

The Effect of Video- and Audio-Assisted Reading on Saudi EFL Learners' Reading Fluency and Comprehension

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Abstract

To be successful, students must have excellent reading abilities, as reading is the most important skill for achieving high levels of learning and personal development. This study aims to investigate the effectiveness of using audio-visual aids to develop reading fluency and comprehension among English language students of the University of Jeddah. This quantitative research employed a quasi-experimental method. Data were collected from a reading comprehension test and a reading fluency test, measuring students' word count per minute. Participants were divided into four groups, two each (a control group and experimental group) of men and women students. The men and women experimental groups comprised 26 students each, while the control groups comprised 24 and 28 students, respectively. The experimental groups watched videos to activate their thinking before reading the passage, and then read comprehension passages. Contrarily, the control groups were taught conventionally. Two achievement tests were used as pre-test and post-test to determine the improvement in the experimental groups. Independent- and paired samples *t*-tests were performed to compare the results of the two groups, which showed that the experimental groups outperformed the control groups in reading comprehension and reading fluency ($p < .05$). This study also investigated the differences between men and women regarding reading fluency and reading comprehension; the results did not show any differences between them ($p > 0.05$). These positive results shows that video and audio are effective for students in developing and supporting their reading fluency and comprehension. Therefore, it could be integrated and combined with traditional textbooks as supporting material to enhance reading skills among English language students.

Keywords: reading fluency, reading speed, reading comprehension, EFL readers, EFL technology

1. Introduction

1.1 Context of the Problem

Reading, a receptive language skill, is crucial in the ESL/EFL learning environment (Nezami, 2012; Alqarni, 2015) as students at the tertiary level of education have to deal with texts in different content areas and of varying levels of stylistic complexity on a regular basis. Competent academic readers, since they comprehend and construct meaning well, are better than their less competent counterparts at asking searching questions of the text, following the text's line of argument and determining its strengths and weaknesses.

However, acquiring a high level of reading competence is a daunting task (Küçükoğlu, 2013) as the learner has to master not only the low-order cognitive processes such as determining the core idea and identifying the supporting details but also the high-order cognitive processes such as following and assessing the argument, decoding figurative language, and evaluating the overall fit between the purpose, the reader, and the subject. Research indicates that ESL/EFL learners, even after years of exposure to the foreign language, sometimes find it difficult to decipher meanings of a given text (Grabe & Stoller, 2013). The problem of poor reading comprehension has been attributed to a number of causes, including unfamiliar or highly technical vocabulary, inadequate subject knowledge, weak organization of text, and convoluted sentences.

Besides comprehension, an essential element of reading is fluency, which has to do with the ease and speed of meaning making through reading. Reading fluency comprises the following elements: accuracy, speed, expression and comprehension. Each of these elements is significant but on its own does not equal fluency. Thus, a fluent reader is one who coordinates all the elements of fluency. In fact, numerous studies have concluded that reading fluency and reading comprehension are interdependent and complementary to each other: together, comprehension and fluency constitute reading competence (Shanahan & Lonigan, 2010; Kuhn & Stahl, 2003; Samules, 2006).

Given the centrality of reading skills in academic pursuits, researchers have sought to offer effective ways to teach academic reading. In this connection, numerous studies have demonstrated that blended instructional techniques prove to be very effective in improving EFL learners' reading fluency as well as reading comprehension (Tyler, Vaughn, & Chard, 2002). In particular, the application of audio-visual aids in teaching reading to EFL learners has been shown to enhance learners' reading fluency and comprehension considerably (Nunan, 1999: 103). Audio-visual aids refer to audio and video materials used as teaching tools. Examples of audio-visual aids include talking

dictionaries, audio recordings of conversations and presentations, and video lectures, documentaries etc. These tools facilitate learning in several ways: by supplementing human teaching, by arousing interest in the learner; by facilitating better recall of information. For example, in his study Ode (2014) found that students learn better when they learn by experiencing and doing things rather than by just taking in facts related to a subject under study. Here, audio-visual aides emerge as effective tools as they make students experience the subject aurally and visually. For example, while looking up a word in a paper dictionary will give the students spelling and meaning, using an audio dictionary a learning can hear the pronunciation as well.

1.2 Problem Statement

As is evident from student transcripts and anecdotal data collected from university staff, most students who enroll on the English language program at Khulis branch of Jeddah University have a low level of English reading ability. The curriculum for the reading course was designed by the National Geographic Society. It includes audio and video materials for each reading lesson. Teachers do not consider the significance of utilizing audio and video materials in their classes, due to the lack of infrastructure and content they are expected to cover in a term. Therefore, students do not derive much benefit from these courses.

1.3 Purpose of the Study

This research aims to evaluate the impact of using curriculum-supported material, such as audio-visual aids, to enhance first-year boys and girls' reading skills at the English Language and Translation Department of Jeddah University, Khulis branch. The study examines students' reading comprehension and reading fluency, while investigating the impact of National Geographic curriculum upon students' reading fluency and comprehension.

1.4 Significance of the Study

The major findings of this study are expected to enlighten university administrators and officials about the prevalent English language curriculum of the English department. It will also aid instructors in better understanding their students' reading and comprehension levels. The results of this research will contribute positively not only to assessing and understanding the department's current teaching practice, but also to investigating the enhancement of students' reading comprehension and reading fluency. The results will further contribute to predicting future topics that may be of aid in understanding the causes of reading comprehension and pace issues, which may include cultural or behavioral factors. Moreover, understanding the strategies and techniques of teaching and learning through technology may boost further research to uncover teaching and learning methodology issues. In summary, this research is significant as it investigates the improvement in students' reading comprehension and reading fluency as well as highlighting gender differences.

1.5 Research Questions

This study aims to answer the following questions:

- 1- To what level do audio and video materials improve students' reading fluency during the 14-week study period?
- 2- To what extent do audio and video materials improve students' reading comprehension during the 14-week period?
- 3- Is there any statistical dissimilarity between the boys and the girls in terms of reading fluency?
- 4- Is here any statistical dissimilarity between the boys and the girls in terms of reading comprehension?

2. Literature Review

Technology-enabled language teaching has enriched and enlivened students' language learning experiences (Al Mahmud, 2022). As audio-visual aids are being increasingly used in L2 learning and teaching, students are learning languages more easily and with more value today than they did when the learning material was simply presented to them as words. Identifying how audio-visual aids can facilitate language teaching, Jeremy Harmer (2007) argued that a range of aids—such as images and objects—can be used as teaching tools to expose learners to the target language and involve them in various language-learning exercises.

The view that English second language/English first language (ESL/EFL) learners benefit more from technology-enabled reading comprehension instruction than they do from traditional teaching derives from studies that compared technology-mediated reading instruction to traditional reading instruction. The study of Fogarty et al., (2017) found that students of reading classes (including many middle-school learners with weak reading comprehension), who received technology-enabled, multicomponent Comprehension Circuit Training in word reading, vocabulary building, and overall reading comprehension, demonstrated much better than those in the conventional reading classes, in terms of their overall understanding of the material, speedy and accurate silent reading, and test scores. Similarly, Samat and Aziz (2020) examined whether and to what extent the use of audio, video, and images in reading classes improved students' reading comprehension. Twenty pupils at a primary school in Malaysia first took a pre-test in reading comprehension, then received technology-enabled instruction in reading, and finally took the post-test. Comparison of the performance in the tests revealed that using audio-visual aids significantly improved pupils' reading comprehension. The usage of videos, followed by the use of sounds and images, was shown to be particularly helpful. Most of the researchers have found that language teachers have lately started using audio files in technology-mediated language teaching in the L2 environment to help students comprehend the topic more clearly and expand their vocabulary more quickly (Opeoluwa & Popoola, 2020; Chang & Millett, 2014; Brown et al., 2008; Chang, 2009, 2011 Rezaee et al., 2019; Webb & Chang, 2012). Previous research shown that audio-mediated reading improves vocabulary development and listening comprehension.

While numerous studies exist on how audio-assisted reading can improve listening comprehension, the literature regarding its role in increasing reading rate is sparse. Of the few studies aiming to determine how audio-assisted reading relates to learners in terms of reading rates, Gorsuch, Taguchi, Takayasu-Maass (2004) showed insignificant difference in terms of reading rate between the group that had audio-assisted reading and the group that did not use audio recordings as it practiced reading.

However, in a study regarding the link between instructional uses of technology and reading fluency, Bui and Macalister (2021) discovered that extensive reading online (ERO) significantly improved the participants' reading speed and accuracy. The goal of their study was to evaluate the efficacy of ERO as a technology-mediated teaching approach in enhancing the reading fluency of university students. The participants were 17 EFL students in a university in Vietnam who voluntarily participated in a ten-week research project. The outcome of the study established that the ERO system did improve the participants' reading level up to twenty percent. A study conducted by Robson et al. (2015) with 11 students (ages 6–9) in a primary school in Christchurch, New Zealand, found that the use of feedforward video self-modeling (FFVSM) in instruction was effective—which involves watching a video of oneself performing a task, significantly improved the participants' reading speed and accuracy. The participants were first evaluated through a standardized reading test to identify them for engaging in FFVSM. Here, the pupil would sit down holding a piece cardboard, the researcher would read from the text, and the child would repeat what they heard. This entire process was captured on video. Later on, the children watched video of themselves seemingly reading a passage fluently. This activity was repeated six times in fourteen days. Comparing the pre-test and post-test scores, the results demonstrated that the participants' reading fluency improved considerably. Therefore, FFVSM does have a tangible impact on reading fluency.

The previous studies by Bell, (2001) Taguchi et al., (2004); Al-Homoud & Schmitt, (2009); Beglar, et al., (2012) revealed that adults learning L2 usually read 60 to 80 words a minute. If an adult ESL learner reads somewhat slower than a voice on an audio tape and continues to do so while listening to the audio recording of the reading passage, eventually they will be able to stop reading one word at a time (Hill, 2001). For example, Brown et al., (2008) draw the following conclusion: when adult L2 learners practice reading aloud while an audio streaming of the same text was played, they begin to understand the text better, because the speaker has beforehand split the reading passage into smaller chunks for the listener. Considering the potential benefits of audio-assisted reading, reading fluency must be investigated by exploring the way in which audio-aided extensive reading can assist L2 learners read faster and comprehend more.

A good number of studies have examined the use of videos as a teaching method for languages and have emphasized how and to what extent video content, such as movies and television programmes, might affect EFL students' proficiency in understanding what they see and hear. (Mohammadian, Saed, & Shahi, 2018; Ockey, 2007; Gruba, 2006; Ginther, 2002; Huang & Eskey, 1999; Suvorov, 2008; Haghverdi & Vaezi, 2013; Latifi, Tavakoli, & Alipour, 2013). In their study, Dehghani and Jowkar (2012), observed that when learners watch a movie, documentary, or another video, they have the advantage of looking for meaning in the body language and context as they interpret the language they are listening to. The effectiveness of films as a teaching aid in raising the reading comprehension of Iranian EAL pupils in secondary schools in Chabahar, Iran, was also investigated by Mohammadian et al., (2018). Two groups of 15 participants, each with a similar level of reading ability, participated in the study. While one group (the control group) received customary instruction in reading classes, the other group (the experimental group) received technology-enabled reading instruction, which involved the use of suitable videos to aid reading comprehension. When compared the result of pre-test of reading with the post-test, of they found that the use of videos enhanced the students reading comprehension significantly. Similarly, Chen (2012) examined if the use of DVD movies and children's literature as teaching tools in a college EFL class, showing that it made a difference to learning. As specified by the results of the tests of reading comprehension, the experimental group—in which learners watched films and discussed children's stories—outperformed the control group of learners who did not watch movies or discussed children's literature.

Other studies explored the reasons why using media not only makes language learning easier but also more enjoyable, as well as whether and to what extent it improves reading comprehension (Ding & Li, 2022). Mekheimer, (2011) in his study, concluded that audio-visual aids bear good results since on one hand; the videos substitute various kinds of books and orient the learners with the real language use on the other. Moreover, Yang et al., (2010) opined that the use of videos in the classroom facilitates learning reading because the learners find it different from conventional way of teaching language. In addition, when they watch instructional videos, students are exposed to the dynamics of communication through the depiction of authentic settings, accents, postures, and gestures of native speakers.

The above material suggests that we know relatively more about how audio-visual aids make a difference in students' reading comprehension than we know about how these aids impact students' reading rates. From what the author knows no previous study has sought to investigate how audio-visual materials impact the reading comprehension and fluency of Saudi EFL learners. This research, therefore, aims to bridge this gap in the existing knowledge.

3. Methodology

3.1 Research Design

This study employed a quantitative method which following a quasi-experimental design. Four different groups comprising 24–28 students each were formed. Results from the pre- and post-tests evaluated pupils' reading fluency and comprehension. The assessment pre-test was conducted in the first week of the semester and the post-test was conducted in the fourteenth week, at the end of the semester. The researcher then attempted to determine the impact of audio-visual aids on, and the statistical dissimilarities between boys and girls in acquiring reading comprehension and fluency. The two experimental groups were taught for 14 weeks using audio-visual aids, while the

two control groups were taught from the same textbook using traditional teaching methods, without using any audio-visual aids.

3.2 Research Participants

The participants of the study were first-year learners of graduation at the Department of English Language and Translation, Khulais, University of Jeddah. The number of participants was almost equal among the groups; the experimental groups comprised 26 boys and 26 girls, whereas the control groups consisted of 24 boys and 28 girls. The learners gave written consent before the start of the study. Four different instructors were involved in this study – two males and two females. The researcher was not involved in the actual teaching to avoid ethical conflicts.

3.3 Data Collection

This quantitative study was undertaken by four separate instructors helped the researcher with. The data were obtained by administering a pre-test and a post-test to the students. The collected data were derived from a written test and from counting the read words per minute.

3.4 Procedures

This research followed a specific procedure, from planning the study to presenting the paper. It used National Geographic materials as textbook sources for the reading course, which was introduced to students as part of their third semester. The subject matter ranged from a B1 to a B2 level according to the Common European Framework of Reference for Languages. This study was introduced to students at the first meeting. Because the participant group included male, female instructors were assigned to classes. The instructors explained the designed textbook to the students and clarified the steps of the research procedure. The researcher divided the boys and the girls into two separate groups: the control group and the experimental group and once again explained the study and textbook. Students were then assigned a specific text and instructed to read it silently for one minute. The researcher used a digital watch to set the reading time for the students. After one minute, the researcher stopped the students and asked them to count the words they had read to measure their reading speed. The results were carefully recorded. The researcher then administered a pre-test designed by the National Geographic Society to measure the participants’ reading comprehension.

For the next 14 weeks, the instructors taught the students based on the assigned textbook. The control groups were taught the course with no audio or video aids, and with the main focus on the standard method of teaching reading skills. The two experimental groups were taught from the same textbook using supporting audio and video material. The main focus was on using these audio-visual aids to enhance reading skills.

At the end of the semester, in the 14th week, the researcher provided another text and asked the students to read it for a minute and then count the number of words they read to measure their reading speed. The researcher recorded the results carefully. The researcher then administered the post-test, also designed by the National Geographic Society, to measure students’ reading comprehension. The researcher then collected the results and examined the collected data. The reading fluency and comprehension results were shared with the students, and the researcher obtained the students' consent of for using the data only for the purpose of research. The researchers assured them that information such as their names or student ID numbers would not be used.

4. Results

4.1. Male Students

Table 1 illustrates the means and standard deviations for the experimental group of 26 boys, including their scores in reading comprehension before and after receiving lectures with audio-visual aids.

To test the hypothesis, *t*-tests of the paired samples were conducted whether the means before lectures with audio-visual aids ($M = 77.7692$, $SD = 16.22913$) and after the lectures with audio-visual aids ($M = 72.8846$, $SD = 15.30837$) were equal in reading comprehension. Table 2 demonstrates the findings of the paired samples *t*-test. These results reveal that, on average, students performed worse before audio-visual aids were introduced. This improvement was statistically significant [$t(25) = -14.09$, $p = .000 < .01$].

Table 1. Paired sample statistics of reading comprehension for boys students

	<i>N</i>	<i>M</i>	<i>SD</i>
Pre-receiving lecture with audio-visual aids	26	77.7692	16.22913
Post-receiving lecture with audio-visual aids	26	72.8846	15.30837

Table 2. Paired samples *t*-test of reading comprehension for boys

	Paired Differences		95% CI		<i>T</i>	<i>df</i>	<i>sig</i>
	<i>Mean</i>	<i>SD</i>	<i>Upper</i>	<i>Lower</i>			

One of the most basic procedures in quantitative research of applied linguistics is to compare the scores of various groups. *T*-tests answer a fundamental research question “Is there a variation between two data groups?” This helps us to compare the lecture with audio-visual aids to the lecture only reading comprehension scores.

The outcome of the groups' pre-test and post-test were analyzed using independent samples *t*-tests. Table 3 illustrates the score statistics of each group of boys. The results revealed that participants in the lecture only group had a lower score ($M = 62.7083$, $SD = 15.60234$) than those in the audio-visual aids group ($M = 72.8846$, $SD = 15.30837$).

To ascertain whether there are variations in the scores of the students of reading comprehension who received the lecture only and those who received the lecture with audio-visual aids, an independent samples *t*-test was also administered. The results in Table 4 indicate a clear variation between the lecture only and lecture with audio-visual aids [$t(48) = -2.327$, $p = .024 < .05$] groups among boys. The 95% confidence interval (CI) of the variation between means ranged from 1.38297 to 18.96959, indicating a variation between the means of the collected samples. Consequently, the null hypothesis—that there is no dissimilarity between the sample means—is rejected.

Table 3. Group statistics of reading comprehension for boys students

	<i>n</i>	<i>M</i>	<i>SD</i>
Lecture only	24	62.7083	15.60234
Lecture with audio-visual aids	26	72.8846	15.30837

Table 4. Group statistics of reading fluency for boys students

	Leven's test for equality of variance		<i>t</i> -test for equality of means					
	<i>F</i>	<i>Sig</i>	<i>t</i>	<i>df</i>	<i>Sig</i> (2-tailed)	<i>Mean difference</i>	95% <i>CI</i>	
							<i>Lower</i>	<i>Upper</i>
Equal variances assumed	.180	.674	2.327-	48	.024	-10.17628-	-18.96959	-1.38297

To test the efficacy of audio and video materials in reading fluency for boys, an independent sample *t*-test was conducted, as shown in Tables 5 and 6. This test was found to be statistically significant [$t(46) = -6.29$, $p = .000 < .01$]. The 95% CI of the difference between means ranged from 20.97310 to 40.69357, indicating that the reading speed of individuals in the experimental group—who received audio-visual aids ($M = 130.6250$, $SD = 3.82204$)—was much greater than that of students in the control group ($M = 99.7917$, $SD = 3.06392$).

Table 5. Independent samples test of reading comprehension for boys students

	<i>n</i>	<i>M</i>	<i>SD</i>
Lecture only	24	99.7917	3.06392
Lecture with audio-visual aids	24	130.6250	3.82204

Table 6. Independent samples test of reading fluency for boys students

	Leven's test for equality of variance		<i>t</i> -test for equality of means					
	<i>F</i>	<i>Sig</i>	<i>t</i>	<i>df</i>	<i>Sig</i> (2-tailed)	<i>Mean difference</i>	95% <i>CI</i>	
							<i>Lower</i>	<i>Upper</i>
Equal variances assumed	2.131	.151	6.294-	46	.000	30.83333-	40.69357-	20.97310-

4.2 Female students

Girl students' scores in reading comprehension were compared before and after they received lectures with audio and video materials. Table 7 below shows the descriptive statistics of this sample.

Table 7. Paired sample statistics of reading comprehension for female students

	<i>N</i>	<i>M</i>	<i>SD</i>
Pre-exposure to audio-visual aids	26	60.3846	15.80652
Post-exposure to audio-visual aids	26	79.4231	15.31842

On average, girls performed much better after the intervention with audio-visual aids ($M = 79.4231$, $SD = 15.31842$) than before ($M = 60.3846$, $SD = 15.80652$). This improvement in their reading comprehension was statistically significant; see Table 8 [$t(25) = 19.8$, $p = .000 < .01$]. The 95% CI of the difference between means ranged from 17.05 to 21, indicating a variation between the means of the sample.

Table 8. Paired samples test of reading comprehension for girls students

	Paired Differences		95% CI		<i>t</i>	<i>Df</i>	<i>Sig</i>
	<i>Mean</i>	<i>St. deviation</i>	<i>Upper</i>	<i>Lower</i>			
			Pair 1	19.03846			

To compare the scores of reading comprehension of female students with and without audio-visual aids, an independent samples *t*-test was conducted. Tables 9 and 10 manifest the results. There was a notable variation in the scores for lectures with audio-visual aids ($M = 79.4231$, $SD = 15.314$) and without ($M = 68.3929$, $SD = 18.51842$); $t(52) = -2.34$, $p = 0.02$. These results indicate that audio-visual aids do influence the reading comprehension of girl students. Specifically, they reveal that when girls are exposed to audio-visual materials, their reading comprehension and competence increase.

Table 9. Group statistics of reading comprehension for girls students

	<i>N</i>	<i>M</i>	<i>SD</i>
Lecture only	28	68.3929	18.51194
Lecture with audio-visual aids	26	79.4231	15.31842

Table 10. Independent samples *t*-test of reading comprehension

	Leven's test for equality of variance		<i>t</i> -test for equality of means					
	<i>F</i>	<i>Sig</i>	<i>t</i>	<i>Df</i>	<i>Sig (2-tailed)</i>	<i>Mean difference</i>	95% CI	
							<i>Lower</i>	<i>Upper</i>
Equal variances assumed	1.103	.298	-2.375	52	.02	11.03022-	20.34907	-1.71137-

To determine whether there were variations in reading fluency between the girls who received lectures with audio-visual aids, and those who received only lectures, an independent-samples *t*-test was also conducted. Tables 11 and 12 manifest the results. The reading speed was statistically higher ($M = 29$, 95% CI [18, 40], $t(50) = -05.3$, $p = 0.0001$) for audio-visual aids ($M = 130.0769$, $SD = 22.26912$) than without ($M = 101.0769$, $SD = 18.73803$).

Table 11. Group statistics of reading comprehension for girls students

	<i>N</i>	<i>M</i>	<i>SD</i>
Lecture only	26	101.0769	18.73803
Lecture plus video and audio	26	130.0769	22.26912

Table 12. Independent samples test of reading fluency for girls students

	Leven's test for equality of variance		<i>t</i> -test for equality of means					
	<i>F</i>	<i>Sig</i>	<i>t</i>	<i>df</i>	<i>Sig(2-tailed)</i>	<i>Mean difference</i>	95% CI	
							<i>Lower</i>	<i>Upper</i>
Equal variances assumed	.282	.597	-5.375	50	.0001	29.01-	40.46428-	17.53572-

4.3 Gender Differences

This study aimed to ascertain whether a variation exists between boys and girls, regarding reading comprehension and reading fluency. Thus, an independent samples *t*-test was first administered to compare the results of male and female students in reading comprehension. Table 13 displays the means and standard deviations for each group. The mean reading comprehension scores of male and female learners are 72.9167 and 79.423, respectively. Additionally, the standard deviations reveal that the variation in the data (i.e., range of scores) is wider for boys ($SD = 15.8$) than for girls ($SD = 15.3$). The results also reveal that boys had lower reading comprehension scores ($M = 72.9167$, $SD = 15.80566$) than girls ($M = 79.4231$, $SD = 15.31842$). Table 14 demonstrates the results of the independent *t*-test for the two groups, which do not point to a significant difference between boys ($M = 72.9167$, $SD = 15.8$) and girls ($M = 79.4231$, $SD = 15.3$) students [$t(48) = -1.4$, $p = .146 > .05$]. The 95% CI of the difference between means ranged from 2.34601 to 15.35883 and did not indicate any variation between the means of the sample.

Table 13. Group statistics for reading comprehension

	<i>N</i>	<i>M</i>	<i>SD</i>
Boys	24	72.9167	15.80566
Girls	26	79.4231	15.31842

Table 14. Independent samples *t*-test of reading comprehension

	Leven’s test for equality of variance		<i>t</i> -test for equality of means					
	<i>F</i>	<i>Sig</i>	<i>t</i>	<i>df</i>	<i>Sig</i> (2-tailed)	<i>Mean difference</i>	95% <i>CI</i>	
							<i>Lower</i>	<i>Upper</i>
Equal variances assumed	.015	.904	1.478-	48	.146	-6.50641-	15.35883	2.34601

Moreover, an independent *t*-test was administered to investigate whether a variation exists in reading fluency between boys and girls. The results in Tables 15 and 16 indicate insignificant difference between boys (*M* = 128.2308, *SD* = 21.42579) and girls (*M* = 130.0769, *SD* = 22.26912), [*t* (50) = -0.305, *p* = .762 > .05]. The 95% *CI* of the difference between means ranged from 10.32677 to 14.01907 and did not indicate any variation between the means of the sample.

Table 15. Group statistics of reading fluency

	<i>n</i>	<i>M</i>	<i>SD</i>
Boys	26	128.2308	21.42579
Girls	26	130.0769	22.26912

Table 16. Independent samples test of reading fluency

	Leven’s test for equality of variance		<i>t</i> -test for equality of means					
	<i>F</i>	<i>Sig</i>	<i>t</i>	<i>df</i>	<i>Sig</i> (2-tailed)	<i>Mean difference</i>	95% <i>CI</i>	
							<i>Lower</i>	<i>Upper</i>
Equal variances assumed	.023	.881	-.305	50	.762	-1.84615	14.01907	10.32677

To assess whether audio and video materials improved reading performance, each student’s performance was evaluated considering two aspects—reading comprehension and reading fluency—after which the score and speed of reading was calculated.

Boys had higher reading comprehension after receiving lectures with audio and video materials (*M* = 77.8846, *SD* = 15.308) than before (*M* = 72.769, *SD* = 16.22). The improved scores were statistically significant *t* (25) = -14.09, *p* = 0.0001 < 0.01. Moreover, the results reveal an improvement among boys who received audio and video materials, compared to those who did not. The 11-point improvement was statistically notable *t* (48) = -2.327, *p* = 0.024 < 0.05. Concerning reading fluency, boys who received lectures with the audio-visual materials (*M* = 130.6250, *SD* = 3.822) were faster than those who did not receive them (*M* = 99.792, *SD* = 3.064). Furthermore, the improvement of 31 words was highly significant *t* (46) = -6.29, *p* = 0.001 < 0.01, showing that the intervention did improve boys’ reading fluency and comprehension.

Audio and video materials also improved the reading comprehension of girls, as evidenced by their performance before and after receiving the lectures. Their mean after receiving the lectures with audio-visual aids (*M* = 79.4231, *SD* = 15.318) was greater than before (*M* = 60.385, *SD* = 15.807). This 19-point improvement was statistically significant *t* (25) = -19.8, *p* = 0.0001 < 0.01. The results also show an improvement among girls who received lectures with audio and video materials, compared to those who did not (*M* = 79.4231, *SD* = 15.31842) and (*M* = 68.3929, *SD* = 18.51194) respectively. This 11-point improvement was statistically significant *t* (52) = -2.375, *p* = 0.02 < 0.05. Regarding reading fluency, girls who received lectures with audio-visual materials were faster (*M* = 130.01, *SD* = 22.269) than those from control group (*M* = 101.07, *SD* = 18.738). The improvement of 29 words was highly significant *t* (50) = - 5.375, *p* = 0.001 < 0.01, indicating that the audio and video materials helped the girl participants in their reading fluency and reading comprehension abilities.

This study examined the reading comprehension and fluency gaps between male and female students.; the results demonstrated no significant variation between them.

5. Discussion

An independent samples *t*-test was administered to ascertain the full effect of the intervention and address the first research question: “To what extent do the audio and video materials improve students’ reading fluency during the 14-week period?” After 14 weeks, the findings show that, in terms of improvement in reading fluency, the control group was outperformed by the experimental group. Stevens, Walker, and Vaughn (2017) synthesized research from the last decade and found that audio-assisted learning produced conspicuous gains in reading

fluency for students with learning disabilities. Similarly, Friedland, Gilman, Johnson, and Demeke (2017) examined the effect of audiobooks on reading fluency in a sample of grade-3 English learners; their results demonstrated that the experimental group attained better reading fluency after four weeks. The results of the current study are corroborated by the findings of Srinivasan and Murthy (2021) who examined the impact of technology interventions in enhancing EFL learners' linguistic competence in general and reading fluency and comprehension in particular. In their study, they incorporated evidence on the effects of technology-assisted teaching from seven huge Indian states with five thousand government schools, fifteen thousand instructors, and one million learners enrolled in the academic session 2016-17. By applying RCT (Randomized Control Treatment), they evaluated the impact of technology interventions in enhancing EFL learners' reading fluency and comprehension and concluded that even though the individual results vary, 20-40% improvement was exceptional.

The findings regarding the impact of audio-visual materials on reading fluency are relatively limited in the existing literature. Garbaya, Lim, Blazevic, Jamshidifarsani, and Ritchie (2019) conducted a literature review on intervention programs for reading fluency, revealing that fluency in reading is a multifaceted variable that is rarely addressed adequately by most interventions. Most fluency interventions only focus on repeated reading; extensive research using video and audio methods to improve fluency has not been conducted to date (Jamshidifarsani et al., 2019; National Reading Panel, 2000). In this regard, the current study provides valuable insights regarding the benefits of audio-visual aids on reading fluency.

Paired and independent samples *t*-tests were carried out to analyze the full effect of the intervention and address research question 2: "To what extent do the audio and video materials improve students' reading comprehension during the 14-week period?" The paired samples *t*-test results revealed that both male and female students showed statistically significant improvement in reading comprehension after attending lectures with audio-visual aids. The research by Mohammadian et al., (2018) also established same results; they studied the effect of only video aids on reading comprehension of English language learners of Iran. The study found out that visual materials promoted reading comprehension significantly. Chang and Millett (2015) studied the impact of audio-assisted learning on reading comprehension; their experimental group also showed improved reading rates and comprehension following the intervention. Khalili, Zeinolabedini, Poorebrahim, and Sattarpour (2021) investigated the role of audio and visual aids on reading comprehension in a class of general English. Their results show that students obtained superior reading outcomes after the intervention. Overall, past research confirms that an audio-visual intervention can improve reading comprehension in learners, and this seems to apply to various grade levels. These results are in line with the findings of research conducted by Stetter and Hughes (2010). The participants of their research included learners with disabilities and learners facing challenges in reading comprehension. They concluded that technology-aided instruction in the classroom demonstrated an overall positive impact on the learners struggling with reading comprehension. They deemed the use of audio-visual aids in teaching reading to EFL learners facing problems with reading comprehension exceptionally promising. As well, they believed that technology-aided classes brought about significant improvements in learners' reading comprehension, even those with disabilities.

The findings of the reading comprehension independent samples *t*-tests of both boys and girls show that the experimental groups obtained greater reading outcomes than the control groups at the end of the semester-. Past research validates this result. Khalili et al. (2021) conducted an independent samples *t*-test and found that the experimental group receiving audio-visual aid had better reading comprehension than did the control group. Su and Liang (2015) conducted a study on younger children, in which the experimental group was shown animated videos to assist them learn English language. The results reveal the effectiveness of this method in increasing reading comprehension, when compared with the control group. Chang and Millett's (2015) study included a randomized control trial that compared the effects of audio-assisted learning in two groups of students. The trial proved that the audio learning group improved in reading comprehension than the control group did. Overall, regarding improving reading comprehension, audio-visual aids appear to be more effective than no intervention at all.

This study sought to determine the statistical variations between male and female learners during the intervention period with research questions 3 and 4: "Are there any statistical variations between male and female learners in reading fluency?" and "Are there any statistical differences between boys and girls in reading comprehension?" The findings show no major dissimilarities in terms of learning outcomes. This finding has been replicated in past research. The studies by Oda and Abdul-Kadhim (2017) on college students highlighted very ignorable statistical difference between the two genders on three different levels of participants' reading comprehension. A study on reading comprehension, reading techniques, and gender was done in 2015 by Asgarabadi, Rouhi, and Jafarigozar. They discovered that there were no significant differences in reading comprehension between the boy and girl groups because both groups used similar reading strategies. Finally, the research by Limbrick, Madelaine, and Wheldall (2011) also concluded that male and female students' progress scores were similar in oral reading fluency at different points of the school year. Overall, this suggests that reading comprehension and reading fluency are not heavily affected by gender, thereby explaining why gender was not a statistically significant variable during the intervention in the current study.

6. Future Research and Recommendations

Studies on language acquisition and language skill acquisition are extremely important in both academic and non-academic sectors since language is the means through which knowledge is acquired and applied. Studies on reading comprehension that include a variety of sample sizes, groups, genders, creeds, or nationalities have a reputation for being helpful to students all around the world. Therefore, it is impossible to separate or disregard any study that has been done on language skill acquisition. As a result, the findings of the current study, which used a small sample size of Saudi EFL learners, can be used as a standard for future research on populations of a different gender, size, or ethnicity. The study earnestly recommends the studies on reading comprehensions and fluency on gender, mixed gender,

isolated geographical areas and mother tongue basis to have deeper and clearer perceptions on learner's linguistic issues.

The first recommendation is for additional study to support the findings to be made in light of the research findings. Second, the English language teachers should be motivated to apply different digital technology all of the teachers and language teachers in particular. Further efforts to use of the audio and video teaching strategy across the language skills by teachers. The English language instructors should also be kept up to date and educated on new teaching techniques that help them advance their careers. Several formal and informal settings affect the learning of EFL. Thus, the studies affecting both situations are recommended to narrow down the focus and issues of the EFL learners.

Based on the findings of the current study, we advise using cutting edge technology that keeps students engaged throughout the learning process in order to provide the greatest amount of learning and comprehension. Several studies have reported that the reading comprehension levels of the genders differ, hence mixed gender studies are advised to allow students to share gender-specific language and register.

Last but not least, it is important to highlight how use of additional teaching aides (graphics, digital, online available resources) strategies can help students develop other language abilities by stressing language skills like reading, speaking, and listening. The studies emphasizing language skills like reading, speaking, and listening via other techniques should be used to support the development of other language skills of language learners since both productive and receptive language skills are equally important in EFL acquisition and fluency.

7. Research Limitations

To be clear, the study's limitations are as follows: first, it only examines the impacts of audio and video assisted reading; it does not take into account the good and negative effects of other factors, such as speaking practice or listening to popular gossip or talk. Second, since the study's participants are Saudi EFL students, the other students, who are taking education in educational institutes outside the Kingdom of Saudi Arabia, are likely to have different fluency and comprehension levels than Saudi EFL students who are still learning to read. The outcomes can also vary if the study is carried out on Saudi EFL students. Despite the favourable results of the study, there are some significant limitations that should be taken into account when applying the findings. There are intentionally few participants in the study, or a tiny sample size. Therefore, extrapolating the study's findings to a larger sample size or population at large may not produce the expected or compelling results. Finally, the outcome of the study is based on the sample from Department of English Language, the University of Jeddah. Hence, it does not reflect the finding for other private educational institutions or students of different or same genders attending private or public educational institutions. The study has geographical restrictions; therefore, the results may vary depending on whether it is conducted on EFL students from Saudi Arabia or Saudi students graduated abroad.

8. Conclusion

The findings of this research demonstrate that using materials such as audio-visual aids are beneficial in improving boys' and girls' reading comprehension. The results clearly reveal that both boys and girls students improved their reading fluency, although no statistical variations were found between the reading comprehension and fluency of the boys and the girls. Therefore, it can be deduced from the findings of the current study, that the application of audio-visual aids in language learning and language teaching can produce constructive results, as students derive more benefit through improved reading comprehension and fluency. Thus, this study reveals that using audio-visual aids in language classes improves students' learning and reading skills, helping them develop a more independent learning style and become autonomous learners. In addition, it is highly recommended that administrators and officials include more videos and audios in the curriculum, especially for the curriculum designed by the National Geographic Society.

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