# The effect of Rapid Serial Visual Presentation Technology (RSVP) in the form of subtitles on enhancing EFL learners' online reading speed, motivation, and attitudes 

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The current study aimed at enhancing online reading speed and motivation of EFL learners through subtitled series as RSVP. For this purpose, 90 learners were divided into three groups: two experimental groups and one control group. The study follows a pre-post experimental mixed-method design. The results were statistically analyzed by using the one-way analysis of variance to compare the mean scores of the reading speed post-tests among groups and the $t$-test to compare the mean scores of the pre-post reading speed tests. To test online reading motivation, a 38 -item questionnaire was prepared. Results revealed no significant differences between the two experimental groups on online reading speed tests and online reading motivation. However, there were significant differences between the pre and post online reading speed tests. A qualitative analysis was used to analyze learners' attitudes toward using subtitled movies to enhance their online reading speed and motivation. Results showed that majority of students had positive attitudes toward subtitled movies. Accordingly, discussion and interpretation of these results were provided.

Keywords: rapid serial visual presentation, online reading speed, subtitles, online reading motivation, Attitudes toward using subtitled movies.

Recently, due to the fast progress in technology, people all over the world began to spend more time using their smart devices for reading news, emails, e-books, or any material. When the COVID-19 epidemic occurred, many countries have turned to online learning in order to meet students' studying needs. According to Lan et. al., (2006), students' performance in reading affects their academic achievements because students with higher reading abilities perform better than those whose reading skills are not well developed. Nowadays, online text has replaced paper material in every field, particularly education (Nga, 2021). However, EFL learners read a foreign language online in a slower way than reading their native language. As Karaman (2016) stated, screen reading is slower and tiring than print reading. Therefore, EFL students need to learn some techniques to increase their online reading speed.

The current study attempted to improve EFL learners‘ online reading speed through using subtitles as rapid serial visual presentation technique. The current study also investigated the effect of the same technique on EFL learners‘ online reading motivation. Additionally, it explored the participants' attitudes toward using movie subtitles for developing their online reading and motivation.

The current study seeks to answer the following main questions:

1. Which method is more effective in enhancing screen/online reading speed of EFL learners: intralingual subtitles (English dialogue with English subtitles), interlingual subtitles (non-English dialogue with English subtitles), or reading the paper course book?
2. To what extent is each method effective in enhancing online reading speed of EFL learners?
3. To what extent will each of the three methods enhance EFL learners' online reading motivation?
4. What are the EFL learners' attitudes toward using subtitled movies to improve online reading speed and motivation?

## Literature review

## The technology of Rapid Serial Visual Presentation

In the time of small digital screens, traditional reading is called into question. One of the key alternatives is known as rapid serial visual presentation (RSVP). It means displaying in order one or more words at a time, therefore reducing the number of saccades and eye blinks while reading and maximizing the attention focus (Benedetto, et.al., 2015; Foster, 1970). Although saccades happen fast, reading time is increased because of these jumps since the reader does not land at a certain fixation point.

The RSVP technique is crucial for learners to control their reading speed because it is different from traditional reading since learners can read the end
the text (Reichle, Rayner \& Pollatsek, 2003). Compared to traditional reading, studies on RSVP revealed that both can have the same effect especially when shorter sentences have been displayed (Rayner, 1998; Raymond, Shapiro, \& Arnell, 1992). In this context, Proaps and Bliss (2014) proposed that four words per second (i.e. 250 wpm ) may be the best amount to get close results

The JALT CALL Journal to traditional reading formats. However, with the increase of this rate, reading comprehension and retention are affected negatively (i.e. Chen \& Chien, 2007; Joula, Ward, \& McNamara, 1982). In sum, when sentences get longer, the cognitive load increases and the comprehension decreases because of the eye movement removal (Rayner, 2009). According to Benedetto et. Al., (2015), a lot of RSVP mobile applications have been developed to enhance reading speed (i.e., A Faster Reader; RapidRead; Balto Speed Reading; Speed Reader Spritzer) Armstrong and Shotton (2015) used subtitles as an RSVP technique to develop speed reading. Similarly, in the current study, researchers experimented with movie subtitles as RSVP to enhance reading speed.

## Subtitled movies or series

Videos in general have been recognized to be a great medium to help students learn English skills such as listening and speaking. However, using videos to learn reading skills is another issue because the input source of reading is the words on screen not the sounds or the pictures. Reading is defined by Dechant (1991) as reading the written graphic symbols or alphabetical letters. So, to practice reading skill, the video must consist of text in the form of subtitles. According to Reich (2006) as quoted in Zarei and Rashvand (2011), subtitling is referred to as the audiovisual translation where viewers can read text on the screen and watch the pictures and listen to the dialogues at the same time. Subtitles help learners notice what the dialogue is about in order to understand the message of video. Therefore, audiovisual input has recently received increasing attention from many domains such as the Second Language Acquisition (SLA) and the Computer-Assisted Language Learning (CALL) because of its vividness, authenticity, and easy accessibility. Videos with on-screen subtitles can influence the performance of EFL/ESL learners as a way of L2 instruction (Wei \& Fan, 2022).

Nowadays, many studies focus on using videos (movies or series) with subtitles for EFL learning purposes. As Magasic (2017) stated, learning through watching movies is very valuable in EFL/ESL instruction. Some studies supported the idea that audio-visual materials that are improved by subtitles seem to develop second language reading and listening comprehension skills (Borras \& Lafayette, 1994; Danan, 2004). As for teaching reading skills, subtitled videos can play a vital role in helping learners to comprehend what they have read and to remember the message. Besides, learners can process text in the foreign language fast and develop speed reading by trying to focus on the subtitles along with the dialogues. They can also develop their word recognition and vocabulary acquisition skills. One of the reading difficulties learners face is getting information from the reading text which makes them feel tired and tedious
from reading long texts. As a result, language teachers should select a proper media that can enhance the learners' reading skills. Zanon (2006) showed that reading and subtitles can be related since subtitled videos present a combination of image, sound, and text which is vital for foreign language learning. In reading instruction, subtitled videos can captivate students' attention to the

The JALT CALL Journal learning process itself and help them maximize their understanding of reading. As for the study purposes, both intralingual and interlingual types of subtitles are used. Subtitles in this study can be defined as the written text on screen which shows a translation for the spoken dialogue either English or not.

## Online reading

Recently, many people all over the world search for the term online reading because of COVID 19 epidemic and the increasing interest in technology. In this respect, online reading is considered a crucial method for increasing knowledge of learners in the world. Nowadays, everybody owns an electronic device (Hamari, et. al., 2014). As a result, people started to read through a screen than on paper (Karaman, 2016). Online reading means getting knowledge from digital text formats (Nga, 2021). Acording to Hira and Munira (2018), cited in Nga (2021), the effectiveness of online reading lies in the fact that learners can easily access any amount of information or any type of material instantly and without paying any money; therefore, it increases learners' reading interest. In short, Akpokodje (2016) determined that learners read online information all the time because of its availability. According to Lazonder, Biermans, and Woperis (2018), learners who are familiar with technology are more effective than those who are not. Karaman (2016) also added that online reading can be slower or tiring for learners than reading printed texts. The current study attempts to use online reading as a medium to develop learners reading speed and motivation.

## Reading speed

Reading speed has been defined by various researchers. Alhajaj (2006) defines it as the number of words read during a certain period of time. Another definition has been given by Amarnah (1998) as the number of words read in a minute as compared to the comprehension level of students. The average number of words, according to Fadlallah (2004), ranges from 180 to 300 words per minute. The importance of reading speed is shown by Nuttall (1996), cited in Macalister (2010), in two different circles: the weak reader and the good reader. The good readers in the first circle read fast with a greater amount of reading along with more understanding and enjoyment. On the contrary, in the weak reader circle, readers suffer from the lack of understanding, enjoyment, and reading. Teachers need to focus more on reading speed activities so that students can move from the weak circle to the good circle. Therefore, due to its importance, researchers such as Chung and Nation (2006) recommended that reading speed should be a part of every reading class. According
to Dudley (1993), learners need to increase the number of words which can be recognized by their eyes. As for Adler (1995), learners should be trained to reduce the regressive movement of their eyes.

There is a relation between reading speed and reading comprehension. Some researchers believe that reading slowly reduces comprehension and

The JALT CALL Journal that increasing reading speed will enhance reading comprehension (European Business Centre, 2008). Other researchers believe that slow readers are not necessarily weak (i.e., Younis, Alnakah, \& Medkoor, 1988) and that fast readers are not necessarily good (i.e., Bond, Jinker, \& Wasson, 1984). According to Harris (Amarnah, 1999), there is a positive relation between speed and comprehension. Thus, in the current study, reading comprehension has been evaluated after every reading activity. It was also evaluated at the pre- and post- reading speed tests. However, the relation between reading speed and reading comprehension was not statistically analyzed because the main aim of the study is reading speed. Besides, there are many research studies that tackled the effectiveness of subtitled movies on reading comprehension. But, more research is needed on reading speed.

The theoretical rationale behind the current study is the automaticity theory founded by LeBerge and Samuels (1974). In short, this theory is based on the idea that the learners' performance of any language skill will be slow and timeconsuming at first because it needs a lot of of awareness and attention. However, when it is performed many times, it would be done rapidly and unconsciously (Huey, 1968). As stated by Samuels (1999) and Stenberg et. al., (1999), to be an automatic reader, students should go through two main stages: a beginning and a final automatic stage. The first stage is when beginning readers need to spend much time and effort in the decoding process. Here, they pronounce words loudly in their minds. The second stage includes word recognition where they connect words to their meanings depending on their background knowledge. This process becomes automatic and mechanical through practice.

## Online reading motivation

To understand the concept of reading motivation, it is necessary to firstly define the concept of motivation. Motivation has been defined by various researchers for example, Wigfield and Guthrie (1997) who defined it as "beliefs, needs, and goals which individuals have." As for reading motivation, it has been defined by Guthrie and Wigfield (2000) as the motivation learners have to show their negative and positive opinions about reading. Also, according to Conradi, Jang, and Mckenna, 2014: as cited in McGeown et. el., (2020), it is defined as "the drive to resulting from people's beliefs about attitudes toward, and goals for reading."

In 1997, a Motivation for Reading Questionnaire (MRQ) was developed by Wigfield and Guthrie that was adopted by many foreign or second language researchers in an offline reading environment, for example, Lau (2019), Troyer et al., (2019), and Schiefele et al., (2016). It has been described as the most thorough measure of reading motivation (Schiefele \& Loweke, 2018). It focused on both intrinsic and extrinsic reading motivation. Recently it was modified to be
used in the online reading environment by different researchers (e.g., Forzani, Li, Leu, \& Rhoads, 2020; Yaghi, 2019). Therefore, the current study used an adapted online reading motivation questionnaires to study the EFL learners' motivation in the online reading environment.

## Attitudes toward subtitled movies

The word attitude has been defined by different researchers of both psychology and education. According to Montano and Kasprzyk (2008), attitudes are personal beliefs that evaluate the results of performance. According to Suetrong (2015), attitudes refer to a way of how a person thinks or feels. Behavior can be either positive or negative depending on the individual's attitude. In language learning, attitude is considered one of the main factors for learners because it will bring out the performance of using target language and boost language learning achievement. Also, according to Visser (2008) and Kara (2009) attitudes affect language performance because success in learning a language does not only depend on the intellectual ability of learners but also on their positive attitudes. On the contrary, if learners have negative attitudes toward language learning, they will have poor language performance and poor motivation. Thus, attitudes toward language learning are necessary for learners to develop their English language skills such as reading, writing, speaking, and listening skills.

## Previous studies

## Rapid Serial Visual Presentation and reading speed

From a pedagogical perspective, it is essential to conduct further research on RSVP since most studies have focused on native speakers not EFL/ESL learners (Masson, 1983) especially within the online environment. To the best knowledge of the researchers, very few studies have focused on the effect of RSVP on reading speed and its relation to reading comprehension. According to Hester et. al., (2016), by removing saccades, well designed rapid serial visual presentation (RSVP) text displays can enhance reading speed without any lack of comprehension. Their results show that there were no differences between comprehension for RSVP technique and traditional text displays at normal reading speeds.

Rahimi and Babaie (2021) indicated the relation between reading strategy use and reading comprehension as mediated by reading rate among advanced EFL learners who received training by using Rapid serial visual presentation technique. The findings revealed that the integration of eye movement training into mobile phones via RSVP, as a prominent device among language students, is a preferable way to promote reading rate through improving learners' metacognitive awareness of reading strategies. The current study examines the impact of RSVP technology in the form of subtitles on learners' online reading speed and motivation. In this study, movie subtitles are used as RSVP technology to enhance reading speed. In the short paper by Armstrong and Shotton
(2015), they used the rapid serial visual presentation technique to present a new form of subtitle presentation for speed reading mobile applications.

Due to the new era of technology, using computer and internet properly needs effective and efficient readers. After analyzing the literature, Dillon (1992) stated that most research results indicated that screen reading is definitely slower than reading from a paper. The results suggest a performance deficit of between $20 \%$ and $30 \%$ when reading from screen. In the study by Dundar and Akcayir (2012), they compared students' screen and paper reading performance, reading speed and reading comprehension. Results showed that there was no significant difference between the two groups in reading speed or reading comprehension. Solak (2014) examined to what extent computer or paper reading affects the students’ reading speed, accuracy, and comprehension. The results showed that English teachers preferred paper reading where their performance was higher than computer. The study also showed that the speed of reading on paper was nearly $12 \%$ faster than reading on a computer screen. Moreover, Mpofu (2016) investigated the difference between screen reading and paper reading. Results revealed that most learners preferred reading from printed materials over reading from computer or mobile screens. Learners who read on paper had the fastest reading rate than those who read on mobile device or computer screen. The results of the previous studies agree with the current study because there were no significant differences among the two experimental groups and the control group on the reading speed tests.

## Subtitled movies

A great range of studies has examined the impact of using subtitled movies on different skills. Latifi,et al. (2011) divided the participants into three groups: bimodal subtitles group, standard subtitles group and no subtitles group. The groups that used subtitles were outperformed by no subtitles group. This was related to the fact that reading the subtitles only enhanced their comprehension, not their listening ability. Another study by Hwang and Huang (2011) examined whether video English subtitles improve or prevent EFL students' reading comprehension using both captioned videos and videos with no subtitles. The findings in this study indicated that videos with captions had no effect on the reading proficiency of learners after five weeks; therefore, it was difficult to establish the cause-and-effect relationship between the presentation of captioned videos and the experimental group's reading abilities. So, learners should be exposed to an authentic environment and a great deal of practice on caption viewing. This leads to effective reading improvement.

## Reading motivation

Previous research shows that motivated learners spend more time on reading (Guthrie, Wigfield, Metsala \& Cox, 1999). These learners were found to be
benefits of being a motivated reader by stating that it is important to motivate students to read by giving them chances to select their preferred materials. In other words, learners would read more when they are permitted to choose their reading materials because they would find that reading is an enjoyable activity. So, it can be concluded that learners with high motivation would read more than learners with lower motivation.

However, limited research shows the importance of reading motivation to online reading comprehension (Neumann, 2015). Despite this importance, online reading motivation has been rarely tackled. This is mainly because there are a few valid and reliable tools to measure learners' online reading motivation (OECD, 2012). Therefore, studies on EFL/ESL online reading motivation are required (Larson, 2009).

## Attitudes toward using subtitled movies

Various research studies have claimed that students had positive attitudes toward watching subtitled movies. In the study by Suetrong (2015) the results showed the learners' positive attitudes toward using movies with English or non-English subtitles in developing listening comprehension. Moreover, Alzamil (2011) investigated second language learners' attitudes to the use of subtitles when watching English audio-visual materials or videos. The results indicated that most participants had positive attitudes toward using English subtitles more than using Arabic subtitles. Also, Mansouri (2018) investigated the students' attitudes towards the use of subtitled English movies to develop content comprehension and vocabulary recognition. However, the current study rather focused on reading skills. It aimed to investigate learners' attitudes toward using subtitled movies to enhance students' reading speed. It will also be gathering the ideas and opinions of the participants, which can be a path to improve their reading speed.

## Method

## Design

The study follows a pre-post experimental mixed-method design where three groups were included: two experimental groups and one control. The data was analyzed both qualitatively and quantitatively.

## Participants

Ninety students were divided randomly into three equal groups of thirty learners. Almost all of them have studied English for thirteen academic years. After analyzing the course specifications, the researcher realized that among their college courses, they are supposed to study reading for only three courses in three academic years. At the first-year course, the fundamentals or basics of English reading skills were emphasized for example, scanning and skimming
strategies. In the second year, they study how to improve reading comprehension, different reading techniques, finding the main ideas and defining vocabulary in context. However, due to COVID-19 quarantine, they could not take that content. Finally, in the third year, the focus is on critical reading and how to write a critical review. Therefore, the reading courses mostly focus on the theoretical steps of reading. Through analyzing their course specification book, the researchers realized that they have never studied how to improve their reading speed.

## Instruments

In order to collect the study quantitative and qualitative data, the following instruments were administered:

## The online reading speed tests

Two online reading speed tests were performed by the learners before and after the training program. The passages ranged from 400 to 800 words along with questions to test reading comprehension. The online tests were taken from AceReader (https://www.acereader.com) and from FReaderonline (http:// www.readingsoft.com/). The participants could click on the stop button after reading the first passage on screen and see how many words per minute ( $\mathrm{w} / \mathrm{m}$ ). Then, they answer some reading comprehension questions. Then, they start reading the second passage and record their speed. To score the learners' reading speed, the researcher calculated the means of the two passages. This reading measurement followed the method of testing reading speed by Champeau de Lopez (1993) and Comon and Heavers (1998), as cited in Arab (2009). They calculated the reading speed of students by dividing the number of words that have been read by the total amount of reading time. It is recorded in words per minute ( $\mathrm{w} / \mathrm{m}$ ).

## The online reading motivation questionnaire

The researchers adapted Yaghi, Abdullah, and Mustafa's reading motivation questionnaire (2019) that was originally taken from Wigfield and Guthrie's Motivations for Reading Questionnaire (1997). However, the researchers modified and added some statements for the purpose of the study. An online reading motivation questionnaire was prepared. It was made of 38 items. A five-point Likert-scale was used which included ( 0 for strongly disagree, 1 for disagree, 2 for uncertain, 3 for agree, and 4 for strongly agree). As for the reliability of the questionnaire, it was conducted randomly on a sample of 39 EFL learners. Then, Cronbach's Alpha was calculated (IBM SPSS Statistics, version 22). The Cronbach's Alpha was 084 which shows high reliability (Appendix A)

The researchers adapted a questionnaire from Worrawattananukul (2016) that was originally adapted from Pimsamarn (2011) and Safranji (2015). The researchers prepared a questionnaire made of 15 items which followed the five-point Likert-scale which included ( $0=$ strongly disagree, $1=$ disagree, 2 = uncertain, 3 = agree, and $4=$ strongly agree). Moreover, the researchers added two more direct (yes/no) questions about students' positive or negative attitudes toward using subtitled movies. Also, one open-ended question for learners to express freely their thoughts and opinions of the online reading speed experiment. The students' answers in the two groups were analyzed by the researchers.

## Instructional procedures and data collection

Ninety EFL learners volunteered during the second semester of the academic year 2020/2021. They were equally divided into three groups: two experimental and one control. Then, their reading speed, comprehension and motivation were examined before the experiment which lasted for eight weeks. Two sessions were administered per week for about 60 minutes. Before the experiment, the researchers presented an orientation session for the three groups about the objectives of the experiment, the reading speed strategies. For the experimental groups, the researchers added how the learners can complete the online tasks on Google Forms. Researchers also presented the subtitled videos and the comprehension questions on Google forms to help students answer easily after watching the videos. A link to the subtitled video was available on the Google form and the video itself was uploaded on Google drive. (Appendix B)

Subsequently, during the experiment, the two experimental groups practiced the RSVP through watching clips of English subtitled series. One or two sentences were shown at the bottom of the screen. They disappear and other sentences appear according to the dialogue and at different speeds. The sound of the clips for the first group was English; however, for the second group, it was French, Spanish or Italian so that learners do not be familiarized with one language. Then, they answered comprehension questions on these clips which were about thirty minutes each. The Clips were taken from the two famous BBC TV shows, Sherlock and The Adventures of Merlin. Meanwhile, the researchers gave feedback after each session to the learners in order to evaluate their progress. As for the control group, the students practiced reading speed using their course books two times per week also for eight weeks. After reading the course book texts, they answered comprehension questions. After concluding the experiment, the learners' reading speed, comprehension, and motivation were reexamined. Besides, their attitudes toward subtitled movies were also analyzed. Then, the findings were eventually examined, and the results were interpreted.

## Data analysis and results

To answer the questions of the current study, both quantitative and qualitative analyses were used.

## Quantitative data analysis

The three groups' online pre-and-post speed reading tests were quantitatively analyzed by using the same method of measuring reading speed of Nuttal (1982), Champeau de Lopez (1993), and Comon and Heavers (1998). Firstly, the students' scores in the three groups were analyzed statistically on online reading speed post-tests by using the analysis of variance to identify which method of the three methods is more effective. Secondly, the paired samples $t$-test was used to get the differences between the pre- and post-tests of each group. Thirdly, the independent sample $t$-test was used to detect the difference between the two experimental groups on the post administration of the online reading motivation questionnaire. Also, the paired sample $t$-test was used to compare the pre-post administration of the online reading questionnaire.

## Results for the online reading speed post tests

The analysis of variance was used in order to compare the three methods of the study: using English dialogue with English subtitles, using non-English dialogue with English subtitles, or reading from the paper course books. It was used to compare the students’ scores at the online reading speed posttests. Before that, the normality test was used to examine the distribution of the scores. It was $\geq$ 05 which shows a normal distribution of the scores. Then, the assumption of homogeneity of variances was checked and the significance of Levene statistics was .848 which was $\geq 05$. Subsequently, the analysis of variance was used. Table 1 shows the results.

Table 1. One-way analysis of variance among the three groups' reading speed posttests

| Groups | n | $\mathbf{m}$ | sd | f | sig |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Group 1 (English-English) | 30 | 237.30 | 108.50 | .962 | .386 |
| Group 2 (non-English-English) | 30 | 234.35 | 129.16 |  |  |
| Group 3 (coursebook) | 30 | 200.51 | 103.06 |  |  |

Results of the analysis of variance indicate that there were no significant differences among the three groups in the online reading speed posttests mean scores. This shows that students of the three groups almost achieved the same results or performance. Thus, none of the three methods proved to be more effective to enhance students' online reading speed.

To compare the students' mean scores of each group online reading speed prepost tests, the researcher used the paired sample $t$-test. Results are reported in table 2.

Table 2. The $t$-values for online reading speed pre- and posttest

| Groups | Test | $\mathbf{n}$ | $\mathbf{m}$ | $\mathbf{s d}$ | $\mathbf{d f}$ | $\mathbf{t}$ | $\mathbf{s i g}$ |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Group 1 | Pre | 30 | 120.91 | 70.88 |  |  |  |
|  | Post | 30 | 237.30 | 108.50 | 29 | 6.59 | .000 |
| Group 2 | Pre | 30 | 132.88 | 58.21 |  |  |  |
|  | Post | 30 | 234.35 | 129.16 | 295.40 | .000 |  |
| Group 3 | Pre | 30 | 133.0 | 62.15 |  |  |  |
|  | Post | 30 | 200.51 | 103.06 | 29 | 3.768 | .001 |

As Table 2 shows, there were statistically significant differences between students' pretests and posttests mean scores on online reading speed at the 0.01 level for the posttests in all the three groups. This means that the students significantly achieved better performance at the post tests and read faster than they did at the pre-tests.

## Results for the online reading questionnaire

The independent sample $t$-test was used to detect the difference between the two experimental groups on the post administration of the online reading motivation questionnaire. Results are reported in Table 3.

Table 3. Independent sample $t$-test of the online reading questionnaire post administration

| Groups | n | $\mathbf{m}$ | sd | t | sig |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Group 1 (English-English) | 30 | 116.46 | 5.28 | 1.28 | .204 |
| Group 2 (non-English-English | 30 | 118.13 | 5.75 |  |  |

As shown in Table 3, there were no statistically significant differences between the students mean scores in the two experimental groups' post administration of the online reading questionnaires. This means the two groups were almost equally motivated after the online reading speed intervention. Consequently, the paired sample $t$-test was used to compare the pre-post administration of the online reading questionnaire. Results are reported in Table 4.

Table 4. The $t$-test values for online reading questionnaire pre- and post- administration

| Groups | Test | $\mathbf{n}$ | $\mathbf{m}$ | $\mathbf{s d}$ | $\mathbf{d f}$ | $\mathbf{t}$ | $\mathbf{s i g}$ |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Group 1 | Pre | 30 | 116.80 | 4.38 |  |  |  |
|  | Post | 30 | 115.26 | 5.83 | 29 | 1.13 | .268 |
| Group 2 | Pre | 30 | 116.63 | 7.52 |  |  |  |
|  | Post | 30 | 115.86 | 6.66 | 29 | .494 | .625 |

As table 4 shows, there were no significant differences between the students' mean scores in the two groups' pre-post administration of the online reading motivation questionnaire. The means are almost equal in both groups either in the pre or post administrations. This means that both groups were almost equally motivated before or after the experiment. This could be due to the fact that learners needed more sessions and more practice using subtitled movies to enhance online reading speed because the technique was new to them. Another reason might be that it was their first time to learn about reading speed, so they were not fully acquainted with the strategies which made them equally motivated before and after the intervention. Another reason could be that learners nowadays use electronic devices all the time. Many participants told the researchers that they were highly motivated since they were learning to improve their online reading speed and also watching subtitled movies. However, they were already used to reading online whether for using social media sites or reading articles for research purposes, which might be the cause of the previous results.

## Qualitative data analysis of students' attitudes

Qualitatively, the students' attitudes towards using subtitled movies for developing online reading and motivation were applied at the end of the intervention on the two experimental groups and were also analyzed as shown in Appendix C.

Table 5. Analysis of the students' responses on the attitudes online form

| Items | Groups | Percentage of responses |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Strongly agree | Agree | Neutral | Disagree | Strongly disagre |  |
| 1. I enjoy screen reading by using movie subtitles | Group 1 | 32\% | 52\% | 16\% | 0\% | 0\% |  |
|  | Group 2 | 30\% | 46\% | 19\% | 0\% | 3\% |  |
| 2. Reading movie subtitles makes it easy to understand the content of lesson | Group 1 | 28\% | 64\% | 8\% | 0\% | 0\% |  |
|  | Group 2 | 15\% | 57\% | 23\% | 3\% | 0\% |  |
| 3. Using movie media is very interesting. Because, we not only read the subtitles but also watch the film | Group 1 | 44\% | 40\% | 12\% | 4\% | 0\% |  |
|  | Group 2 | 30\% | 57\% | 11\% | 0\% | 0\% |  |
| 4. English subtitles in the movie help us to learn new vocabulary | Group 1 | 24\% | 64\% | 12\% | 0\% | 0\% |  |
|  | Group 2 | 64\% | 38\% | 15\% | 0\% | 0\% |  |
| 5. English subtitles in the movie help us to read fast on screen | Group 1 | 4\% | 64\% | 24\% | 8\% | 0\% |  |
|  | Group 2 | 15\% | 46\% | 30\% | 7\% | 0\% |  |
| 6. Learning English by movie motivates me to learn | Group 1 | 20\% | 72\% | 8\% |  |  |  |
|  | Group 2 | 38\% | 57\% | 0\% | 3\% | 0\% |  |
| 7.The use of movie media is better than any other media in reading class | Group 1 | 16\% | 40\% | 16\% | 26\% | 0\% |  |
|  | Group 2 | 19\% | 38\% | 26\% | 11\% | 3\% |  |
| 8. I like to watch more online subtitled movies to develop my screen reading speed | Group 1 | 12\% | 68\% | 16\% | 4\% | 0\% |  |
|  | Group 2 | 26\% | 53\% | 15\% | 3\% | 0\% | - |
| 9. Have your views about learning screen reading become more positive after watching subtitled movies | Group 1 | 16\% | 72\% | 8\% | 4\% | 0\% | ¢ |
|  | Group 2 | 19\% | 65\% | 11\% | 3\% | 0\% | $\stackrel{\text { ¹ }}{\substack{\text { a } \\ 0 \\ 0}}$ |
| 10. Has watching subtitled movies increased your interest in learning screen reading | Group 1 | 16\% | 80\% | 4\% | 0\% | 0\% | \% |
|  | Group 2 | 23\% | 53\% | 19\% | 3\% | 0\% | $\stackrel{\text { ® }}{7}$ |
| 11. Do you think learning through movies is important | Group 1 | 32\% | 68\% | 0\% | 0\% | 0\% | O |
|  | Group 2 | 38\% | 53\% | 3\% | 3\% | 0\% | $\bigcirc$ |
| 12. Are you now interested in learning other skills through watching movies | Group 1 | 20\% | 48\% | 28\% | 4\% | 0\% | $\bigcirc$ |
|  | Group 2 | 42\% | 34\% | 11\% | 7\% | 3\% | 응 |
| 13. The English audio in the movies helped me to understand the content and read faster The foreign audio in the movies helped me to understand the content and read faster because I focused more on reading the subtitles to understand | Group 1 | 24\% | 72\% | 4\% | 0\% | 0\% | $\begin{aligned} & \text { e } \\ & \vdots \\ & \text { m } \end{aligned}$ |
|  | Group 2 | 7\% | 50\% | 15\% | 19\% | 7\% |  |


| 14. The English audio in the <br> movies distracted me from <br> reading the subtitles | Group 1 | $0 \%$ | $12 \%$ | $28 \%$ | $52 \%$ | $8 \%$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| The foreign audio in the <br> movies distracted me from | Group 2 | $3 \%$ | $26 \%$ | $23 \%$ | $38 \%$ | $7 \%$ |
| reading the subtitles |  |  |  |  |  |  |
| 15. I did not care about the <br> audio, I only focused on <br> reading the subtitles | Group 1 | $0 \%$ | $0 \%$ | $16 \%$ | $72 \%$ | $12 \%$ |

Table 5 shows that after analyzing students' responses, the majority of students in the two groups attributed their enjoyment and positive attitudes during intervention. More than $80 \%$ to $95 \%$ of the students agreed that they have enjoyed reading subtitles by watching movies. More than $80 \%$ agreed that reading subtitles made it easy to understand the content. Also, more than $85 \%$ realized that reading subtitles increased their vocabulary, comprehension and reading speed. Most students of both groups believe that learning through movies is important, therefore, they are interested in learning reading and other skills also through using subtitled movies. They would prefer teachers to use this strategy later when teaching English language skills.

As for the audio of the videos, items 13 and 14 were changed according to the group because the audio was different for both groups. For Group 1 where the audio was English, $96 \%$ of students believed that the English audio helped them to understand the content and to read faster. However, for Group 2,57.7\% students indicated their interest in focusing on reading the subtitles because the audio was in a different language than the subtitles. Thus, as responses to item 15 show, the majority of students indicated that they cared about the audio also not only reading the subtitles.

Two "yes/no" questions were asked to the students to show their positive attitudes. The first one was: Do you now have a positive attitude toward using subtitled movies to develop your screen reading speed? $92 \%$ of Group 1 students agreed that they had a positive attitude; whereas $96 \%$ of Group Two students agreed. The second question was: Do you have now a positive attitude toward using subtitled movies to develop your language skills in general? $96 \%$ of Group 1 students showed that they prefer using movies to develop other skills; whereas, $100 \%$ of Group 2 students showed their support also. This shows that the majority of students in both groups showed positive attitudes toward using movies.

A final open-ended question was asked to the two groups to express their opinions or thoughts about using subtitled movies to enhance reading speed. Some students of Group 1 expressed how they were motivated to try a new strategy to develop their reading speed. However, some students faced certain problems concerning the internet connection and the speed of the subtitles, especially at the beginning of the intervention. They added that they benefited so much since they could develop listening skills, learn new vocabulary, develop pronunciation, and read faster. Some students were excited as this was a new teaching method for them, and no one had used this method with them
before. Furthermore, they hoped that they could use this method for further learning. The following screenshots are some of their answers.

I think reading through movies can motivat the students to learn the language more because its more fun

Some times I was bored from learning online because I found it difficult when I can't get what it has been said but after one and more time with practice of movies I started to read faster with a better learing about the text

The positive thing is developing my reading skill through that movies, but the negative thing is the low fast of internet that don't help me to listen so much movies

It is interesting because learning through movies is a way to enjoy at the same time It increases our awareness and attention by making sure to listen and read every word. While using movies, you not only improve the skill of reading, but also the skill of listening and learning the correct pronunciation. Knowing new words and using them in our dally life

Reading through movies helps to read faster than usualit also helps developing listening skill becouse it .provide us with the pronounce of what we read

It has no flaws because i was reading slowly at first but now i read faster and i liked to watch the movie with reading it was a fun thing

I usually watch English movies and series lucky me i watched Sherlock before so i have a proper understanding of the episode and the questions though i watched it before but watching it with the English subtitle is a lot different and made me recognize some idioms i didn't notice before with the Arabic subtitle ofcourse such as "I havn't the foggeist" in one of the episodes, I think it really improve my listening and reading speed while the actors talk,i really enjoyed this experience as it never happened in our department although we're in English department and I hope other doctors will think of this brilliant idea to help us practice the language.However, In the other hand while watching Merlin, although it was really interesting but hearing the old English language with this dialect surprised me with a lot of new vocabulary also made me go and search for its meaning. Using English audio made me used to hear and read more quickly in the end of the session. Finally i don't have any negative opinion the only thing i wished to take tests from .listening and writing groups and improve these skills also
Figure 1. Screenshots of Group 1 student responses

Similarly, Group 2 students also expressed their interest, excitement, and enjoyment when they used this new method for enhancing online reading speed. A few students mentioned that they were distracted at first because of the capitalized subtitles, but later they could read them easily. Additionally, a small number of students were distracted at first because of the audio was not in English, but later they could focus on reading the subtitles without being distracted.

[^0]I enjoyed learning more about reading skill through watching movies, but I disagree watch move in other language, I agree listen the language and read it. Thanks our doctor for your effort

Figure 2. Screenshots of Group 2 student responses

In sum, the points of strengths mentioned by students were that they could learn new words, enhance other skills like listening and pronunciation, enjoy reading, read faster than before, and being encouraged to learn through a new method of teaching reading. As for the weaknesses, few students had some problems concerning the internet connection, the speed of the subtitles, the capitalization of the subtitles, and the non-English audio.

## Discussion

The findings of this study showed that the three groups achieved almost an equal development in the overall reading speed. However, no group outperformed the other. The findings also revealed that reading speed can be enhanced through using RSVP in the form of subtitles with the need for more practice. These results agree with those of Rahimi and Babaie $(2020,2021)$ who concluded that training learners with the RSVP technology helped them improve their reading speed and consequently their reading comprehension in MALL environment. They also concluded that RSVP is a powerful tool for developing EFL learners' reading skills. In a study by Dreyer and Nel (2003), they revealed that graphic illustrations on screen facilitate learners reading comprehension and increase their reading rate. Another study by Boo and Conklin (2015) showed how important RSVP is in lowering the time needed for the eye to read; therefore, helping learners to read at higher speeds. Moreover, Beccue and Vila (2004) observed that when using the RSVB with students, their reading speed increased because they read instantly the highlighted words.

The findings of the current study also agree with those of Dodick et.al., (2017) and Allen, Beatty, and Blanco (2012) who reported that eye movement training improved learners' reading skills and oral reading fluency.

The current study also revealed that all the three groups' reading speed were enhanced whether with the RSVP technique or traditionally. This finding agrees with that of Benedetto et al., (2015) who claimed that the RSVP is not better than traditional reading for increasing reading speed or comprehension. In contrast, the findings of the current study do not agree with those of Benedetto et al., (2015) and Chen and Chien (2007) who claimed that the RSVP technique might decrease the reading speed. Other researchers believed that using RSVP training improve speed at the expense of comprehension (Russell, James, \& Cohlmia, 2002).

The current study findings also agree with those of Abdullah (2018) who concluded that reading speed and comprehension can increase in both online and face-t-face environments. Also, Margolin et. al., (2013) recognized in their study that reading online or on paper does not affect reading speed or comprehension. Moreover, Dyson and Haselgroves (2000) and Paul (2014) observed that when students read on screen, they can be distracted by scrolling rather than focusing on reading chunks of words. Fraser (2004) and Carrel and Grabe (2002) recommend more research on using speed reading activities to enhance reading speed and comprehension.

It should be taken into consideration that it was the learners' first time to learn reading speed or use movies for learning purposes. For the researchers' knowledge, subtitled movies were mostly used to enhance learners' listening skills or vocabulary acquisition. This agrees with the findings of Bellaem (2018), Koolstra and Beentjes (1999), Etemadi (2012), Faqe (2017), Gorjian (2014), Harji (2010), Iscan (2017), Hayati and Mohamedi (2012), and Munir (2016) who concluded that watching subtitled movies is effective in developing learners listening skills, vocabulary acquisition and word recognition. However, few studies used subtitles for enhancing reading fluency and comprehension (d’Ydewalle, Praet, Verfaillie, \& Van Rensbergen, 1999; Hwang \& Huang, 2011; Parlato, 1985; Pelani, 2016)

However, the two experimental groups' online motivation was not developed as required. Students nowadays use mobiles mostly for socialization purposes, so they may be either not well motivated to learn online or they got used to online learning so that they do not feel motivated as before. According to Ackerman and Goldsmith (2011) and Kaufman and Flanagan (2016), students preferred reading printed texts to reading on screen. These could be reasons for the consistent results of online reading motivation before or after the experiment in both groups. In contrast, the learners who used subtitled movies as RSVP technique showed positive attitudes toward using it to enhance their reading speed. They expressed their excitement and enjoyment since it was their first time using subtitled movies as a technique for learning, especially reading speed which is usually neglected in their academic reading courses.

## Limitations of the study

Although the relation between reading comprehension and reading speed is important, the current study was limited to the development of reading speed. Students' reading comprehension was tested regularly in the three groups during the intervention. However, reading comprehension was not statistically analyzed after the experiment. The researchers tried to focus on one main research point especially since there were a wide range of studies on using subtitled movies to improve reading comprehension but very few on speed reading.

Besides, the researchers used subtitled movies with two different audio sounds (English and non-English) with the two experimental groups. The study was limited to analyzing the effect of subtitles on enhancing reading speed though the audio may influence students' understanding of the subtitles. Therefore, in the attitudes analysis, researchers asked students if the audio helped them to understand or blocked their comprehension.

## Conclusion

The current study is one of few in investigating and integrating the rapid serial visual presentation technique in the form of subtitles and eye movement training into EFL instruction. It aimed at examining whether training EFL learners with the RSVP technology can affect their online reading speed or not. The results revealed that online reading speed can be developed through using subtitles as rapid serial visual presentation. The results also showed that all the groups have achieved high performance in reading speed tests. All the groups were improved at the end of the program and no group outperformed the other. Therefore, the program was effective in enhancing online reading speed of EFL learners. Results also indicated that the online reading motivation of the two experimental groups were almost equal. Further research is required to investigate these results. It is recommended to conduct more studies on using rapid serial visual presentation to develop technology with other skills in an online environment. Also, more studies can be conducted on the same topic to find out with other tools reasons why RSVP technology helps students to improve their reading speed and comprehension and how. Another line of research may focus on tracking and analyzing the eye movement of learners during reading online.

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## Appendix A

The online motivation questionnaire

| Items | Strongly <br> disagree | Disagree | Neutral | Agree | Strongly <br> Agree |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 1. I enjoy online reading |  |  |  |  |  |
| 2. I read information from the <br> internet as much as I can |  |  |  |  |  |
| 3. I read online because it's fun |  |  |  |  |  |
| 4. I read interesting <br> information online |  |  |  |  |  |
| 5. I read information online <br> during my free time |  |  |  |  |  |
| 6. I spend long hours reading <br> online information |  |  |  |  |  |
| 7. If I hear about something <br> interesting, I might use the <br> internet to read about it. |  |  |  |  |  |
| 8. I read online information as <br> little as possible. |  |  |  |  |  |
| 9. Online reading is not fun. |  |  |  |  |  |
| 10. Online reading is not one of <br> my favorite activities. |  |  |  |  |  |
| 11. Online reading is boring. |  |  |  |  |  |
| 12. I put in as little effort as <br> possible to online reading. |  |  |  |  |  |
| 13. It is easy to read <br> information on the internet, so <br> I won't have to work hard |  |  |  |  |  |
| 14. It's important to me to <br> understand online information. |  |  |  |  |  |
| 15. Online reading is more <br> useful than most of my other <br> activities that I do. |  |  |  |  |  |
| 16. Online reading in my spare <br> time is very important to me |  |  |  |  |  |
| 17. Reading information <br> online outside of university is <br> important to me |  |  |  |  |  |
| 18. I can make use of what I <br> learn by reading online. |  |  |  |  |  |
| 19. It is very important for <br> me to be successful in online <br> reading |  |  |  |  |  |
| 20. It doesn't make a difference <br> to me whether I read online <br> or not. |  |  |  |  |  |


| 21. Online reading takes too <br> much time |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 22. I don't want to read <br> information on the internet |  |  |  |  |  |
| 23. Online Reading is not a <br> good way to spend time |  |  |  |  |  |
| 24. Online Reading is not <br> important to me |  |  |  |  |  |
| 25. I have more important <br> things to do than online <br> reading in my spare time |  |  |  |  |  |
| 26. Online Reading is a waste <br> of time |  |  |  |  |  |
| 27. I can figure out how <br> different section fit together <br> when I read an online text. |  |  |  |  |  |
| 28. I am good at explaining <br> online information. |  |  |  |  |  |
| 29. I can find the main idea of <br> an online text. |  |  |  |  |  |
| 30. I can figure out what <br> unfamiliar words mean in <br> online texts. |  |  |  |  |  |
| 31. I understand most of the <br> information that I read on the <br> internet. |  |  |  |  |  |
| 32. I understand the main point <br> of an online text. |  |  |  |  |  |
| 33. I can correctly answer <br> questions based on online <br> information that I have read on <br> the internet. |  |  |  |  |  |
| 34. Online information is too <br> hard to read in my spare time. |  |  |  |  |  |
| 35. I need more help than <br> other students to understand <br> the main ideas of some online <br> information. |  |  |  |  |  |
| 36. It is hard to explain online <br> information that I read on the <br> internet. |  |  |  |  |  |
| 37. I think reading online is <br> really confusing |  |  |  |  |  |
| 38. It is hard for me to <br> answer questions about the <br> information I read online. |  |  |  |  |  |
|  |  |  |  |  |  |

## Appendix B

Google Forms samples

A subtitled video



The questions
Reading Session 9 (Group 2)

| $\infty$ |  |
| :---: | :---: |
|  | -uth** |
|  | - Name |
|  | 2401 |

$\qquad$

- ?What does the legend say about those who kill a unicorn 2
-The crops died only in Camelot 3

?What does the legend say about those who kill a unicorn . 2

The online reading questionnaire

* I enjoy online reading 1

1. Strongly disagree
2. disagree
3. Neutral
4. agree
5. Strongly agree
" I read information from the internet as much as I can . 2
6. Strongly disagree
7. disagree
8. Neutral
9. agree
10. Strongly agree


[^0]:    well, at first I want to thank you so much, Dr Elshaimaa to give me this golden chance to improve my reading skill, and these beautiful projects make me want to join the 3 projects, not only the reading project

    The project help me greatly to improve my capacity of reading, and try to read an English subtitle and by the way I love merlin more than sherlock The only thing that I can't adapt with it- at first - was the listening to a foregin language it's distracted me Q so much at first, but at the end of the project I think it's not bad You encourage me so much to continue to improve my skills in my spare time - In general it was a great project and I'm realy love you my Doctor

