Project Proposal: Smart Subtitles for English Learning via Movie Watching

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INTRODUCTION

Watching English-spoken movies with subtitles is becoming increasingly popular throughout the world. One reason for this trend is the assumption that perceptual learning of the sounds of a foreign language namely English, will improve perception skills in non-English speakers. However, the traditional way of movie display cannot satisfy the learner's requests anymore. This paper presents smart subtitles, which are interactive subtitles tailored towards vocabulary learning. This study provides English learners with a convenient video player in which upper-intermediate English words are highlighted in the shown subtitle along with their relevant Persian (Farsi) definitions at user's request. Moreover, users can ask for the full translation of a dialog and also have access to the collection of the highlighted vocabularies in the end of a video. We analyze the challenges and feasibility of this approach and describe the outcomes of the user study we pilot with Persian native speakers who are English intermediate learners.

RELATED WORK

It is often claimed that watching subtitled films and series implicitly helps to learn a second language. English is the world's most widely learned foreign language (Birulés-Muntané, 2016). Several previous studies have argued that subtitles in audiovisuals can facilitate other aspects of second language learning such as vocabulary acquisition, or overall plot comprehension. Even in these studies, there is controversy regarding the consequences of the different subtitling conditions and the relation to the listener's proficiency. For instance, Vulchanova et al (2015) claim that both intra and inter-lingual subtitles (in the language of the soundtrack, or the listener's native language, respectively) result in improved plot comprehension and vocabulary learning (Vulchanova, 2015). The effects of subtitles on overall plot comprehension are not trivial. From the attention literature regarding the dual task, one would expect attention competition between reading the subtitles and following the film's action to be costly in any subtitling condition (Alsius, 2005). Focusing attention on quickly presented written text whilst processing the audio and visual content of the scene could compete with the integration of meaning and hence interfere with the overall comprehension of the plot (Brunken, 2004). However, since traditional subtitles cannot satisfy language learners' request anymore, smart or interactive subtitles that

provide various features to meet the learner's requirements have been introduced. For instance, (Kovacs, 2014) presents Smart Subtitle which is an interactive, web-based foreign language video viewing tool that aims to maximize vocabulary learning while ensuring the learner fully understands the video and enjoys watching it. In a more recent work, the authors introduce ViVo, a novel video-augmented dictionary that provides an inexpensive, convenient, and scalable way to exploit huge online video resources for vocabulary learning. ViVo automatically generates short video clips from existing movies with the target word highlighted in the subtitles (Zhu, 2017). All these studies show a significant improvement in learning new words in a foreign language using the mentioned tools.

In our study, the research question that we aim to answer is how we can improve learning a foreign language, specifically English using multimedia and in a simple and smart way. Thus, we suggest providing native speakers, in particular, university students, who tend to learn English in an upper-intermediate level, with a simple, convenient and user-friendly video player that shows English subtitles in an interactive way. Since the authors are both Persian speakers and also no work has been done regarding this subject in our language, we prefer to choose Persian (Farsi) as the native language.

Our goal introduces major challenges such as to what extent the contexts in existing video resources are rich and helpful to promote vocabulary learning. The other challenge is which definition of polysemous words that have different meanings should be represented in each context. Moreover, it is important to ask how we should model the user interface in order to promote the learning effect.

More details about our approach and the proposed system are explained in the following sections.

APPROACH

In this work, two types of subtitles are examined: transcripts in the original language (here English), and dual subtitles where both transcripts and its translations are shown. We will refer to both as subtitles in the following.

As mentioned earlier, our approach is to provide English learners with a convenient video player in which movies with their existing English subtitles can be shown. The player highlights more difficult vocabs in each dialog or scene along with their relevant definitions in the native language (Persian) when the user clicks on a highlighted word. As for the words of interest, we consider using the TOEFL word list which represents upper-intermediate English language use and can help English learners to understand the lines in the movies.

Furthermore, if learners need the full translation of a dialog, we provide them with a non-literally Persian subtitle or translation on phrase level rather than on individual words, to provide them with a better comprehension of the movie plot. Our plan to overcome this challenge is to use a similar Persian subtitle of a movie and choose the exact time interval of a specific dialog sentence in this subtitle, instead of a word-for-word or literal translation.

Besides the above features, all the highlighted keywords can be collected in a dictionary-form list to facilitate language learning. Learners can access this list at the end of the movie to review the difficult seen words and exam their English knowledge.

We believe that our approach it enables language learners to acquire language knowledge with associated context and makes the learning process easier, faster and more enjoyable.

EVALUATION

We will conduct a user study with at least 5 Persian-native speakers (computer science grad students in University of Pittsburgh) who learned and used English as an intermediate or upper-intermediate learner. The goal of this study is to examine the effectiveness of our application for memorizing new word meanings, compared with a dictionary or a list of new words.

The selected movies will be in different genres and including a range of the difficult words existing in our TOEFL corpus. We will try to use the movies for participants that they have never watched before.

We will conduct a two-step process for the learning task, one using our application and the other one using a list of vocabs with their meanings. We will ask each participant to watch a video including at least 10 unfamiliar English words and then take a test regarding the seen words. In the second session, the participants will be asked to learn other unfamiliar vocabs using a list. The second test will be taken after this session ends. We will measure the results by the number of words correctly defined after learning.

Any answer that is semantically relevant is counted as correct. For polysemous words, participants only have to recall one of the meanings they encountered. We can measure the vocabulary learning using some standard tests and compare the performance of two methods. Moreover, in order to get more accurate outcomes, we tend to apply each test twice, one before watching the movie and the other one after that. In this way, we can evaluate merely the effect of two practices no matter how familiar users are with the vocabs before doing the practice.

CONCLUSION

We present a simple, convenient and user-friendly video player equipped with interactive English subtitles for movies that enables language learners to concentrate on more difficult words and learn them while watching a movie. This player also provides the learner with more features namely dual subtitle and a dictionary-form word list. We will run a two-step process experiment, recruiting a few participants to measure the vocabulary gain and compare our approach with the traditional vocab learning methods.

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