turn out
to figure out
to show up
to break up
to bring up

Appendix C
Tasks for the intentional group

Task 1. Match the words to their definitions in English and equivalents in Spanish.

<p><i>corduroy</i></p> <p><i>a loofah</i></p> <p><i>geeky</i></p> <p><i>a loom</i></p> <p><i>to back down</i></p> <p><i>a gurney</i></p> <p><i>puffy</i></p> <p><i>to back off</i></p> <p><i>heads-up</i></p> <p><i>to screw up</i></p>	<ol style="list-style-type: none"> 1. a vegetable sponge 2. a device for weaving things 3. to stop trying to make someone do or think something 4. swollen in appearance 5. a person who is considered to be different from others, especially a teenager who is socially awkward or spends too much time studying or is interested in computers. 6. a flat table with legs and wheels for transporting patients or bodies 7. to accept defeat 8. a cotton fabric with ridges 9. to make a mess, to ruin something 10. a warning 	<ol style="list-style-type: none"> a) esponja de lufa b) una camilla para transportar enfermos c) de pana d) un telar e) hinchado f) apartarse, dejar de molestar o hacer algo g) echarse para atrás, retroceder h) un aviso i) friki, interesado/a en la tecnología j) fastidiar algo
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Task 2. Write each word from the previous task four times.

Task 3. Answer the questions using the words in brackets.

- 1) – What are you going to wear to this meeting?
– _____ (corduroy).
- 2) – Where did you put the patient?
– _____ (a gurney).
- 3) – What do you think I should do? She keeps ignoring me.
– _____ because _____ (to back down).
- 4) – How does his face look?
– _____ because _____ (puffy).
- 5) – What do you use this item for?
– _____ (a loom).
- 6) – What's he like?
– _____ because _____ (geeky).
- 7) – I found this in your bathroom. What is it and what do you use it for?
– _____ (a loofah).
- 8) – What do you want me to do?
– _____ because _____ (to back off).
- 9) He's a very dangerous person.
– _____ (heads-up).
- 10) How did the meeting go?
– _____ (to screw up).

Appendix D
Form recognition test

Your ID Number:

Age:

Circle the correct spelling of the following English words.

- | | | | |
|-----|-----------------|----------------|-----------------|
| 1. | a) a loofa | b) a loofah | c) a lufa |
| 2. | a) to beck off | b) to back of | c) to back off |
| 3. | a) cordury | b) corduroy | c) codury |
| 4. | a) to beck dawn | b) to bak down | c) to back down |
| 5. | a) paffy | b) puffo | c) puffy |
| 6. | a) geeky | b) geecky | c) giecky |
| 7. | a) a garney | b) a gurney | c) a gurnye |
| 8. | a) a loom | b) a lum | c) a loome |
| 9. | a) heds-up | b) heads-up | c) head-up |
| 10. | a) to skrew up | b) to skrew up | c) to screw up |

Appendix E
Meaning recognition test

Your ID Number:

Age:

Choose the correct Spanish equivalent of the following English words:

- 1) a gurney
a) una silla b) una camilla c) una hamaca
- 2) geeky
a) un/a friki, interesado/a en la tecnología b) un/a cotilla c) un/a tonto/a
- 3) a loofah
a) una tela de lufa b) una esponja de lufa c) una manopla de lufa
- 4) puffy
a) cansado/a b) hinchado/a c) engreído/a
- 5) corduroy
a) de fibra b) de pana c) de algodón
- 6) to back down
a) retroceder b) apartarse, dejar de hacer algo c) agacharse
- 7) to back off
a) girarse b) apartarse, dejar de hacer algo c) agacharse
- 8) a loom
a) la luz de luna b) un telar c) una sonrisa cálida
- 9) heads-up
a) levantar la cabeza b) un aviso c) creerse mejor
- 10) to screw up
a) liar algo b) enroscar c) dar vueltas

Appendix F

Written use in a sentence test

Your ID Number: Age:

Make up sentences with the following English words.

1. a gurney
2. heads-up
3. to screw up
4. to back off
5. a loom
6. to back down
7. corduroy
8. puffy
9. a loofah
10. geeky