

The Effect of Subtitling on the Learning Effectiveness of Second Language Acquisition

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Abstract:

Learning a second language has been prevalent along with the globalization of the world. Quite a few people have started to utilize multimedia tools to achieve their learning goals. Subsequently, whether videos with or without captions would be more beneficial for learning has been heatedly discussed. To find the most effective way to learn and figure out the function of the second learning acquisition, this paper mainly focuses on the recent experiments of captioned videos influencing second language learning. Accordingly, captioned video has its merits, which promote learners' listening competence. However, some people argue that watching captioned videos would also burden learners' cognitive load, weakening their learning effectiveness. Based on this, some suggestions are raised to explore how to improve learners' second language learning according to the influencing factors, including learning styles, learners' reliance, and the presentation format of the videos. Therefore, it was suggested that there is a need to explore ways to meet different learners' needs and address the visual and auditory imbalance.

Keywords: Video captioning, listening comprehension, second language acquisition

1. Introduction

Multimedia technology continues to advance, greatly benefiting second language learning. Both students and educators are embracing many multimedia platforms, incorporating text, images, audio, animation, and subtitles to enrich vocabulary, listening and reading comprehension, and grammar skills. Listening comprehension, a pivotal aspect of second language acquisition, is frequently honed through foreign language videos. By immersing themselves in native speech patterns, learners grasp vocabulary nuances, discern grammar rules, absorb intonation, and interpret contextual expressions. These videos often feature translations in multiple languages to facilitate comprehension. Nevertheless, individuals may hesitate to activate captions due to the potential distraction from the visual stimuli, which can impede auditory processing.

According to Tahmina, utilizing videos for learning can enhance the appeal of English education and foster both speaking and listening comprehension skills among students [1]. Several studies have demonstrated a positive correlation between captioning and heightened comprehension [2-4]. Viewing videos with captions aids in reinforcing the memory of language segments and facilitates vocabulary acquisition in the target language. This method

lets students absorb vocabulary, grammatical structures, and pronunciation patterns showcased in the video [5]. Furthermore, captions assist learners in deciphering words and phrases that may be challenging to discern due to factors such as speaker accent or speed [6]. They bridge the gap between students' reading and listening proficiencies, enhancing overall comprehension of the audio content. Consequently, many scholars advocate for providing captions as an effective strategy to support second language learners.

However, experimental studies have revealed that many learners struggle to balance reading subtitles and listening to the video content. Individuals often prioritize reading the subtitles, resulting in a diminished focus on auditory processing [7]. Moreover, the inundation of information on a single screen can further detract from the learner's ability to concentrate on the foreign language input [7]. Additionally, other factors may influence learners' utilization of subtitled videos in second language acquisition. Given that listening constitutes one of the fundamental language skills, this essay aims to investigate the impact of subtitling on enhancing second language learning efficiency. Through this exploration, a deeper understanding of the mechanisms and processes involved in language acquisition can be attained.

2. Relationship between Second Language Learning and Listening

2.1 Characteristics of the Second Language Learning

In second language acquisition, “second” refers to any language learned after the mother tongue. The process can be termed second language acquisition, whether acquired naturally in everyday life or through formal classroom instruction [8]. Second language learners, regardless of background, have already acquired proficiency in at least one language. As a result, learners understand certain language principles, which can be beneficial in acquiring a second language [9]. Moreover, learners have accumulated a wealth of knowledge about the world, which also aids in their second language acquisition [8]. Ellis points out that even when encountering concepts that are challenging to translate directly into the second language, learners can use their existing second language Knowledge base to articulate their thoughts and ideas [8]. However, when learning a second language, the influence of the previously mastered language can sometimes result in errors in usage [9].

2.2 Impact of Caption on Listening

The use of captioned videos for second language learning has been extensively researched and proven to positively impact learners. According to Embodied Cognition Theory, training with multimodal stimuli, such as visual, auditory, and motor inputs, creates a multisensory experience that optimizes the learner’s brain function [10]. By providing joint input of audio, visual images, and subtitled text, captioned videos help reduce the cognitive workload associated with comprehending and processing video information [10].

Quite a few studies prove that using captioned video benefits second language learning. In the experiment by Hsieh, students with intermediate English proficiency demonstrated significantly improved listening comprehension when exposed to captioned videos in the test [2]. The clear layout of captions facilitated a better understanding of key points [2]. Similarly, Lee et al. found that learners who relied more on captions experienced greater learning benefits when watching captioned videos [3]. Visualizing speech through captions helped students comprehend the content more effectively. Furthermore, watching videos with captions enhances learners’ listening comprehension and aids in segmenting auditory input into meaningful components. In these experiments, visual captioning helps learners to have better listening comprehension observably, expediting their acquisition of the content and en-

hancing the mastery of the key knowledge. These findings collectively demonstrate the positive impact of captions on learners’ listening comprehension in second language acquisition, highlighting the effectiveness of multisensory stimulation in optimizing learning through captioned video watching.

Numerous studies have invoked the cognitive load theory when employing captioned videos as a learning tool. This theory posits that if learners are inundated with more information than they can effectively process, it results in information overload and a subsequent decline in learning efficiency. Proponents argue that captions in language learning are supportive aids, facilitating comprehension and thus reducing the cognitive burden on students [4]. However, dissenting voices contend that the presence of captions as supplementary information adds to the cognitive load during information processing, thereby diminishing learning efficiency [7]. Consequently, several researchers and scholars have undertaken various experiments to substantiate their perspectives.

Chai and Erlam recruited some ESL students from two language schools in Auckland, all of whom were Chinese and had IELTS scores ranging between 5 and 6 [7]. The participants were instructed to watch a selected movie, and when the caption appeared, they showed a noticeable tendency to prioritize reading the captions. Most participants reported that captions clashed with the audio, making it difficult to simultaneously read and listen. Additionally, when visual images were present, captions competed with them as well [7]. Some participants noted that after reading the captions, there was insufficient time to view the accompanying pictures, consequently affecting their listening comprehension. A similar issue occurs in Hwang’s experiment, where reflective students, who prefer observation and contemplation, faced challenges when watching captioned videos at accelerated speeds [4]. They reported insufficient time to engage in their characteristic reflective thinking, resulting in heightened mental exertion and increased cognitive load [4]. These studies show that when excess information appears in the videos, learners’ cognitive load is overloaded. Although captioned videos could improve learners’ acquisition of a second language, inappropriate presentation would weaken learning effectiveness. Moreover, different forms of captioning need to be adjusted to satisfy various learning styles.

2.3 Factors Affecting Captions and Learners’ Listening Comprehension

Many studies focus on factors influencing captions and learners’ listening comprehension to find more effective learning modes through captions. Hwang et al. explored

how learning styles influence learners' acquisition of second language learning by watching captions. Learning styles denote the tendencies of individual learners to comprehend and acquire new knowledge. Active learners typically engage in interaction and hands-on experiences, while reflective learners prefer observation and contemplation. Consequently, students with these distinct learning styles were selected for a study to assess their learning and perceptual performance when utilizing instructional videos with varying captions [4]. The study involved three eleventh-grade classes in a Taiwanese high school, where students practiced listening to a foreign language using videos featuring partial captions, full captions, and partial captions with translations. Findings revealed that reflective students were more inclined to utilize full captions, which furnish additional information aiding their reflective thinking, whereas active students benefitted more from partial captions. Partial captions, containing only keywords, facilitated active engagement with the course material, offering hints while minimizing cognitive load. Due to the individual variation among learners, course designers could tailor the captions in teaching videos according to learning styles. Additionally, learners can choose suitable videos with captions based on their learning styles to enhance their efficiency in second language acquisition.

Learners' reliance on captions is another factor that significantly influences the second language acquisition process. According to Lee et al., the most proficient learners tend to depend heavily on captions, particularly when provided with full captions [3]. Full captions aid in visually parsing auditory input, enhancing speech decoding, and facilitating smoother comprehension of video content. Conversely, partial captioning is deemed less effective for these caption-dependent learners due to the distractions and abrupt nature of the captions. Among them, static captions outperform dynamic ones in terms of comprehension facilitation.

Interestingly, despite those learners relying on captions, the experiment revealed that completely turning off captions did not diminish their video comprehension. Instead, they utilized cues such as facial expressions and gestures to understand the content [3]. In contrast, learners less dependent on captions may benefit from partial captions, which reduce cognitive load and enable greater focus on auditory input. However, these learners expressed discomfort with partial captions during the experiment, finding them distracting. Nonetheless, the presence of partial captions optimized their video comprehension. On the other hand, full captions were deemed overly visually stimulating, increasing cognitive load and thereby reducing

learning efficiency for this group. Although learners could benefit from suitable captioned videos, they are likely to feel uncomfortable with them, which may diminish their learning effectiveness. Therefore, it is essential to use appropriate types of videos in different situations, and using videos without captions would be another alternative for learning.

The presentation format of videos, whether with or without captions, also influences learners' learning outcomes. Alabsi conducted experiments where learners of Arabic, Chinese, Russian, and Spanish as a second language were exposed to videos with and without captions [10]. Results indicated that when videos were initially shown with captions and without them, learners demonstrated a better understanding of vocabulary through listening recognition. They were more adept at identifying new vocabulary than learners who experienced the reversed order of video presentations [10]. This effect was attributed to captions capturing learners' attention, aiding in pinpointing key points in the video, thus enabling them to gather additional information upon subsequent viewings. By watching captioned videos, learners can become familiar with the content of the video and recognize the words of each sentence, which enables them to concentrate more on the knowledge they did not know before through listening to the following video.

3. Suggestions

The presence of captions in videos significantly impacts students' listening skills, with studies indicating that students benefit more from captioned videos than those without. Therefore, regardless of students' proficiency levels, future studies are suggested to find suitable captioned videos for students' different learning types. This necessitates ongoing experimentation to understand students' learning patterns and identify effective viewing methods within the context of actual learning.

In addition, there is still a need to explore and experiment with enhancing the overall efficiency of watching captioned videos, balancing visual and auditory stimuli, and facilitating students' listening skill practice. According to the experiment of Chai and Erlam, it is essential to find methods to solve the problem of unbalancing between listening and watching, focusing on the students who have this problem [7].

4. Conclusion

To sum up, captioned videos could help learners promote their listening competence, while each person's degree is different. Therefore, although there are some drawbacks for some people to use captioned videos to learn, such

as burdening their cognitive load and diverting their attention, people could gain more benefits from watching captioned videos than not, and scholars are suggested to explore more detailed instruction for various learners to use captioned videos. Furthermore, there are still several unanswered questions in caption research. For instance, it remains unclear what aspects learners primarily focus on when watching captions—comprehending the sentence’s meaning, acquiring new vocabulary, or something else entirely. It is vital to find out which aspect should be trained in this progress and how to facilitate the improvement of other aspects. Moreover, it must be explored that learners at different learning levels have different needs for captioning. Due to different cognitive levels and knowledge reserves, there might be some distinctions between various learners. It is valuable to find ways to cater to the diverse learning needs of individuals. It is also worth examining whether learners ignore captions when watching captioned videos, which can let course designers know how to convey the key information through the captioned videos. These questions merit further investigation into how captions impact language learning across diverse learner populations.

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