

THE EFFECTS OF USING CAPTIONS IN SIGN LANGUAGE INTERPRETER VIDEOS

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ABSTRACT

Deaf and hard of hearing sign language users are increasingly using sign language interpreter videos when obtaining information from television programs, films and web sites. These videos serve as a tool for interpreting spoken and/or written words. While previous studies have mainly emphasized the benefits of using captions in videos with non-signing content, our study focuses on the use of captions in the signing content itself.

Our aim is to identify whether the implementation of captions in single sign language interpreter videos can positively affect viewers' comprehension when compared with sign language interpreter videos without captions.

An experiment was performed using four sign language interpreter videos with information about everyday events: hiking, shopping, culture and sports. Fifty-one deaf and hard of hearing Slovenian sign language users watched the videos alternately with and without captions. Afterwards, they answered ten questions.

The results showed that the presence of captions positively affected their comprehension, which increased by 24% among deaf viewers, and 42% among hard of hearing viewers. Significant differences in comprehension between videos with and without captions were only found in the subjects of hiking and culture, where comprehension was higher when captions were used.

The findings revealed that the inclusion of captions in sign language interpreter videos can improve deaf and hard of hearing viewers' comprehension. It concludes with a call for the consistent use of captions in sign language interpreter videos across various media.

INTRODUCTION

In recent years, deaf and hard of hearing sign language users have increasingly been using sign language interpreter videos when obtaining information from television programs, films and websites. This is a widespread practice especially among those who consider sign language their primary language, as these persons often consider written or spoken language as a second language.

Their exposure to complex written texts may cause difficulties in comprehension of the content. When these texts are interpreted in sign language, a lack of appropriate sign language vocabulary may be a barrier in the comprehension process. For this reason, the use of captions in sign language interpreter videos could be beneficial.

Many researchers have focused on investigating the benefits of captioning for deaf and hard of hearing sign language users. On the one hand, a wide range of studies focus on examining the effects of including captions in non-signing content for the deaf and hard of hearing (Gulliver & Ghinea, 2003a; Gulliver & Ghinea, 2003b; Jelinek Lewis & Jackson, 2001; Cambra, Leal, & Silvestre, 2010; Strassman & O'Dell, 2012; Kirkland, Byrom, MacDougall, & Corcoran, 1995). These studies mainly examine different styles of captions, their speed, etc.

On the other hand, only few studies have examined the benefits of using captions in signing content (Yoon & Kim, 2011; Kim & Yeong, 2006). Where the focus has been primarily on deaf learners' content comprehension, cognitive load, and motivation in online learning, positive effects have been found.

While previous studies have advantageously substantiated the usefulness of captions for deaf and hard of hearing sign language users, there is a dearth of research on how effective the use of captions in sign language interpreter videos is. It could be intriguing, especially considering the influence of captions on the content comprehension of deaf and hard of hearing persons.

The aim of the present study is thus to examine sign language users' comprehension of the sign language interpreter video when captions are included, as compared to when they are not (Figure 1). In addition, our aim has been to find out whether there are differences in comprehension between hard of hearing and deaf users, as well as whether the topic of the video affects the level of comprehension.

The paper is organized as follows: First, we describe the participants who took part in the experiment conducted in our study. Second, we outline the instruments and procedure used. An explanation of the results follows, and the paper ends with a discussion of the importance of the findings.



Figure 1. Sign language interpreter video with and without captions.

METHOD

Participants

We recruited our sample from the Slovene D/HH population, where 51 Slovenian sign language users were included in the experiment. All had knowledge of written language. The majority were deaf, and 58.8% were male. On average, they were 30 years old ($SD = 17.85$).

Instruments and procedure

The experiment was conducted at Slovenian deaf associations over four sessions: an introductory session, a training session, the experiment itself, and a post-experiment evaluation (Debevč, Milošević, & Kožuh, 2015).

The introduction to the test was held before the training session started. Participants were given instructions on how to participate in the experiment and were asked to sign a written consent form. In addition, they were asked to fill out a demographic questionnaire.

In the training session, two video sequences (sign language interpreter videos) were used. The first video contained only one statement, and participants were asked to answer three questions related to the video after viewing. The second video was similar to the video sequences used in the experimental session, where a sign language interpreter presented some content in sign language. The video contained 10 chunks of inter-independent information within 3–7 sentences and 40–58 words. After watching the video, participants were asked to answer 10 questions.

In the experimental session, each participant was asked to watch four video sequences with four different topics: hiking, culture, shopping, and sports. Two video sequences contained captions, while two did not. The participants were divided into two groups and each group watched the videos in sequence, alternately with and without captions. The order of video

sequences remained the same. After watching each video, participants were asked to fill out a questionnaire with 10 questions.

In the evaluation session, participants were asked to assess how difficult it was to gain information from the interpreter video sequences used in the experimental session. We used a 10-point scale with response categories ranging from 1 (very easy) to 10 (very difficult).

RESULTS

First, we conducted a two-way mixed-design between-within subjects analysis of variance (ANOVA) to assess the effects of using captions on the participants' level of comprehension across groups with different types of hearing loss. The results revealed an increase in the level of comprehension when captions were included in the sign language interpreter video. When captions were present, comprehension scores in both deaf and hard of hearing people increased. What is more, results revealed higher comprehension scores among hard of hearing participants as compared to the deaf.

Further, those who watched the videos with captions showed higher levels of comprehension as compared to those who watched them without captions. In addition, when comparing deaf and hard of hearing people, the increase in comprehension was higher among hard of hearing people. Specifically, comprehension increased by 24% among the deaf when captions were used. In hard of hearing people, the increase was even higher – 42% (Debevc, Milošević, & Kožuh, 2015).

Second, in order to analyze whether the content/topic of sign language interpreter videos had some effect on participants' comprehension, we used a t-test. As previously mentioned, our sign language interpreter videos covered four topics: hiking, culture, shopping, and sports. Two participant groups were formed, and each group watched the same video – group 1 with captions and group 2 without. The results revealed significant differences for the topics of hiking and culture, while differences were not significant for shopping and sports (Figure 2). For the topics of hiking and culture, comprehension was significantly higher when captions were included (Debevc, Milošević, & Kožuh, 2015).

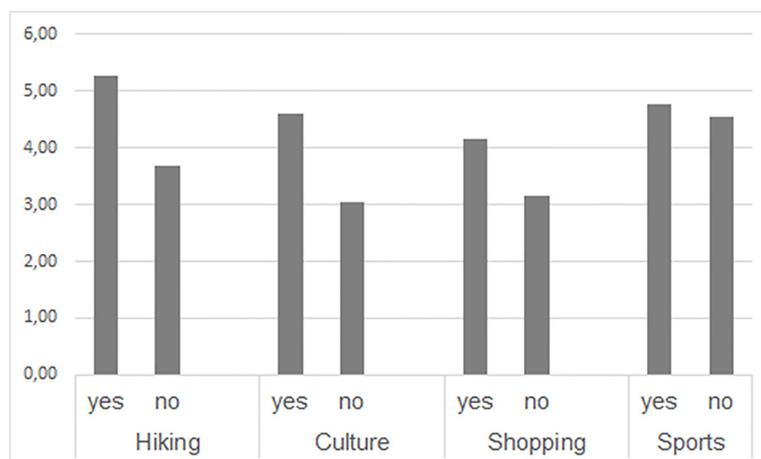


Figure 2. Mean values for comprehension of sign language interpreter videos according to the topics.

DISCUSSION AND CONCLUSION

The aim of the present study is to examine whether the use of captions in sign language interpreter videos affects viewers' comprehension of these videos. Our findings reveal that comprehension increases in both deaf and hard of hearing viewers when captions are included. Among the deaf, comprehension increases by 42%, while among hard of hearing people it increases by 24%.

Our findings complement the results of previous studies which have substantiated the benefits of using captions in signing content intended for educational purposes (Yoon & Kim, 2011; Kim & Yeong, 2006). In line with our own findings, their studies show that deaf students experience a significant increase in comprehension when sign language video and captions are used simultaneously. What is more, our findings are in alignment with recent requirements of the Federal Communications Commission (FCC) which has worked successfully with the National Association for the Deaf. FCC requires all televised video clips from 2016 on to contain captions (Deaf News Network, 2014).

The current study is limited by low sample size. One of the reasons is the relatively low number of deaf people available in Slovenia (Kožuh et al., 2014). The results of the study might have been more persuasive had a larger sample been used.

ACKNOWLEDGEMENTS

We would like to thank all the D/HH participants who took part in the study, as well as the representatives of deaf clubs across Slovenia, who allowed the experiment to be performed on their premises.

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