

# Impact Of Captioned Videos On Inference Generation Of ESL Learners

Misbah Yasmeen<sup>1</sup>, Muhammad Adil Wazeer<sup>2</sup>, Sadiq Mazari<sup>3</sup>, Farzana Ismail<sup>4</sup>

<sup>1</sup>Lecturer Govt. Associate College (W), Liaquat Pur [misbahyasmeen87@gmail.com](mailto:misbahyasmeen87@gmail.com)

<sup>2</sup>Teaching Assistant Khwaja Fareed University of Engineering and Information Technology, Rahim Yar Khan [muhammadaadilwazeer@gmail.com](mailto:muhammadaadilwazeer@gmail.com)

<sup>3</sup>M.Phil Scholar Khwaja Fareed University of Engineering and Information Technology, Rahim Yar Khan [sadiqmazari@yahoo.com](mailto:sadiqmazari@yahoo.com)

<sup>4</sup>Lecturer Khwaja Fareed University of Engineering and Information Technology, Rahim Yar Khan [Fizaasif291@gmail.com](mailto:Fizaasif291@gmail.com)

## Abstract

This quantitative study aimed to evaluate the impact of captioned videos on inference generation of ESL learners. For this research work, 200 ESL learners enrolled in Associate Degree program at public colleges for women of District Rahim Yar Khan were selected using cluster random sampling. The responses of these ESL students were obtained via Google form. This Google form was based on a questionnaire having acceptable reliability (i.e. Cronbach Alpha Coefficient ( $\alpha$ ) = 0.77 > 0.70). This questionnaire was designed by the researcher focusing on possible potent and impotent effects of captioned videos on inference generation and its essential factors i.e. background knowledge, vocabulary knowledge and memory. Pilot study was conducted involving 12 students of ADP to obtain a reliable questionnaire. Later on, descriptive statistics was analyzed using the collected data. Findings of frequency statistics showed that captioned video had a beneficial effect on background knowledge of the students. While all the negative effects of captioned videos on background knowledge were negated by ESL learners. As far as vocabulary knowledge was concerned, it was affected by captioned video in both positive and negative perspectives. Memory of students was also influenced by the manipulation of captioned videos. As well, proficient generation of inference was also provoked with the use of captioned videos according to the perceptions of ESL learners.

**Keywords:** Captioned video, inference generation, inference making challenges, ESL learners, teaching strategy

## 1 Introduction

Inference generation is a great challenge for ESL readers. It is a high cognitive skill that contributes a lot to perceive the text (Rapp, Broek, McMaster, Kendeou, & Espin, 2007). This skill reinforces the ESL learner to move from literal meaning to global meaning that joints numerous sentences (Best, Rowe, Ozuru, & McNamara, 2005). This reinforcement to shift the attention from local to global meaning pushes the ESL learners in a zone of difficulty. Yuill and Oakhill (1991) advocated this and stated that less skilled ESL learners had poor

potential to respond inferential queries. Even rereading also did not facilitate them.

### 1.1 Inference Generation

Inference generation is a complex linguistic activity. Both bottom-up skills (i.e. working memory and decoding skills) and top-down skills (i.e. inference generation) move on simultaneously and separately. Various studies have evaluated the effect of bottom up skills on comprehension of text. On the other hand, many research work emphasized on more focus for top-down skills i.e. inference generation

(Rapp et al., 2007). A few studies have contributed in research field by concentrating on this less focused skill along with background knowledge by devising different strategies to enhance the procedure of reading comprehension (Taboada & Guthrie, 2006). Being a high ordered cognitive skill, less skilled ESL learners come across great trouble in the process of perceiving the text. Oakhill, Cain, and Elbro (2014) have stated vital problems related with inference generation. These problems are linked with memory, background knowledge, vocabulary knowledge and standard of coherence. These problems of inference generation hinder the ESL learners to comprehend the text efficiently. In this context, multiple strategies have been used to boost bottom-up and top down skills dealing with their problems. Captioned videos can also be enlisted within these strategies. As videos with caption serve as an influential teaching mechanism that is assumed to trigger reading and listening comprehension competence (Borrás & Lafayette, 1994; Danan, 2004; Markham & Peter, 2003).

## 1.2 Captioned Videos

Video with captions smooth the progress of learning a language. It gives a helping hand to ESL learners by imagining the audio data, particularly if the audio data does not match with their lingual skill (Danan, 2004). Bird and Williams (2002) have asserted that captioned videos also enhance the understanding of language through provision of supplementary cognitive ways like “greater depth of spoken-word processing”. Captions of videos can work as an incentive as they lend a hand to learners for building a connection between aural and visual data (Garza, 1991). This stirred connectivity also helps to figure out “form-meaning mapping” that facilitates the process of second language learning (Doughty, 2004).

In this regard, Winke, Gass, and Sydorenko (2010) have also asserted that caption support the identifications of word boundaries. It

enables the learner to slice unintelligible verbal torrent. Nonetheless, their study has addressed a query that is concerned with both supposition and pedagogy. This query was “what learners actually do with captions when they are presented with them”. This study evaluated how the learners deal with captions. Whether they focus on captions fully or partially and how the balance between aural, visual and textual material is maintained. Previous research has examined that videos with captions serve more as a distracter rather than a facilitator for learners of less capability (Gregory Taylor, 2005). Despite that all learners show great inclination towards captioned videos.

In this context, Baltova (1994, p.33) has also elaborated that films adorned with captions “provide simultaneous exposure to spoken language, printed text and visual information, all conveying the same message, and so promote content and vocabulary learning even in relatively inexperienced learners”. Along the same line Koskinen (1993, p.36) has demonstrated captioned videos as a blend of “actions with spoken dialogues and printed words”. These videos can also be defined as a remarkable instrument having a “promising approach for improving students’ reading comprehension, vocabulary and motivation”.

Instead of approving results regarding videos with captions (Canning-Wilson & Wallace, 2000; Hinkin, 2009; Hwang & Huang, 2011), instructors as well learners seemed anxious about their usage and advantage in the process of learning and teaching the language. This trouble was also pointed out by Danan (2004). He accentuated that first exposure of subtitled videos had disturbed the learners as well as teachers. They found such videos as a source of distractions. They supposed that such videos directed the students to depend on printed text, diverted their focus from vocals and developed “a form of laziness bordering on cheating”. G Taylor (2005) also regarded subtitles as a distraction tool. Same perception of agitation

was observed among the Iranian language teachers who were inquired before the start of the research. Majority of the teachers did not recommend the employment of captions during the screening of educational videos. They encouraged the learners to comprehend the dialogues in aimed language with their projection on videos with no captions.

In contemporary era of technology, there is an indispensable need of various technological ways for boosting inference generation of ESL readers (Cross, 2011). To facilitate this requirement, this study has interrogated ESL readers about the efficacy of captioned videos for inference generation that is completely ignored in the field of research. Previous researches have shown inconsistent results about the efficacy of captioned videos for enhancing bottom-up skills of reading comprehension. But the intervention of captioned videos for inference generation has never been adopted in research works. This study will deal with ESL learners' perceptions about the employment of captioned videos for improving top-down skill i.e. inference generation in classroom context. This survey will obviously pave the way for teachers to manipulate the captioned videos for inference generation and its integral factors in more refined and appropriate way.

### **1.3 Statement of the Purpose**

Inference comprehension is a complicated but a vital constituent of English comprehension. It is a top down skill that involves textual and contextual knowledge. Good background knowledge, fertile vocabulary and retentive memory are important ingredients for efficient generation of inference. But ESL learners find themselves in great trouble to generate inferences in English text. Having no resources of being facilitated with input of English data, ESL learners perceive English language as a horrifying language. Poor memory, inappropriate vocabulary and irrelevant background knowledge throw them in a gulf of

stress. This critical situation has manipulated the idea of interrogating ESL learners about the impact of captioned videos on inference generation. As visual clips blended with vocals cast a constructive effect to develop memory, vocabulary and background knowledge.

### **1.4 Objectives of the Study**

1. To find out how captioned videos affect inference generation of ESL learners.
2. To identify how captioned videos work on background knowledge of ESL students.
3. To determine how captioned videos influence vocabulary knowledge of ESL learners.
4. To analyze how captioned videos affect memory of ESL students.

### **1.5 Research Questions**

1. How do captioned videos affect inference generation of ESL learners?
2. How do captioned videos work on background knowledge of ESL students?
3. How do captioned videos influence vocabulary knowledge of ESL learners?
4. How do captioned videos affect memory of ESL students?

### **1.6 Significance of the Study**

This study will be a remarkable contributor in pedagogical and andragogical tools for ESL teachers. It will also pave the way for learners to exploit it for building up proficient acquisition of inference generation. Moreover, it will extend research literature related to inference generation that is not yet focused with its vital attributes.

### **1.7 Delimitation of the Study**

This study involved only the female ESL learners of undergraduate level at public colleges for girls in district Rahim Yar Khan.

Moreover only three problems of inference generation i.e. poor memory, weak vocabulary and inappropriate background knowledge were focused concerning the impact of captioned videos.

## 2 Literature Review

Inference generation is a complicated but significant factor for efficient reading comprehension. Kopitski (2007) had accentuated the importance of inference generation by describing that major strength of her students were less efficient in reading comprehension due to their inefficiency for inference generation. She elaborated this factor of reading comprehension as “an ability to make reasonable predictions before, during and after reading”. She also assured that inference generation is mandatory for comprehending, identifying causal effects, abridging and integrating information from multiple types of printed text. Thus, inference generation facilitates the students to detect the implicit and explicit meaning of the text in true sense. So, it is important to train the students how to generate inference for becoming a skilled reader.

The importance of inference generation, a top-down skill, was also delineated by Rosenberger (2011). He conducted a study involving the students of 4<sup>th</sup> grade to find out the effect of different strategies on inference generation. The findings of his study showed that strategies like read aloud, reciprocal teaching, question generation by instructor and mental model gave a helping hand to enhance inference generation of the students. Later on, the study of Tarchi (2015) also chosen inference generation for his study and drew the result that strategy based on background knowledge assisted the students to speed up the process of inference generation.

Inference generation of “individuals with mild cognitive impairment” was also focused by many researchers (Silagi et al., 2020). These researchers evaluated the impaired learners’ skill of inference generation by using test of

listening comprehension (Freed & Cain, 2017), provoking background knowledge and inference generation for increasing reading comprehension of non-fictional text (Tarchi, 2015), using comprehension queries and story restating strategies (Freed & Cain, 2021).

Being an integral component of inference generation, memory has been associated with inference generation in multiple research works. Weak memory has been a reason for poor comprehension in less skilled readers as compared to good memory in skilled readers. As memory based activities besides memorization of words and numbers demand for good memory and poor readers have its deficiency. In contrast, skilled readers have retentive memory that empowers them to connect the scattered information in text and to utilize the prior knowledge for detecting the implicit information (Cain, Oakhill, & Bryant, 2004).

Insufficient knowledge hurdles less skilled learner to generate inference and to get pleasure from the stream of comprehension. Different researches have proved that knowledge (including both vocabulary and background knowledge) are central components for constituting good inference generation (Cain & Oakhill, 1999). Findings of Weekes, Hamilton, Oakhill, and Holliday (2008) Lepola, Lynch, Laakkonen, Silvén, and Niemi (2012) have also approved that poor activation of background knowledge and poor vocabulary do not let poor readers to get an access of suitable word meaning. This generates sluggish spontaneous connection with text. This inefficiency in vocabulary and background knowledge also represents that some features of inference generation cannot be controlled. Research of Cunningham (2005) has certified the idea that healthy vocabulary enhances ESL learners ability to generate inference. There is a reciprocal link between enhancement of vocabulary and comprehension of text.

Another factor of difficulty for generating inference is standard of coherence. This

attribute deals with semantic connection to extract the central idea of the text. This skill differs along with type of text and task. Research of Van den Broek, Lorch, Linderholm, and Gustafson (2001) have elaborated that ESL learners have employed that skill more consciously when they have read the text to get high grades rather than reading the text only for pleasure. But this practice is more common in good readers as compared to less skilled readers. Concisely, good vocabulary knowledge, timely activation of relevant background knowledge and strong memory are interconnected for generating good inferences. This connectivity have highlighted that there may be various commonalities among problem factors of vocabulary knowledge, background knowledge, memory and finally of inference generation.

## 2.1 Theoretical Framework for Captioned Videos

Caption can be defined as “a type of on-screen textual information presented in learners’ target language”. According to Danan (2004), caption develops a link among “image sound and text”. Mayer and Mayer (2005) have elaborated that efficient learning takes place when multimedia directions assist ESL learners to decrease their irrelevant cognitive stack and increase their relevant cognitive stack in their process of learning. According to this theory, the amalgamation of picture, voice and text in captioned videos may urge the students to conceive, comprehend and blend the novel data in their memory (Plass & Jones, 2005). At the same time, distraction of students’ focus may also cause the unproductive learning. As only videos are not enough to perceive and retain words in their memory (G Taylor, 2005). Visual aids like Focus-triggering captions may be required for presentation to retrieve the meanings of these words

Inclusion of multimedia technologies in the field of education has introduced various vocal, visual and oral stimulants that support the

improvement of comprehension through interaction with sensory channels (Hsia, 1971). Clark and Paivio (1987) also presented that information given through words and pictures motivate verbal and visual codes which are interlinked. Research studies of (Garza, 1991; Winke et al., 2010; Zanón, 2006) also supported sensory channels to accelerate visual and verbal coding system rather than words or pictures only. (Koskinen, 1993) emphasized that “captioned television provides a presentation of information that included opportunities to view the video action, hear the spoken word, and see the printed text”. (Zanón, 2006) also demonstrated that “a subtitled video provides a triple connection between image, sound in one language and text ... this type of connection generally encourages strong associations for retention and language ... their combination here is necessarily very powerful”.

With emergence of captioned videos in 1990, teachers as well as researchers (Lambert, Holobow, & Sayegh, 1984) observed that captioned videos enhance ESL learners’ capability to comprehend the text in “ visual and printed form”. Moreover, it was also promoted that captioned videos develop different language skills: listening (Markham & Peter, 2003), comprehension of content (Lambert et al., 1984), reading comprehension (Hwang & Huang, 2011) and vocabulary knowledge (Huffman, 1986).

Captioned videos help the ESL learners to acquire more vocabulary and comprehension of language. This was quite evident in the study of Winke et al. (2010). He evaluated the efficacy of captioned videos for 150 Chinese, Spanish and Russian EFL students in a U.S. University. English documentary videos of animals, about 3 to 5 minutes, were watched by the students. The videos were shown with captions and without captions turn by turn. After this, the students were examined for their understanding of content and vocabulary. The findings emphasized that captions put a significant impact on vocabulary knowledge and

comprehension of content as compared to non captioned videos.

Videos can also contribute as an andragogical tools in process of teaching vocabulary to adult ESL learners. Regarding the teaching of vocabulary acquisition, two studies were managed by Neuman, Wong, Flynn, and Kaefer (2019) to examine the effect of online streamed videos on vocabulary acquisition. First study was about the content analysis of 100 educational media language programs. That study explored that “ostensive” and “attention directing” cues were employed in videos. While the second study involved “eye-tracking” technology to spot prediction ability of learners to identify content centered vocabulary. “Attention directing” signals contributed more effectively in the process of student’s vocabulary acquisition. The conclusion of these research studies demonstrated the importance of being salient in videos for boosting the chances of vocabulary acquisition. Moreover, research work of Montero Pérez, Peters, and Desmet (2018) also contributed that full captions worked wonders to achieve high vocabulary among learners as compared to keyword captions and salient keywords.

A review of related literature brings forth some considerable issues related to impact of captioned videos on vocabulary knowledge. Firstly, results of previous studies are not consistent. Secondly, fully captioned videos do not generate progressive output in all cases (Montero Pérez et al., 2018). Thirdly, other factors of inference generation are not adopted to evaluate the impact of captioned video on them. So, there is found no evidence regarding the implementation of captioned videos on inference generation and its integral components. To fill this research gap, this study attempts to expand the body of literature by examining the perceptions of ESL learners about aids and barriers of captioned videos on inference generation and its contributing factors i.e. memory, vocabulary knowledge and background knowledge.

### 3 Research Methodology

This research study aimed to interrogate female ESL learners about the pros and cons of captioned videos on inference generation and its contributing factors i.e. vocabulary knowledge, background knowledge and memory with quantitative research design.

#### 3.1 Research tool

Five point Likert scale questionnaire was manipulated to record the responses of undergraduate female respondents of all public colleges for girls at District level. This questionnaire was designed by the researcher. At the first step, the questionnaire was designed. Thirty two statements about the impact of captioned videos on inference generation and its three attributes (i.e. background knowledge, vocabulary knowledge and memory) constituted the questionnaire. Each factor of inference generation and inference generation itself had eight statements. The next step was the approval of syntactical structure, content appropriation and objective projection of questionnaire by the experts of questionnaire developers in faculty of Humanities and Arts.

##### 3.1.1 Reliability of research tool

After getting the approval of experts, reliability of the test was evaluated by conducting a pilot study of this questionnaire. This pilot study involved 12 female undergraduates of Associate Degree Program enrolled in session 2021-2023 at Govt. Associate College (W), Liaquat Pur. These responses were entered in SPSS-20 (Statistical Package of Social Sciences) to calculate reliability of this questionnaire.

Reliability deals with same results in varied situations. It determines the internal consistency of the scale (Brown, 2003). The questionnaire would be reliable if Alpha ( $\alpha$ ) value is greater than .70 (Hair, Ringle, & Sarstedt, 2013). Reliability of the questionnaire

was evaluated by using Reliability scale. The result showed that the questionnaire with 24 items was found reliable with Cronbach Alpha Coefficient ( $\alpha$ ) = 0.77 as this value was greater than 0.70.

After attaining reliability of the questionnaire, a Google form was generated to collect the data from the undergraduates of Associate Degree Program enrolled in 2021-2023 at all public colleges for girls at district Rahim Yar Khan.

### 3.2 Population of the Study

All the female undergraduates enrolled in 2021-2023 at public colleges for girls of district Rahim yar Khan were the population of this research study.

### 3.3 Sampling of the study

Cluster random sampling was used to select the sample of 200 female undergraduates from all public Associate Colleges for women at district Rahim yar Khan. At the first stage, the population of District Rahim Yar Khan was subdivided into four tehsil clusters. Random selection of the clusters was the second stage of cluster sampling. Among these clusters, three Tehsils named as Liaquat Pur, Khan Pur and Sadiqabad were chosen randomly as clusters from District Rahim Yar Khan. The detail of Associate colleges for women in selected tehsil clusters with the strength of students was described in the following table:

**Table 1 Cluster table**

| Sr.No | Name of Tehsil cluster | Name of colleges within cluster                                     | No. of students |
|-------|------------------------|---|-----------------|
| 1     | Liaquat Pur            | Govt.Associate College(W),Taranda Muhammd Panah, tehsil Liaquat Pur | 33              |
|       |                        | Govt.Associate College(W), Khanbela, Tehsil Liaquat Pur             | 35              |
|       |                        | Govt. Associate College(W), Liaquat Pur                             | 72              |
| 2     | Khan Pur               | Govt. Fatima Jinnah Associate College(w), 103 1L Khanpur            | 27              |
| 3     | Sadiqabad              | Govt.Associate College(W),Manthar Bungla, tehsil Sadiqabad          | 33              |
| Total |                        |   | 200             |

For the sample of this research study, all the students of above mentioned colleges were taken except those of Govt.Associate College(W), Liaquat Pur. From this college,

only 72 students were chosen randomly to obtain the required size of sample.

### 3.4 Data Collection

To collect the data of 200 female students from above mentioned clusters, respective ESL teachers were approached and requested to create whatsapp group of these students. The researcher was also added in that whatsapp group. The link of Google form developed by the researcher was shared in the group of the students. The students were guided to fill that form via voice note forwarded in the whatsapp group by the researcher. At first, only a few students filled that form. Later on all the students filled the form with consistent follow ups by the researcher. At the end, the spreadsheet of the data obtained through

Google form was generated and downloaded. All the obtained data was entered into SPSS-20(Statistical Package of Social Sciences) to analyze the Descriptive Statistics.

### 3.5 Data Analysis and Results

To examine the impact of captioned videos on inference generation of female ESL learners specifically, Descriptive Statistics (frequency) of inference generation and its factors i.e. background knowledge, vocabulary knowledge and memory were calculated and interpreted.

**Table 2 Frequency Table for impact of captioned videos on background knowledge of ESL learners**

| Sr.No | Test Items  | Item Statistics | SD   | D    | N    | A    | SA   |
|-------|---|-----------------|------|------|------|------|------|
| 1     | Captioned videos assist ESL learner to access the relevant background knowledge quickly.                          | Frequency       | 4    | 5    | 6    | 95   | 90   |
|       |   | Percentage      | 2.0  | 2.5  | 3.0  | 47.5 | 45.0 |
| 2     | Captioned videos hurdle the ESL learner to access the relevant background knowledge quickly.                      | Frequency       | 33   | 96   | 26   | 32   | 13   |
|       |   | Percentage      | 16.5 | 48.0 | 13.0 | 16.0 | 6.5  |
| 3     | Captioned videos facilitate the ESL learners to draw inference by activating relevant background knowledge.       | Frequency       | 7    | 9    | 21   | 86   | 77   |
|       |   | Percentage      | 3.5  | 4.5  | 10.5 | 43.0 | 38.5 |
| 4     | Captioned videos hinder the ESL learners to draw inference by activating relevant background knowledge.           | Frequency       | 71   | 59   | 27   | 25   | 18   |
|       |   | Percentage      | 35.5 | 29.5 | 13.5 | 12.5 | 9.0  |
| 5     | Captioned videos enable ESL students to choose appropriate meanings of words from their background knowledge.     | Frequency       | 8    | 8    | 19   | 88   | 77   |
|       |   | Percentage      | 4.0  | 4.0  | 9.5  | 44.0 | 38.5 |
| 6     | Captioned videos confuse the ESL readers to choose appropriate meanings of words from their background knowledge. | Frequency       | 52   | 73   | 25   | 30   | 20   |
|       |   | Percentage      | 26.0 | 36.5 | 12.5 | 15.0 | 10.0 |

\*Note: Only high frequency values were interpreted.

According to Table 2, 47.5% ESL learners agreed that captioned videos helped ESL learner to access the relevant background

knowledge quickly. 48% students disagreed that captioned videos obstructed the ESL learner to access the relevant background knowledge



quickly. 43% students accepted the contribution of captioned videos for developing inference with activation of relevant background knowledge. 35.5% students rejected the hindrance of captioned videos for inference generation through the activation of relevant background knowledge. 44% ESL learners

strongly agreed that captioned videos enabled ESL students to choose appropriate meanings of words from their background knowledge. 36.5% learners disagreed with the role of Captioned videos as a confusing tool for selecting the appropriate meanings of words from their background knowledge.

**Table 3 Frequency Table regarding the impact of vocabulary Knowledge of ESL learner**

| Sr.No | Test Items  | Item Statistics | SD  | D    | N    | A    | SA   |
|-------|---|-----------------|-----|------|------|------|------|
| 1     | Captioned videos equip the ESL students with new words.                             | Frequency       | 16  | 10   | 13   | 53   | 108  |
|       |   | Percentage      | 8.0 | 5.0  | 6.5  | 26.5 | 54.0 |
| 2     | Captioned videos mess up new words in the memory of ESL students.                   | Frequency       | 17  | 32   | 42   | 72   | 37   |
|       |   | Percentage      | 8.5 | 16.0 | 21.0 | 36.0 | 18.5 |
| 3     | Captioned videos polish pronunciation of the ESL learners.                          | Frequency       | 13  | 10   | 25   | 96   | 56   |
|       |   | Percentage      | 6.5 | 5.0  | 12.5 | 48.0 | 28.0 |
| 4     | Captioned videos confuse the ESL learners about British and American pronunciation. | Frequency       | 11  | 21   | 36   | 90   | 42   |
|       |   | Percentage      | 5.5 | 10.5 | 18.0 | 45.0 | 21.0 |
| 5     | Captioned videos improve spelling skills of the ESL students.                       | Frequency       | 3   | 5    | 10   | 57   | 125  |
|       |   | Percentage      | 1.5 | 2.5  | 5.0  | 28.5 | 62.5 |
| 6     | Captioned videos puzzle the ESL learners about British and American spellings.      | Frequency       | 11  | 23   | 38   | 90   | 38   |
|       |   | Percentage      | 5.5 | 11.5 | 19.0 | 45.0 | 19.0 |

\*Note: Interpretation of only high frequency values was given.

According to above given frequency tabulation, showed that 54% ESL learners strongly agreed that captioned videos enhanced their vocabulary. While 36% of students agreed that captioned videos were enough to heap up new vocabulary in their memory. 48% of students agreed that captioned videos flourish their pronunciation. However, 45% agreed that

captioned videos confused the ESL learners about British and American pronunciation. 62.5% ESL learners strongly agreed that captioned videos improve spelling skills of the ESL students. On the other hand, 45% ESL students agreed that captioned videos puzzled the ESL learners about British and American spellings.

**Table 4** Frequency Table for the impact of captioned videos on memory

| Sr.No | Test Items   | Item Statistics | SD   | D    | N    | A    | SA   |
|-------|--|-----------------|------|------|------|------|------|
| 1     | Captioned video helps ESL learners to store words and information in long term memory.     | Frequency       | 6    | 10   | 21   | 73   | 90   |
|       |  | Percentage      | 3.0  | 5.0  | 10.5 | 36.5 | 45.0 |
| 2     | Captioned video boosts up working memory of ESL student.                                   | Frequency       | 8    | 13   | 25   | 74   | 80   |
|       |  | Percentage      | 4.0  | 6.5  | 12.5 | 37.0 | 40.0 |
| 3     | Captioned video weaken working memory of ESL learner.                                      | Frequency       | 44   | 69   | 33   | 29   | 25   |
|       |  | Percentage      | 22.0 | 34.5 | 16.5 | 14.5 | 12.5 |
| 4     | Videos with captions strengthen memory of ESL learner by linking visuals, vocals and text. | Frequency       | 10   | 13   | 24   | 70   | 83   |
|       |  | Percentage      | 5.0  | 6.5  | 12.0 | 35.0 | 41.5 |
| 5     | Captioned video hinders ESL learner to store words and information in long term memory.    | Frequency       | 33   | 61   | 19   | 57   | 30   |
|       |  | Percentage      | 16.5 | 30.5 | 9.5  | 28.5 | 15.0 |
| 6     | Videos with captions relax the memory of ESL learner by linking visuals, vocals and text.  | Frequency       | 14   | 26   | 37   | 73   | 50   |
|       |  | Percentage      | 7.0  | 13.0 | 18.5 | 36.5 | 25.0 |

\*Note: Interpretation of only high frequency values was given.

In accordance with Table 4, 45% ESL learners strongly agreed with assistance of captioned video for storing words and information in long term memory. 40% students strongly agreed that captioned video boosts up their working memory. While 34.5% students disagreed that captioned video weakened their working memory. 41.5% ESL learners strongly agreed

that videos with captions strengthened their memory by linking visuals, vocals and text. 30.5% ESL learners disagreed that captioned video hindered them to store words and information in long term memory. 36.5% students agreed that captioned video relax the memory of ESL learner by linking visuals, vocals and text.

**Table 5** Frequency Table related to the impact of captioned videos on Inference generation

| Sr.No | Test Items   | Item Statistics | SD   | D    | N    | A    | SA   |
|-------|--|-----------------|------|------|------|------|------|
| 1     | Video with caption facilitates ESL learner to generate inference.                                | Frequency       | 4    | 26   | 16   | 100  | 54   |
|       |  | Percentage      | 2.0  | 13.0 | 8.0  | 50.0 | 27.0 |
| 2     | Video with caption bars ESL learner to generate inference.                                       | Frequency       | 42   | 73   | 32   | 34   | 19   |
|       |  | Percentage      | 21.0 | 36.5 | 16.0 | 17.0 | 9.5  |
| 3     | Video with caption supports ESL student for going beyond explicit text for generating inference. | Frequency       | 10   | 20   | 43   | 76   | 51   |
|       |  | Percentage      | 5.0  | 10.0 | 21.5 | 38.0 | 25.5 |
| 4     | Video with caption trigger the linking process of background knowledge and present knowledge.    | Frequency       | 12   | 11   | 29   | 74   | 74   |
|       |  | Percentage      | 6.0  | 5.5  | 14.5 | 37.0 | 37.0 |
| 5     | Video with caption weaken the linking process of background knowledge and present knowledge.     | Frequency       | 48   | 68   | 34   | 32   | 18   |
|       |  | Percentage      | 24.0 | 34.0 | 17.0 | 16.0 | 9.0  |
| 6     | Video with caption impedes ESL learner to go beyond explicit text to generate inference.         | Frequency       | 14   | 49   | 30   | 60   | 47   |
|       |  | Percentage      | 7.0  | 24.5 | 15.0 | 30.0 | 23.5 |

\*Note: Only high frequency values were interpreted.

Table 5 elaborated that 50% students showed their agreement for facilitating ESL learners to generate inference. Nonetheless, 36.5% recorded their disagreement that video with caption restricted them to generate inference. 38% students agreed that video with caption supported ESL student to go beyond explicit text for generating inference. 37% ESL learners strongly agreed that video with caption triggered their linking process of background knowledge with present knowledge. 34% students disagreed that video with caption weakened the linking process of background knowledge and present knowledge. While

24.5% disagreed that video with caption impedes ESL learner to go beyond explicit text to generate inference.

#### 4 Discussion

The projection of this study was to examine the impact of captioned videos on inference generation and its vital factors. The vital factors of inference generation were background knowledge, vocabulary knowledge and memory. These factors were focused in research questions. The minuses and pluses of captioned videos on inference generation and its factors were decoded by the researcher in the

form of questionnaire. Descriptive statistics was analyzed for the responses collected through questionnaire. The first research question dealt with how captioned videos affect inference generation of ESL learners. Frequency table 5 elaborated the answer of first research question very aptly. This tabulation explained that captioned videos positively affected inference generation of the students by:

- Facilitating inference generation (50% students agreed),
- Supporting to go beyond explicit text for inference generation (38% students agreed),
- Boosting their linking process of background knowledge with present knowledge (37% students strongly agreed).

Moreover, minuses of captioned videos on inference generation were rejected by ESL learners. 36.5% students negated that captioned videos built a hurdle for inference generation. 34% students showed their disagreement for weakening the linking process of background knowledge with present knowledge via captioned videos. Additionally, 24.5% ESL learners disagreed that video with caption obstructed ESL learner to go beyond explicit text for inference generation.

The second research question was how captioned videos work on background knowledge of ESL students. Frequency statistics regarding the impact of captioned videos on background knowledge tabulated in Table 2 delineated the explanation of earlier mentioned question in a precise way. According to interpretation of this table, captioned videos definitely prompted background knowledge by:

- Assisting ESL learners to activate background knowledge quickly (47.5% students agreed),
- Enhancing inference by means of stirring relevant background knowledge (43% students agreed),

- Selecting suitable meanings of words from background knowledge (44% ESL learners strongly agreed).

Regarding disadvantages of captioned video for background knowledge, Students have nullified that captioned videos:

- Impeded the access of the relevant background knowledge quickly (48% students disagreed),
- Hindered for inference generation with activation of background knowledge (35.5 % students disagreed),
- Worked as a confusing tool for selecting the appropriate meanings of words from their background knowledge (36.5% learners disagreed).

Third research question (How do captioned videos influence vocabulary knowledge of ESL learners?) could be evaluated with the interpretation of Table 3. This table discussed that captioned videos cast a constructive effect on vocabulary knowledge by

- Boosting the vocabulary (54% students strongly agreed),
- Refining the pronunciation (48% learners agreed),
- Improving the spelling skills (62.5% students agreed).

On the other hand, there were also some drawbacks of captioned videos for vocabulary knowledge. Captioned videos

- Mess up new vocabulary in the memory of ESL learners (36% students agreed),
- Confused the ESL learners about British and American pronunciation (45% students agreed),
- Puzzled the ESL learners about British and American spellings (45% ESL students agreed).

Table 4 explained the fourth research question i.e. how do captioned videos affect memory of ESL students? Frequency

statistics discussed that captioned video boosted the memory of ESL learner by

- Helping to store words and information in long term memory (45% students agreed).
- Boosting up working memory (40% students agreed),
- Strengthening the memory by linking visuals, vocals and text (41.5% students agreed).

As far as adverse impact of captioned videos were concerned, 34.5 % ESL learners disagreed that captioned video destabilized their working memory and restricted them to store words and information in their long term memory (30.5% students disagreed). But 36.5% students agreed that captioned video relaxed their memory by linking visuals, vocals and text.

## 5 Conclusion

To recap, the objective of this quantitative research was to evaluate the impact of captioned videos on inference generation of ESL learners. This research was conducted at district level involving the female undergraduates of Associate Degree Program enrolled in 2021-2023. Cluster random sampling was employed to develop a sample of 200 students. A questionnaire developed by the researcher was used as a research tool. The data collected through questionnaire was analyzed through Descriptive statistics. The findings of the research questions concluded this study very comprehensively. Research question wise detail of findings was given ahead.

“How do captioned videos affect inference generation of ESL learners?” was the first research question. Descriptive Statistics (in Table 5) elaborated that captioned video had a profound effect to speed up inference generation of ESL learners. As it had contributed a lot for

- boosting up inference generation of ESL learners,
- going beyond explicit text for inference generation,
- speeding up the linking process of background knowledge with present knowledge.

In simple words, Caption video had an encouraging and profound effect for inference generation of ESL learners without any hindrance.

The second research question was “How do captioned videos work on background knowledge of ESL students?” The findings (in table 2) concluded that captioned video work on background knowledge of ESL learner through rapid triggering of relevant background knowledge and appropriate selection of word meanings according to the context. Moreover, no discouraging effects of caption video were evaluated on background knowledge.

“How does captioned video influence vocabulary knowledge of ESL learners?” related the third research question. The results (in Table 3) highlighted that captioned video influenced vocabulary knowledge of ESL learners positively as well as negatively also. On one hand, caption video helped the students to flourish their vocabulary, improve their pronunciation and spelling skill. On the other hand, it had also confused the students with massive input of new words, British and American pronunciations and spellings.

Last but not the least question was “How do captioned videos affect memory of ESL students?” Findings (in Table 4) made a conclusion that caption video also had a deep effect on memory of ESL learners. It helped the students to store words and information in their long term memory, to develop a retentive working memory by linking visuals, vocals and text without leaving a negative effect. In a nutshell, perceptions of ESL learners concluded that captioned videos had a more constructive

effect on inference generation and its contributing factors. It would be a productive tool in the process of teaching and learning. But its manipulation would demand more care strategically so that the negative effects on vocabulary might be minimized.

## References

1. Baltova, I. (1994). The impact of video on the comprehension skills of core French students. *Canadian modern language Review*, 50(3), 507-531.
2. Best, R. M., Rowe, M., Ozuru, Y., & McNamara, D. S. (2005). Deep-level comprehension of science texts: The role of the reader and the text. *Topics in Language Disorders*, 25(1), 65-83.
3. 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.
4. Borrás, I., & Lafayette, R. C. (1994). Effects of multimedia courseware subtitling on the speaking performance of college students of French. *The Modern Language Journal*, 78(1), 61-75.
5. Brown, H. D. (2003). *Language assessment: Principles and classroom practices*: Pearson Education.
6. Cain, K., Oakhill, J., & Bryant, P. (2004). Children's reading comprehension ability: Concurrent prediction by working memory, verbal ability, and component skills. *Journal of Educational Psychology*, 96(1), 31.
7. Cain, K., & Oakhill, J. V. (1999). Inference making ability and its relation to comprehension failure in young children. *Reading and writing*, 11(5), 489-503.
8. Canning-Wilson, C., & Wallace, J. (2000). Practical aspects of using video in the foreign language classroom. *The Internet TESL Journal*, 6(11), 36-31.
9. Clark, J. M., & Paivio, A. (1987). A dual coding perspective on encoding processes Imagery and related mnemonic processes (pp. 5-33): Springer.
10. Cross, J. (2011). Comprehending news videotexts: The influence of the visual content. *Language Learning & Technology*, 15(2), 44-68.
11. Cunningham, A. E. (2005). Vocabulary growth through independent reading and reading aloud to children. *Teaching and learning vocabulary: Bringing research to practice*, 45-68.
12. Danan, M. (2004). Captioning and subtitling: Undervalued language learning strategies. *Meta: Journal des traducteurs/Meta: Translators' Journal*, 49(1), 67-77.
13. Doughty, C. (2004). Effects of instruction on learning a second language: A critique of instructed SLA research. *Form-meaning connections in second language acquisition*, 181-202.
14. Freed, J., & Cain, K. (2017). Assessing school-aged children's inference-making: the effect of story test format in listening comprehension. *International journal of language & communication disorders*, 52(1), 95-105.
15. Freed, J., & Cain, K. (2021). Assessment of inference-making in children using comprehension questions and story retelling: Effect of text modality and a story presentation format. *International Journal of Language & Communication Disorders*, 56(3), 637-652.
16. Garza, T. J. (1991). Evaluating the use of captioned video materials in advanced foreign language learning. *Foreign Language Annals*, 24(3), 239-258.
17. Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous

- applications, better results and higher acceptance. Long range planning, 46(1-2), 1-12.
18. Hinkin, M. (2009). Comprehension of multiple channel messages: Are subtitles more beneficial than soundtracks?, Kansas State University.
  19. Hsia, H. J. (1971). The information processing capacity of modality and channel performance. *AV Communication Review*, 19(1), 51-75.
  20. Huffman, D. T. (1986). Soap Operas and Captioning in the EFL Class.
  21. Hwang, Y., & Huang, P. (2011). Using subtitles to enliven reading. *English Language and literature studies*, 1(1), 2.
  22. Kopitski, M. (2007). Exploring the teaching of inference skills.
  23. Koskinen, P. S. (1993). Captioned Video & Vocabulary Learning: An Innovative Practice in Literacy Instruction: National Reading Research Center.
  24. Lambert, W., Holobow, N., & Sayegh, L. (1984). Pairing Script and Dialogue: Combinations that Show Promise for Second or Foreign Language Learning. *Language Learning*, 34, 59-74.
  25. Lepola, J., Lynch, J., Laakkonen, E., Silvén, M., & Niemi, P. (2012). The role of inference making and other language skills in the development of narrative listening comprehension in 4–6-year-old children. *Reading Research Quarterly*, 47(3), 259-282.
  26. Markham, P., & Peter, L. (2003). The influence of English language and Spanish language captions on foreign language listening/reading comprehension. *Journal of Educational Technology Systems*, 31(3), 331-341.
  27. Mayer, R., & Mayer, R. E. (2005). *The Cambridge handbook of multimedia learning*: Cambridge university press.
  28. Montero Pérez, M., Peters, E., & Desmet, P. (2018). Vocabulary learning through viewing video: The effect of two enhancement techniques. *Computer assisted language learning*, 31(1-2), 1-26.
  29. Neuman, S. B., Wong, K. M., Flynn, R., & Kaefer, T. (2019). Learning vocabulary from educational media: The role of pedagogical supports for low-income preschoolers. *Journal of Educational Psychology*, 111(1), 32.
  30. Oakhill, J., Cain, K., & Elbro, C. (2014). *Understanding and teaching reading comprehension: A handbook*: Routledge.
  31. Pavot, W., Diener, E., Colvin, C. R., & Sandvik, E. (1991). Further validation of the Satisfaction with Life Scale: Evidence for the cross-method convergence of well-being measures. *Journal of personality assessment*, 57(1), 149-161.
  32. Plass, J. L., & Jones, L. C. (2005). Multimedia learning in second language acquisition.
  33. Rapp, D. N., Broek, P. v. d., McMaster, K. L., Kendeou, P., & Espin, C. A. (2007). Higher-order comprehension processes in struggling readers: A perspective for research and intervention. *Scientific studies of reading*, 11(4), 289-312.
  34. Rosenberger, A. (2011). Reciprocal teaching and its effect on inference skills to enhance reading comprehension.
  35. Silagi, M., Romero, V., de Oliveira, M., Trés, E., Brucki, S., Radanovic, M., & Mansur, L. (2020). Inference comprehension from reading in individuals with mild cognitive impairment. *Acta Neurologica Belgica*.
  36. Taboada, A., & Guthrie, J. T. (2006). Contributions of student questioning and prior knowledge to construction of knowledge from reading information text. *Journal of literacy research*, 38(1), 1-35.
  37. Tarchi, C. (2015). Fostering reading comprehension of expository texts

- through the activation of readers' prior knowledge and inference-making skills. *International Journal of Educational Research*, 72, 80-88.
38. Taylor, G. (2005). Perceived processing strategies of students watching captioned video. *Foreign Language Annals*, 38(3), 422-427.
39. Taylor, G. (2005). Perceived strategies of students watching captioned video processing. *Foreign Language Annals*, 38(3), 422-427.
40. Van den Broek, P., Lorch, R. F., Linderholm, T., & Gustafson, M. (2001). The effects of readers' goals on inference generation and memory for texts. *Memory & Cognition*, 29(8), 1081-1087.
41. Weekes, B. S., Hamilton, S., Oakhill, J. V., & Holliday, R. E. (2008). False recollection in children with reading comprehension difficulties. *Cognition*, 106(1), 222-233.
42. Winke, P., Gass, S., & Sydorenko, T. (2010). The effects of captioning videos used for foreign language listening activities. *Language Learning & Technology*, 14(1), 65-86.
43. Zanón, N. T. (2006). Using subtitles to enhance foreign language learning. *Porta Linguarum: revista internacional de didáctica de las lenguas extranjeras*(6), 4.