

# Investigating the Effects of Pre-reading Activities on Reading Anxiety and Reading Comprehension on EFL learners; A Case of Play VS. Video

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## **Abstract**

Over the past two decades, researchers have been hard at work trying to investigate different approaches that might help with reading anxiety and reading comprehension. In their efforts, researchers have pointed out to the impact of visualizations, from simple pictures to complex animated videos, and their relation with both reading anxiety and reading comprehension. Pre-reading activities also constitute a realm that has always been the subject of probing. Its impact on stimulating background knowledge before the start of reading has been investigated. This study aimed at comparing two pre-reading activities, namely plays and animations, and establish whether each one is more successful than the other with respect to reading anxiety and reading comprehension. 101 Iranian male 12th graders from the city of Tehran, Iran, were put into two groups. The Play Group consisted of 49 and the Animation Group 52 participants. Before the beginning of the study, both groups took a KET reading test and the Foreign Language Reading Anxiety Scale. Throughout the study, each group received 5 plays and 5 animations before the beginning of their textbook and workbook reading activities as their treatments. At the end of the study, KET reading tests and FLRAS were again administered. Data obtained were analyzed through one-way analysis of covariance and multivariate analysis of covariance. Plays and animations were found to have no difference when it comes to reading anxiety. On the other hand, participants of the Play Group showed marginal trend of improvement in their reading comprehension scores.

## **1. Review of literature**

### **Reading Anxiety**

Spielberg (1983) defined anxiety as “the subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the autonomic nervous system” (p.1). Anxiety produces “uneasiness, frustration, self-doubt, insecurity, or apprehension” (Sellers, 2000). Foreign language reading anxiety (FLRA) refers to the feelings of frustration and apprehension one experiences when she/he fails comprehending a text in L2 (Capan and Karaca, 2013). Reading anxiety is seen as a factor that intervenes at some point between the decoding of a text and the actual processing of textual meaning. Sources of

foreign language reading anxiety include unfamiliar scripts, unfamiliar topics and worry about the reading effect (Rajab et al., 2012). Horwitz et al. (1999) found that unfamiliarity with the target culture, lack of sufficient background information and the second language writing systems and scripts are anxiety-provoking issues. In Sellers' 2000 study, anxiety was found to reduce the speed at which readers recognized letters and words. It was also mentioned that anxiety negatively impacted decision-making processes related to reading comprehension like choosing the best reading strategies to use and deciding on the meaning of words.

In 2001, Zbornik explored the physical and cognitive reactions of students who experience reading anxiety. From a physical standpoint, some students have been seen and reported to sweat profusely, their breathing becoming louder and faster, their heart increasingly beating faster and faster. In extreme cases, their voice, hands, knees and entire body would be trembling, sometimes having a headache or stomachache. From a cognitive point of view, an overwhelming sense of dread, low self-esteem, feelings of helplessness, and expectations of public humiliation were commonly witnessed.

Anxious readers typically think about things that are irrelevant to the act of reading: "this passage is too difficult," "I am falling behind others," "I do not have much time," "the teacher is going to be very upset," "my classmates will laugh at me," are but a handful of their thoughts. Students' negative self-judgment on being incompetent in learning languages and lofty personal expectations created copious amounts of anxiety and stress in students (Aydin, 1999).

These ruminations take up mental space and energy to process and handle incoming information. That energy could have been expended on the reading itself. As a result of this poor allocation of mental energy, these fretful readers usually have a difficult time in reading classes (Sellers, 2000).

### **Reading comprehension**

A simplified yet accurate definition of reading comprehension maintains that this is a process through which the reader attempts to concurrently elicit and construct meaning from the written language he/she is interacting with (Brevik et al., 2016). According to Wood et al. (1998), several factors can impair reading comprehension. Some passages have unique and unfamiliar elements that puzzle Readers. Some are in realms which the readers have little information of. This lack of in-advance knowledge stymies comprehension of the text as a whole. In such cases, readers report that they resort to translating sentences one by one but still are not able to construct the message the passage is trying to get across. According to Taglieber (1988), not knowing enough words, not having enough conceptual knowledge and difficulty in using language cues to meaning can interfere negatively with comprehending a passage.

### **Pre reading activities**

Pre-reading activities are those activities that students carry out before reading a text. According to Alemi and Ebadi (2010), pre reading activities, or, based on Tudor (1989) and Ringler and Weber (1984) interpretations "enabling activities," can positively affect reading comprehension. They help concentrate attention, for example, and allow for deeper engagement with the text. Rumelhart and Ortony (1977) provided the rationale for pre-reading activities through schema theory. This theory holds that meaning is achieved when a reader's prior knowledge, aka schemata, works in tandem with the text. Absent that prior knowledge, or its activation, and full comprehension will have been eluded. It is precisely through pre-reading activities that one seeks to either activate or provide from the grass roots that prior knowledge necessary to understanding a text. Akbulut (2008) takes the importance of pre-reading activities even further by asserting that proper activation of schema may help overcome lack of proficiency in L2 to a desirable degree.

According to Hudson (1982), a reader's "interaction with a text can be assisted by implementing pre reading activities. Pre-reading activities not only facilitate understanding (Mayer, 1984), but also make reading a more enjoyable task by reducing the difficulty to meaningfully pair new content with background knowledge (Hansen, 1981). Pre-reading activities aim at certain goals and objectives that, according to Celce-Murcia (1991), include activating prior knowledge of the subject in students, giving enough linguistic assistance that students might draw upon when encountering difficulties in the passage and, last but not least, increasing students' motivation about the text so that they will show enough willingness to read.

Greenall and swan (1986), along with other authors, recommend using strategies and activities that involve role-plays, animations and pictures, among a myriad of other techniques, to help trigger the background knowledge of students. In their 1987 study, Anstey and Freebody found that any pre-reading activity that is intended to activate schema meaningfully impacts reading comprehension. They also extrapolated from their study that students displayed a marked preference for pictorial activities in their pre-reading section compared to verbal activities. Furthermore, Students might be missing important and relevant schemata, Floyd and Carrel (1987) argue, and it is the responsibility of the teacher to close that gap. Also, students must be taught by their teachers how to connect previous knowledge with the new one. Both of these steps are integral in comprehending a text.

## **2. Statement of the problem**

Swaffar and Vlaten (1997) attested that using a multitude of methods and techniques in language teaching deepens the grasp of the language. Foreign language learning literature supports both plays and animations and says that they can affect reading anxiety and reading comprehension. Under the rubric of "visualization," research claims that visual cues can be positive factors influencing learning a new language.

Animations and plays both have been touted as effective methods to influence learning. It is still unclear whether animations or plays will influence anxiety, motivation, confidence, making tasks seems manageable and authentic and other affective factors when compared with each other.

Plays and animations differ in some aspects. For one thing, in order to create an animation, a working knowledge of computer and technology is required. The creator of the animation has to be able to effectively work with software applications. In order to achieve the acceptable level of mastery, many hours must be dedicated to learning the ins and outs of these applications, a task senior educators might not find the easiest. Also, the fact that the status quo favors technology and considers it a panacea to all educational problems makes the situation more stressful and confusing. Some educators may think that their lack of technological knowledge is impeding their progress and they will never be as effective as peers whose mastery of technology, in this case animation software applications, is at an acceptable level.

In a study done by Vande Berg (1993), she recognizes that reading can be anxiety provoking and it should be dealt with extra care when preparing students for the reading task. One common technique, which may not be intended to lower anxiety at first, is using pre-reading activities. This paper seeks to investigate and compare animations and plays with each other in the areas of reading anxiety and reading comprehension.

## **3. Research questions**

This study aims at answering the following questions:

1: Is there a difference between groups treated by play or animation regarding reading anxiety?

2: Is there a difference between groups treated by play or animation regarding reading comprehension?

#### **4. Methodology**

The present study was conducted to compare with each other the effects of animations and plays on reading anxiety and reading comprehension. The following research elements procedure was included in carrying out to obtain the research objectives.

##### *4.1. Design*

This study contains treatments, a pre-test phase and a post-test phase. The schematic of this study is as follows:

Play:                Q P1    T1 T2 T3 T4 T5    Q P2

Animation:        Q P1    T1 T2 T3 T4 T5    Q P2

Q stands for questionnaire. P1 stands for pre-test. P2 stands for post-test. T1 to T5 stand for treatments for each group.

##### *4.2. Participants*

One hundred and one 12th graders were chosen as the participants of this study. All the participants were male and from one high school in the city of Tehran. All participants were Iranian. The participants were put into two groups. “Group Play” consisted of 49 and “Group Animation” 52 participants.

##### *4.3. Data Collection Procedures*

In order to get a more accurate measurement of participants’ reading anxiety, the questionnaire was given to participants and seven days later the KET exam so that the anxiety of KET test would not interfere.

In total, five plays and animations about reading topics that participants were going to read were shown to participants before the reading activities of 12th grade textbook and workbook. Each play consisted of only two actors. One actor was one of the researchers and the other was a 17-year-old 12th grader. In both plays and animations, duration was kept under 4 minutes. Contents of plays and animations corresponded with the level of grammar and vocabulary knowledge of participants. The speed of narration corresponded with the speed of narration in the audio files of the book or slightly slower. Plays and animations never directly addressed the materials in readings and only touched on materials relevant to the them in order to warm up participants by providing them with background information they might have lacked. Before reading activities, participants were shown either a play or animation, according to their classifications. This would be done by uploading a video file in classroom groups. After having watched the file, participants would read the passage in their textbook and answer the questions at the end of each passage.

One week after the last play/ animation had been administered, participants were asked to fill out the same questionnaire about Foreign Language Reading Anxiety. A week after that, the same KET exam in the pre-test phase was administered to participants. The conditions under which that last phase was conducted were the same as the pre-test phase.

##### *4.4. Data Analysis Procedure*

The data analysis in this study consisted of two series of calculations: descriptive statistics and inferential statistics. Descriptive statistics was related to calculating mean, and standard deviation. The inferential statistics was done using one-way Analysis of Covariance. MANCOVA was also used to further explain the results of sections of post-tests.

## 5. Results

### 5.1. Descriptive statistics

The descriptive statistics of reading anxiety pre-test and post-test are depicted in Table 1.

**Table 1 Descriptive Statistics for Reading Anxiety Pre-test and Post-test**

Variable(s)	Groups	Pre-test		Post-test	
		Mean	Sd	Mean	Sd
Reading anxiety	Animation	55.269	8.944	56.000	9.252
	play	54.142	10.122	56.775	8.324

The descriptive statistics of KET reading pre-test and post-test are depicted in Table 2.

**Table 2 Descriptive Statistics for KET Reading Pre-test and Post-test**

Variable(s)	Groups	Pre-test		Post-test	
		Mean	Sd	Mean	Sd
Reading comprehension	animation	28.076	12.396	28.653	12.192
	play	29.102	13.643	32.265	13.112

### 5.2. Research Question 1

Research question 1 was:

“Is there a difference between groups treated by play or animation regarding reading anxiety?”

In order to answer this question, one-way Analysis of Covariance (ANCOVA) was used.

**Table 3 Levene's Test of Equality of Error Variances<sup>a</sup>**

Dependent Variable: readinganxiety2

F	df1	df2	Sig.
.085	1	99	.771

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + group + readinganxiety1  
+ group \* readinganxiety1

As it is displayed in table 3 titled levene's Test of Equality of Error Variances, the significance is .77, which means that the assumption of error variances has been met and the researchers is able to proceed with the rest of analysis without taking a more conservative p-value.

**Table 4 Tests of Between-Subjects Effects**

Dependent Variable: readinganxiety2						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3359.148 <sup>a</sup>	3	1119.716	24.977	.000	.436
Intercept	1518.316	1	1518.316	33.868	.000	.259
group	112.729	1	112.729	2.515	.116	.025
readinganxiety1	3326.599	1	3326.599	74.204	.000	.433
group * readinganxiety1	90.638	1	90.638	2.022	.158	.020
Error	4348.555	97	44.830			
Total	328714.000	101				
Corrected Total	7707.703	100				

a. R Squared = .436 (Adjusted R Squared = .418)

As Table 4 titled Tests of Between-Subject Effects shows, the interaction between group (treatment) and readinganxiety1 (covariate) turns out to be  $F(1, 101) = 2.02$ ,  $p = .15$ ,  $\eta = .02$ , which is not statistically significant, showing there is no significant interaction between the aforementioned variables. Hence, the results can be safely analyzed.

The covariate (readinganxiety1) is significant ( $F(1, 101) = 74.20$ ,  $p = .00$ ,  $\eta = 0.43$ ), meaning the effect of the pretest has been carried over from the beginning of the study up to the end of it.

Next, the treatment effect is to be examined. The results are seemingly significant ( $F(1, 101) = 2.51$ ,  $p = .11$ ). Nevertheless, it needs to be mentioned that since covariate is also significant, the researchers have to examine mean differences.

**Table 5 Pairwise Comparisons**

Dependent Variable: readinganxiety2						
(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig. <sup>a</sup>	95% Confidence Interval for Difference <sup>a</sup>	
					Lower Bound	Upper Bound
play	animation	1.460	1.335	.277	-1.190	4.110
animation	play	-1.460	1.335	.277	-4.110	1.190

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

As readers can see in table 5 titled Pairwise Comparisons, the mean difference is not statistically significant ( $I - J = 1.46$ ,  $p = .27$ ). It is safe to state that the difference between the two treatments (play and animation) has not been significant regarding reading anxiety. Hence, compared to each other, no treatment is supreme.

### 5.3. Research Question 2

Research question 2 was:

“Is there a difference between groups treated by play or animation regarding reading Comprehension?”

In order to answer this question, one-way Analysis of Covariance (ANCOVA) was used.

**Table 6 Levene's Test of Equality of Error Variances<sup>a</sup>**

Dependent Variable: posttest			
F	df1	df2	Sig.
5.739	1	99	.018
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.			
a. Design: Intercept + group + pretest + group * pretest			

As it is displayed in table 6 titled Levene's Test of Equality of Error Variances, the significance value is .018. In this case, the researchers have set a more conservative p-value, which is .01 rather than .05 in order to test the null hypothesis.

**Table 7 Tests of Between-Subjects Effects**

Dependent Variable: posttest						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	10657.499 <sup>a</sup>	3	3552.500	62.575	.000	.659
Intercept	1111.612	1	1111.612	19.580	.000	.168
group	328.087	1	328.087	5.779	.018	.056
pretest	10281.054	1	10281.054	181.095	.000	.651
group * pretest	182.285	1	182.285	3.211	.076	.032
Error	5506.857	97	56.772			
Total	109541.000	101				
Corrected Total	16164.356	100				

a. R Squared = .659 (Adjusted R Squared = .649)

As Table 7 titled Tests of Between-Subject Effects shows, the interaction between group (treatment) and pretest (covariate) turns out to be  $F(1, 101) = 3.21, p = .07, \eta = .03$ , which is not statistically significant, showing there is no significant interaction between the aforementioned variables. Hence, the results can be safely analyzed.

However, the covariate (pretest) seems to be significant ( $F(1, 101) = 181.095, p = .00, \eta = 0.65$ ), meaning the effect of the pretest has been carried over from the beginning of the study up to the end of it.

Next, the treatment effect is to be examined. The results are seemingly significant ( $F(1, 101) = 5.77, p = .01$ ). Nevertheless, it needs to be mentioned that since covariate is also significant, the researchers have to examine mean differences.

**Table 8 Pairwise Comparisons**

Dependent Variable: posttest						
(I) group	(J) group	Mean	Std. Error	Sig. <sup>a</sup>	95% Confidence Interval for Difference <sup>a</sup>	
		Difference (I-J)			Lower Bound	Upper Bound
play	animation	2.810	1.501	.064	-.169	5.790
animation	play	-2.810	1.501	.064	-5.790	.169

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

As readers can readily see in table 8 titled Pairwise Comparison, the mean difference is not statistically significant ( $I - J = 2.8, p = .06$ ). It might be safe to state that the difference between the two treatments (play and animation) has not been significant regarding reading comprehension. However, since the p value (.064) is only one degree beyond customary p value (.05), the researchers might be allowed to say that there is a trend of marginal improvement in the group treated by play.

In order to find out where students are showing improvement in data, component analysis was done using multivariate analysis of covariance to see why we had a trend in favor play. Only item 8 was statistically significant. Part 8 of the test is designed to elicit specific information like date and time and names and numbers and places.

**Table 9 Levene's Test of Equality of Error Variances<sup>a</sup>**

	F	df1	df2	Sig.
SumP1T2	.212	1	99	.646
SumP2T2	3.390	1	99	.069
SumP3T2s1	.003	1	99	.959
SumP3T2s2	4.148	1	99	.044
SumP4T2	.007	1	99	.936
SumP5T2	3.346	1	99	.070
SumP6T2	2.885	1	99	.093
SumP7T2	.652	1	99	.421
SumP8T2	.186	1	99	.667

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + group + pretest + group \* pretest



Levene's test of error variance turns out to be .64, .06, .95, .04, .93, .07, .09, .42, .66 respectively for parts one, two, three (section one), three (section two), four, five, six, seven and eight. So, only the assumption of error variance of section 2 of part 3 has not been met so a more conservative alpha is set in order.

To locate where the difference between play and animation has occurred regarding reading comprehension, Tests of Between-Subjects Effects has been examined. The findings show that part 1 and part 2 are statistically significant:  $F(1,101) = 5.24, p = 0.02, \eta = 0.05$  for part 1 and  $F(1,101) = 10.05, p = 0.00, \eta = 0.09$  for part 2 and  $F(1,101) = 1.79, p = 0.18, \eta = 0.01$  for part 8. Effect sizes of parts 1 and 2 are very small (because they are less than 0.2). however, the effect size for part 8 seems statistically significant.

## **6. Discussion**

### *6.1. On Reading Anxiety*

According to the findings of this study, no significant difference has been found between groups who were treated by either plays or animations as their pre-reading activity regarding reading anxiety. This means that the null hypothesis is accepted.

According to Rajab et al. (2012), among other factors, unfamiliar topics play a major role in reading anxiety. This might help shine some light on why neither plays nor animations differed from each other in the results they produced. Perhaps at the end of the study, after having been familiarized with their reading topics throughout the study by plays and animations, participants still felt uneasy and doubtful about myriads of topics that they might come across later and would have to figure them out on their own without the help of any pre-reading activity. In this manner, neither plays nor animations managed to alleviate the inherent anxiety induced by the sheer number of unfamiliar and new topics.

Data obtained from this study can also be interpreted by looking at Horwitz et al.'s 1999 study. They established that background knowledge is a factor that contributes to reading anxiety. From the results of the current study, it is assumed that participants felt neither plays nor animations differed from each other regarding background information elicited from the plays and animations prior to reading their texts. Plays gave as much background information as animations, according to data, and neither proved better.

### *6.2. On reading comprehension*

The results of data analysis show a trend in favor of play over animation regarding reading comprehension. The researchers wish to insist upon the importance of the word "trend" since the result of ANCOVA turned out .064, which is close to the standard p-value of 0.05. In other words, although the null hypothesis that "neither plays nor animations will differ from each other regarding reading comprehension" is not completely rejected, it cannot be conclusively accepted either.

The result of this study follows the same trajectory as Rose, Dale S., et al.'s study in 2000, where they found a link between drama-based instruction and improved reading comprehension. Hoyt (1992) explained that dramatization of texts by human beings helps comprehension.

Following Hoyt's footsteps, the researchers attribute the difference in results between plays and animations to the element of human presence in plays. Watching two humans interact before reading a text about that interaction, noticing tone variations, body movements and facial expressions sparked participants' thinking and curiosity and over time trained them to relate to texts more deeply compared with animations. Over the course of the study, participants in the play group came to associate a text with real life through watching two humans make interactions about them. These human interactions made written language more believable and relatable, things animations failed to capture as successfully.

The results of this study also corroborate McMaster's 1998 study. There, play was found to help stimulate mental imaging which would also improve in noticing and retrieving specific information. In part 8 of the post-test exam, where participants had to answer specific-information questions, participants of the play group performed better than the animation group. The current study lends its support by showing that students improved compared with their pre-test in the play group.

Accordingly, a number of suggestions for teaching reading comprehension are presented based on the above discussions:

The results of this study indicate a preference, however minimal, in favor of plays over animations, especially in reading comprehension. It might be helpful for teachers to stimulate students' background information, or create that in case it is absent, through dramatic arts and plays.

Plays proved to be effective in making students pay more attention to specific information and details. This has implications for material developers. They can include pre-reading exercises that have a tendency toward stimulating human interaction like role plays. These activities will help students fall in line with the intention and gist of the reading and be able to understand it more deeply. They might also shoot videos of plays and include them in the whole package. They will come in handy if students compared plays created by themselves with the ones already in the package. This can not only be a fun activity to reduce the notorious monotony associated with reading lessons but also a way for them to see how different their play was, take mental notes of the difference and be able to look at the reading in ways other than their own.

Another implication of this study has to do with technology. Unlike animations, where the researchers had to spend many hours learning the software to produce animations with, plays demand less technical complications. The current study featured two actors, but plays could have easily been adapted to accommodate only one actor. This means that in order to test different routes and be creative, one does not have to be an aficionado in technology. Technology is not a panacea to every educational challenge. Simple ideas and materials can do the trick as well, if not better, than those that have been created using the newest computer software. As the results of this study demonstrate, a fancier way of creating materials using technology did not prove to be better compared to basic technological necessities available to anyone.

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