INVESTIGATING THE IMPACT OF INTERACTIVE VIDEOS ON LEARNING THE ORDER OF ENGLISH ADJECTIVES BY PRIMARY SCHOOL ESL LEARNERS OF LAHORE

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ABSTRACT
   This paper aims to examine the erudition of English adjectival orders, both immediately and after a passage of a specific time. It investigates the theory of Connectivism proposed by George Siemen in 2004 through the lens of Connectivism. It is quantitative research which uses a quasi-experimental design consisting of pre-test, post-test and delayed-post tests. The study sample is primary school students (ages 11 to 13 years) of two sections of Grade 5. This sample is based on convenience sampling. Five lesson plans are prepared for each group for an experimental period. Moreover, achievement tests are used to collect the data, and SPSS software is used to analyse the data. The significance of this research inculcates that by pairing adjectives, learners get more meaning to nouns, which raises the essence of their language innovatively. Furthermore, it is essential to understand that semantics impacts the order of adjectives because a slight change in order alters the sense of the sentence and produces a meaningless sound.
Keywords: Adjectival order, Connectivism, Interactive videos, semantics

Introduction
The English language usage increases day by day as it is now a Lingua Franca. Each grammatical skill of English has its own worth similarly; adjectives also play an essential role in learning the English language.
Adjectives are the natural beauty of language as it modifies the noun with various qualities. Every piece of literature also contains many adjectives, which enhances the quality of writing more broadly. Adjectives portray the description of every single thing, due to which a person can consider it as accurate as it is written. Adjectives and their use are also taught in the classroom with the help of textbooks and other materials as it is also a part of our everyday speech (Zerkina & Lukina, 2016). Adjectives fulfil the essence of writing and contain five senses called "Adjectives expressing signs".
In Pakistan, interactive videos are increasing day by day, while teachers use multimedia to enhance the digital knowledge of the students (Shahzad, Nadeem & Nisa, 2021). In Pakistani culture, people are becoming more cautious regarding using technology in classrooms. Projectors, computer labs and other technological learning increases day by day to make the learning institutes more valuable. So, with the help of these projectors and computer labs, students can quickly learn the order of adjectives in the classroom with the help of various computer aids, especially interactive videos. Learning through technology also connects the participant with the worldwide knowledge and able them to make the networks with other countries (Shahzad, Nadeem & Nisa, 2021).

Purpose of the study
This research investigates the impact of interactive videos on both immediate and delayed learning and retrieval of English adjectival order by primary school ESL learners of Lahore.

1.3 Objectives of the study
- To identify the impact of interactive videos on immediate memorization and retrieval of adjectival order by primary ESL learners of Lahore.
- To identify the impact of interactive videos on delayed memorization and retrieval of adjectival order by primary ESL learners of Lahore.

1.4 Significance

This research will help to improve the students' creative writing skills with the use of correct adjective orders. This study will also help in improving the methodology of teaching adjective order. It will also help the students recognize and memorize things in a proper sequence. Furthermore, this study will be helpful for primary ESL teachers who want to incorporate emerging technologies in their language classrooms. Finally, the current research will provide a foundation for the new researchers in Computer Assisted Language Learning (CALL).

1.5 Statement of the Problem

This study was conducted because the primary school ESL teachers tend to use material readily available for teaching parts of speech, including adjectives. However, teachers do not pay much attention to teaching the order of English adjectives, which is important enough that even the placement of one adjective out of its normal position can make the whole sentence sound wrong despite having no grammar mistakes. Thus, teaching about adjectives is not sufficient. Rather teaching of adjectives must be supplemented with the teaching of adjectival order. It is further observed that even if some teachers try to teach English adjectival order, they use conventional methods like lectures to teach it, making it more of a drilling process for the students rather than an actual acquisition of the phenomenon.

1.6 Research Questions

- What is the impact of interactive videos on immediate memorization and retrieval of adjectival order by primary ESL learners of Lahore?
- What is the impact of interactive videos on delayed memorization and retrieval of adjectival order by primary ESL learners of Lahore?

Literature Review

2.1 Interactive Videos

Interactive videos have emerged as a vigorous and effective tool for enhancing the learning experience within the classroom setting (Kazanidis, Palaigeorgious, Papadopoulou, & Tisinakos, 2018). According to Seok (2008), virtual learning is a new form of pedagogy in the 21st century; the word e-learning has begun to be used in the 21st century. E-teachers are subject matter experts, facilitators of interaction, and instructional designers for online learning. Electronic learning, or e-learning, has emerged as a new trend in education and is seen as the most pertinent educational approach available today, particularly in light of the COVID-19 pandemic, which has prompted recommendations for social distancing and avoiding crowds as national pandemic preventive measures (Mardiah, 2020). He found that e-learning appears to be the sole platform for the teaching-learning process. However, it cannot take the role of in-person interactions in traditional classroom settings (Mardiah, 2020). Zinta and Zulfitri (2022), taught that videos are a great way to demonstrate appropriate behavior or appearance, particularly in social interactions. As a result of its simplicity of usage for both teachers and students, videos have been shown to aid students in learning English vocabulary by helping them to memorise the vocabulary. They have also been shown to boost students' motivation and engagement in the learning process (Haroon, Abid & Sarfraz, 2024). Videos can be used as learning resources at home since they are useful for improving word recall. Students who are bored with the traditional classroom instruction approach can also benefit from this experience. The student's proficiency in English, particularly in vocabulary, also improved (Zinta & Zulfitri, 2022).

2.2 Adjectives

Adjectives are the modifiers of nouns and fill the beauty in the language (Sinta & Zulfitri, 2022). *Adjectives* play a significant role in speech in Indonesia since they are typically used to restrict pronouns and broad nouns (Zinta & Zulfitri, 2022). There are two main positions of adjectives in sentences, i.e. prenominal (descriptive) and postnominal (contrastive). The

forms of adjectives that children encounter more frequently are (descriptive and prenominal), and those that are theoretically helpful for language acquisition are (contrastive and postnominal) (Davies, 2020).

Jitpranee (2017) researched twenty-five widely read scientific publications and provided information on the use of adjectives in a sentence. Jitpranee (2017) did a word-by-word analysis of every sentence in the articles was the process. After grouping the various categories, the researcher examined the purposes of each phrase. He discussed the ten types of adjectives: proper, numeral, possessive, emphasizing, relative, quantitative, demonstrative, descriptive, distributive, and exclamatory. He also explained that the morphological, syntactical, and semantical functions of adjectives modify a noun and play an essential role in technical writing (Jitpranee, 2017). According to his observation, the frequently applicable adjective is "descriptive". In contrast, the most diminutive adjective is "relative" because it comes between a sentence to modify a noun, such as "Give me what amount you have" (Jitpranee, 2017).

2.3 Learning the Order of English Adjectives

Schwenk and Danks (1974) observed which sequence a student should use: "a big black car" or "a big black car". This observation was raised with time and then evaluated through different experiments. The order of English adjectives contains a specific rule or set to inculcate in proper order (Schwenk & Danks, 1974). They compared the children and adults to observe which age group picked the adjective orders more accurately than others. They noticed that adults use adjective orders more precisely than children (Schwenk & Danks, 1974). There are two main types of adjectives, including size and colour, but it increased with their use and evaluation (Schwenk & Danks, 1974). They also observed that the descriptive adjective is more stressful than others, and users can understand the sentence by knowing the first adjective only because of its descriptive property (Schwenk & Danks, 1974). According to their study, fourth-grade students preferred inverted adjective order much less than first grade, and they did not respond differently under varied communication conditions. They liked it about 12 per cent of the time in every situation. Students in the eighth grade exhibited the least preference for inverted adjective order, but they seemed to favour it the most in contexts connected to colour and the least in settings related to either or size (Schwenk & Danks, 1974).

Syntactic errors are one of the major errors found in the writing of the Pakistani ESL learners' failure to produce fairly comprehensive piece of writing (Hafsa, Ahmad & Haroon, 2020). Yet there is limited research is available on the impact of interactive videos on learning English adjectival order in computer-assisted language learning. There is insufficient work available in the already existing body of knowledge which assesses the effects of incorporating interactive videos in teaching English adjectival orders on the delayed post-test of both controlled and experimental groups.

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2.4 Theoretical Framework

George Siemen introduced the learning theory of "Connectivism" in 2004. He explained the role of technology in learning classrooms. Technology plays a vital role in increasing knowledge day by day. He also compared traditional learning when there was no technology with modern learning, which cannot stand without technology. Siemen also quoted the theory of behaviourism, constructivism and cognition, which stated the fundamental phenomenon of

learning, that a child could learn through his social environment and habit formation. He inculcates his theory of connectivism with such theories and observes that technology connects people everywhere around the world where they can get the opportunity to share their knowledge. There are eight principles of his theory which are given below.

- Knowledge is a variety of thoughts.
- Learning is a name of information availing from different networks
- Learning can be acquired from non-human resources
- Connectivism build awareness to know more about the current information
- Theory of connectivism nurture the learners to continue their learning
- It connects the people with different innovative ideas
- All learning activities could base on authentic knowledge
- Decision making is also a source of learning which should be based on reality.

The use of technology builds new information every single day. Learners can enhance their knowledge with the connection of networks. Connection with technology also raises the awareness of decision making through which a person can differentiate the right and wrong information. Technology plays a vital role in acquiring advanced and authentic information in a short time. It also helps the learners to continue their learning for a long time inside or outside the classroom. Furthermore, connectivism prepares a student to lead the growing environment with his digital knowledge.

Stephen Down also contributed to the theory of "Connectivism". He claimed that connectivism is different from other theories. Connectivism is not only a source of information, but it also able the person to increase more knowledge. He also wrote the article "New Technology supporting Informal learning" in 2010, where he explained the role of self-learning with the help of technology. Down also commented that connectivism is an ordered based learning in which two entities belong to each other if one is giving a concept, then the other is getting results. Down also lounged his recent article in 2022 in which he stated that connectivism is an effective way of pedagogy which can fulfil the future needs of the students.

The theory of "Connectivism" is applied in this research as technology is now a part of everyday learning. There are a lot of computer aid resources which can be used to improve the children's learning skills like games, virtual activities, online worksheets, and short movies. Similarly, interactive videos are a great source of learning to build innovative skills among the students. Learners can get more knowledge by engaging them with technological learning. However, the order of adjectives can also be learnt through interactive videos. There are a lot of interactive videos which contain activities, pop up quizzes and worksheets on adjectival ordering videos and connect the learners with their self-knowledge inside and outside the classroom. This paper also fulfils the requirements of the computer-based learning because interactive videos engage the students to learn the correct order of adjectives due to their visual and pictorial properties.

Research Methodology
3.1 Data Collection
Data of this research has been collected in an authentic setting that will describe the nature, design, tool, and sample of this research and make this paper more authentic.
3.1.1 Sample and Design
This research is quantitative and has a quasi-experimental design consisting of pre, post and delayed-post tests. This experiment was carried out over eight weeks. This research was delimited to Lahore only due to limited time and resources.

The population of this research consisted of secondary school ESL learners. In contrast, the study sample was secondary school students (age ranging between 11 to 13 years) of two different sections of the 5th class at 'American Lycetuff School'. This sample was chosen based on convenient sampling. There were 20 participants, of which 6 were boys, and 14 were girls. All the participants were selected from grade 5 and were divided into two groups. Ten participants were selected as the controlled group in which 3 were boys and 7 were girls, where the treatment of interactive videos was not administered. In contrast, the other ten were selected as the experimental group with the same strength, 3 were boys, and 7 were girls, where interactive videos were incorporated while teaching the order of English adjectives. Achievement tests were used as a tool to collect data. Five lesson plans were prepared for each group for the experiment period. Firstly, pre-tests were conducted from both controlled and experimental groups separately by keeping the Cambridge dictionary order of adjectives in view. Later on, a total 10 number of different adjective orders were taught to the experimental group till the end of the lectures.

The adjectival orders were taught to both controlled and experimental group in the same working weeks in alternative time slots. Post-tests were separately conducted from both experimental and controlled groups and separately analyzed to determine the impact of using interactive videos on learning English adjectival order. A comparison of the experimental and the controlled group was made to ascertain that the impact on the experimental group is due to the intervention of the interactive videos and not because of the teaching of those orders itself. After eight working weeks, a delayed post-test was conducted for both controlled and experimental groups to assess the difference between the delayed retention of the English adjectival order of both controlled and experimental groups.

'SPSS software' was used to analyse the collected data. Both descriptive and inferential statistics were used for data analysis. In descriptive statistics, mean, median, mode, and percentages were analyzed, whereas, in inferential statistics, paired *t*-test was used for analysis. Similar quasi-experimental pretest-posttest design has been used by Naeem, Ahmad and Haroon (2023) to explore the impact of online games on learning of single and double prepositions in their study.

3.1.2 Procedure

First, Pre-tests were taken from both groups at the general school timings. Then the good five days of lectures were conducted for both groups, and each lecture contained half an hour., On the first day of teaching, the interactive videos have shown to the participants of the experimental group in the school's computer lab. A total of 5 computers were used in which 2 participants sat in a pair. The research assistant also guided them and asked them to solve the pop-up quiz. After watching the interactive video, they solved the pop-up questions on the screen while they also took great interest in solving the instant questions. After the class, on the same day, the controlled group was taught traditionally with the help of whiteboards in which they came to know about ten different orders of adjectives. There was also a discussion at the end of the lecture, which solved the participants' confusion.

Similarly, the other four lectures were conducted with the same phenomenon, but each day there was a different video for the experimental group. After the completion of these five lectures post-test was conducted on day 6 of the experiment. Tests were the same for both the controlled and experimental groups. Post Tests took much time because students solved the quiz by retrieving the orders. After the post-test, there was a gap of 8 regular weeks. After eight weeks, the delayed-post test was conducted for both the groups to assess the impact of interactive videos on the memorization of English adjectival order.

3.2 Ethical Consideration

This experiment maintained the anonymity of the school. The allowance letters were allotted from both researchers and experimental institutes. Computer labs of the school were used under supervision and only for interactive videos on adjectival order. Students were not pressured to solve the questions; all the students solved them voluntarily. Moreover, there are no disclosures of students' names which could violate their personal space.

3.3 Summary

This chapter discussed the framework of the research, i.e. "The theory of Connectivism", which tells about the use of technology in the classrooms. In a nutshell, this chapter covered the perspective of past studies and gave new ideas for the current and future studies. It is all about research methodology and the data of this research which has been collected in a real scenario to make this research more precise. This chapter discusses all the data collection components, including sample, participants, design, and procedure. Ethical consideration has also been portrayed to make this paper free from ethical violations and flaws.

Data Analysis

Three different hypotheses will be under discussion for the analysis of the selected data, and these hypotheses will be tested using paired t-tests. At the same time, their signified *p* values will decide whether the null hypothesis will be rejected or accepted.

4.1 Hypotheses

Null hypotheses of the research are mentioned below

H_o **(1):** There is no significant difference between both the pre and post-test of the experimental group

H_o **(2):** There is no significant difference between the means of post-tests of both controlled and experimental group

H_o **(3):** There is no significant difference between the means of delayed post-tests of both experimental and controlled group

4.2 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Pre-test Experimental Group	10	16.00	23.00	18.8000	2.14994	4.622
Post-test Experimental group	10	24.00	28.00	26.2000	1.47573	2.178
Post-test Controlled Group	10	21.00	26.00	23.3000	1.76698	3.122
Delayed Post-test Experimental Group	10	23.00	29.00	26.5000	1.71594	2.944
Delayed Post-test Controlled Group	10	19.00	24.00	22.3000	1.76698	3.122
Valid N (listwise)	10					

The pre-test of the experimental group contains N=10, in which maximum scores are 23, and minimum scores are 16, while the mean scores of pre-tests of the experimental group are 18.80. In contrast, the Standard Deviation is 2.14 with a variance of 4.62. On the other hand, the Post-test of the experimental group contains N=10, in which maximum scores are 28, and minimum scores are 24, while the mean scores of the experimental group's post-tests are 26.20. In contrast, the standard deviation is 1.47, with a variance of 4.62.

Post-test of the controlled group contains N=10, in which maximum scores are 26 and minimum scores are 21, while the mean scores of post-tests of the controlled group are 23.30, whereas the standard deviation is 1.76 with a variance of 3.12.

The delayed post-test of the experimental group contains N=10, in which maximum scores are 29, and minimum scores are 23, while the mean scores of delayed post-tests of the experimental group are 26.50. In contrast, the Standard Deviation is 1.71 with a variance of 2.94. On the other hand, the Delayed post-test of the controlled group contains N=10, in which maximum scores are 24, and minimum scores are 19, while the mean scores of delayed post-tests of the controlled group are 22.30. In contrast, the standard deviation is 1.76, with a variance of 3.12.

4.3 Inferential Statistics (Paired t-test)

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pretest Experimental Group - Posttest Experimental group	-7.40000	3.16930	1.00222	-9.66718	-5.13282	-7.384	9	.000
Pair 1	Posttest Experimental Group - Posttest Controlled group	-2.90000	1.37032	.43333	-3.88027	-1.91973	-6.692	9	.000

Both pre and post-test of the experimental group contain a mean value of -7.40000 while the value of Std. the deviation is 3.169 and Std. Error mean is 1.0022. Overall, 95% confidence interval of the difference contain the lower value = -9.667 while the upper value = -5.132. Its t scores are -7.384, and df scores are 9, whereas the Sig. (2-tailed) value is =.000. Based on this highly significant value, the null hypothesis is rejected.

Post-test of both the controlled and experimental group contains a mean value=-2.90000 while the value of Std. the deviation is 1.370 and Std. Means is .4333. Overall, 95% confidence interval of the difference contains the lower value = -3.880 while the upper value = -1.919. Its t scores are -6.692 and df scores are 9, whereas the Sig. (2-tailed) value is =.000. Based on this highly significant value, the null hypothesis is rejected.

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Delayed Posttest Experimental Group - Delayed Posttest Controlled Group	4.20000	2.82056	.89194	2.18229	6.21771	4.709	9	.001

Delayed post-test of both controlled and experimental group contains mean value=4.20000 while the value of Std. the deviation is 2.820 and Std. The mean is .891. Overall, the 95% confidence interval of the difference contains the lower value =2.182 while the upper value =6.217. Its t scores are 4.709 and df scores are 9, whereas the Sig. (2-tailed) value is =.001. Based on this highly significant value, the null hypothesis is rejected.

4.4 Results

After analysing all the data of this research through SPSS software, the results of all the tested values have been discussed below. In the descriptive statistics table, all the tests are placed separately to know about the p-values of each test. A total of three tests were taken from both the controlled and experimental groups, and each time, there were 10 participants. After getting the mean values from the minimum and the maximum scores of the participants, each contains their Std. Deviation values and variances.

After descriptive statistics, there is an inferential statistic in which paired t-tests were examined. Based on 1st hypothesis, the significant value of the Pre-test experimental group and Post-test experimental group is less than 0.05. This experiment rejected the null hypothesis and accepted the alternative hypothesis. After observing this significant difference, the result claims that interactive videos are a great source of learning the order of English adjectives. Based on the 2nd hypothesis, the p-value of the second pair between the post-test Experimental group and the post-test Controlled group is also less than the value of 0.05. Due to this significant value null hypothesis is rejected, and the alternative hypothesis is accepted. It is observed that there is a statistical difference between the p-values of both tests, which upbringing the use of interactive videos in the classroom. The 3rd hypothesis occurred between the Delayed Post-test experimental group and the Delayed Post-test controlled group. Their significance values have been observed as less than 0.05, due to which it rejected the null hypothesis and accepted the alternative hypothesis. The result of this hypothesis also portrayed that long-term learning would be better after using the interactive videos in the classroom, which not only helps the students for a short time but will be beneficial for them for an extended period. Overall, results showed that the orders of adjectives learnt better after using these pop-up questioning videos compared to traditional classroom learning.

4.5 Discussion

After extracting the results from the analysed data, it can be stated that teaching the order of English adjectives through interactive videos make the learning of it easier for the students, it is also beneficial for the students and help them to memorize the implicit patterns of adjectival order properly after visual representation and engaging questions. This research substantiates the claim of Haagsman, Scager, Boonstra & Koster (2020), who also stated that these pop-up videos are an indirect source of learning that prepares students before the exam and help them to understand the concept thoroughly. They also agreed that interactive videos also help students memorize things. Interactive videos not only enhance the cognitive skills but also increase the learners' contextual skills (Desai & Kulkarni, 2022). Desai & Kulkarni (2022) also observed that students who learned from interactive videos are more active and involved than those who learned from demonstrative videos. They also inculcate that students could not skip or jump the video because these videos fragmented into chunks and provide few questioners after 2 to 3 minutes which also involve the students giving the feedback after each response (Desai & Kulkarni, 2022). Similarly, this paper also focuses on using these interactive videos, which proved to be a great source of learning the orders of adjectives. Davidse & Breban (2019) also stated that the learning of adjectival order is considered the syntactical analysis because with the correct use of adjectival order, one can maintain the structure of the whole sentence, and for this, it is necessary to know about the rules. As adjectives modify a noun, they are sequenced according to the qualities of the noun, which also deals with the semantic property of the sentence (Pezzelle & Fernandez, 2019). Furthermore, this research is also verified by the claim of Pezzelle & Fernandez (2019), who focused on the sequence of size, colour and shape as these are the most useable adjectives in a single sentence. He depicted that students are mostly confused about the sequence of the size and shape of an object. This technique was also used in this research while designing the achievement tests so that students can be aware by the proper use of these specific adjectival orders (Pezzelle & Fernandez, 2019).

Few researchers observed the effects of the interactive videos while used in the classroom as a learning resource as Wachtler, Hubmann, Zohrer & Ebner (2016) observed that there are few interactive videos which contain wrong answers while using the pop-up question due to the lack of the knowledge of the maker of the interactive videos that's why interactive videos should be reviewed before using them in the classroom otherwise it will affect the learning of the students (Wachtler, Hubmann, Zohrer & Ebner, 2016). Moreover, Mathew (2022) also used the Cambridge dictionary for adjectival order. He also claimed that according to the Cambridge dictionary, the order is started with the opinion then size, quality, shape, age, colour, origin, material, type and purpose but among these, there is no option of quantity or numbers which can cause confusions with the quantity because there are a lot of other sequences which may start with the that's why the order of adjectives should be selected which contain numbers and quantity too (Mathew, 2022).

To conclude, we can say that this paper substantiates the claims of many researchers who say that teaching of English adjectival order is facilitated with the help of interactive videos. However, according a few other researchers (mentioned above) the impact of interactive videos on the order of adjectives is not very significant.

Conclusion

This chapter concludes the study by defining the significance of the study. It also describes the limitation of the study and suggests further options of research.

5.1 Key Findings

Based on this research, it is concluded that interactive videos are not only beneficial for teaching the adjectives but also for the adjectival orders. Many researchers have worked on the significance of interactive videos in learning English adjectives. However, this paper talks

about the significance of the interactive videos in learning the order of English adjectives. For this research, three types of tests were conducted: pre-test, post-test, and delayed post-test from both controlled and experimental groups. Paired t-tests were implicated to find the significance values of both groups. At the same time, the results of all the hypotheses rejected the null hypothesis. They accepted the alternative hypothesis, which shows that through interactive videos the order of English adjectives can be learned more effectively.

If we introduced the adjectival orders in our classrooms, it would be more beneficial for the students. Inappropriate use of adjectival orders collapses the whole sentence, such as "There are three fluffy black cats", and if we change the order of the adjectives like "There are fluffy black three cats", which sounds weird though it is grammatically proper. That is why it is essential to understand the proper order of adjectives discussed in the above chapters. In a nutshell, those interactive videos which contain pop-up questions or quizzes can measure the learning and understanding of the students.

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