

Animation Use and Fifth-Grade Students' English Skills Performance

Abdullah Issa Subh

Department of Mechanical Engineering, College of Engineering Shirqat, University of Tikrit

General Background: English language instruction has evolved substantially from the grammar-focused Latin-based methods of the 1700s to contemporary multimedia approaches. **Specific Background:** Integrating animation into English as a Foreign Language (EFL) classrooms is a promising strategy, yet its direct impact on students' four language skills remains underexplored. **Knowledge Gap:** Despite growing interest in multimedia-enhanced learning, empirical evidence on animation's effectiveness in improving all four English skills at the preparatory level is limited. **Aim:** This study investigates the influence of animation on fifth-preparatory students' performance across listening, speaking, reading, and writing in Al Noor preparatory private school. **Results:** Using an experimental design with 61 students from comparable socio-economic backgrounds, findings reveal no significant disparities between the experimental (animation-based) and control (traditional) groups in the four skills, although t-test results indicate a substantial positive impact of animation on engagement and overall performance. **Novelty:** This research provides one of the first systematic evaluations of animation's role in a holistic EFL skill set within a preparatory school context. **Implications:** The study highlights animation as a valuable tool to enhance motivation, reduce teacher workload, and encourage broader integration of multimedia in English instruction, paving the way for future research on technology-driven language learning.

Highlights:

- Animation enhances motivation and engagement in EFL classrooms.
- No significant difference found between animation and traditional methods.
- Supports future integration of multimedia in English instruction.

Keywords: Animation, English Language Skills, EFL, Multimedia Learning, Student Performance

Introduction

A. Preface

English is now more popular worldwide. Universities and other educational institutions are utilizing it as a language for learning and studying science. Additionally, English language is used in professionals, international business, and politics. It is also the language of ordinary communication in the modern world. For example, it's used for worldwide communication. Furthermore, it is the popular language in science, technology, travelling, and tourism. English's important role has greatly helped the drive to teach English as a foreign language. Instruction techniques have changed in reaction to learners' demands and curricula changes. Teachers and instructors in applied linguistics, TESOL and TEFL have been seeking acceptable techniques and strategies. The Grammar Translation method was employed from 1890 to 1950. It was based on rules. The mother tongue served as the teaching medium, and vocabulary was acquired through translation. In response to the Grammar Translation method, a new approach known as the "Direct Method" was developed in the 19th century and was promoted in the US by Goun and Berlitz. The two skills listening and speaking have been the crucial abilities in this approach, and English was used as the teaching language [1]

The foundation of the Communicative Approach is the notion that successful language acquisition requires the learner to use the language in authentic and real-world contexts. A language's social and cultural background is taken into consideration when learning it according to the Communicative Approach. Furthermore, meaning is prioritized over structure, while accuracy and fluency are also crucial. Teacher serves just as a facilitator and the course material is oriented on the requirements of the students. Producing genuine and meaningful conversation at all levels is a hallmark of classroom activities led by the Communicative Approach. They foster interpersonal engagement and improve communication abilities. Activities are task-based and grounded in real-world communication, where language is employed for a specific purpose. The Communicative Approach places a strong emphasis on the learner's role as the focal point of the learning process [1].

B. Statement of the Problem

Despite learning English since the first grade, Iraqi students struggle with it. Given that students are unique individuals with varying personalities, preferences, and styles, it is argued that acquiring knowledge is an incredibly complicated task. It has been observed that kids graduate from high school with just a limited level of language ability, despite the intense efforts teachers make to help them. Parents and teachers frequently lament the poor competency of their children. This may be due to a number of factors:

1. The modes of learning.
2. Student strategies.
3. The curriculum's effect.
4. Techniques for teaching English.

C. Research Questions

The following questions are intended to be discussed in this research:

1. How does using text and picture animation affect students' performance and achievement?
2. What impact do students' levels have on students' performance?
3. Do the students' performance in the four skills and their overall ability in each group (control vs. experimental) differ significantly?
4. Do students at the same level in the two groups perform significantly differently from one another?
5. Do the two groups' performances on the four skills correlate with one another?

D. Significance of the Study

1. Supporting the communicative technique in studying English language and seeking essential and efficient approaches.
2. Illustrating how technology affects learning English as a second language.
3. Presenting novel teaching strategies and for two textbook units covering two distinct subjects and enhancing these units with extra exercises.
4. Creating two animation-based lesson plans could help the authorities of education and learning achieve its overarching objective of enhancing the Iraqi educational system's use of computers and other technology.
5. Giving educators fresh resources for teaching the skills through animation.

E. Assumptions

The following presumptions form the basis of the study: 1. The groups and student count are suitable for the study. 2. To illustrate the distinctions when considering these two philosophies employed in the research. 3. The sample's total ability is suitable to demonstrate the impact of using animation in instruction. 4. The students have provided their best responses to the tests.

F. Definition of Terms

Animation is the quick presentation of a series of pictures to give the impression that they are moving. It can be produced and shown in a variety of ways and is a motion-related optical illusion caused by the persistence of sight phenomena. The most popular way to display animation is as a video program or movie [2].

CAPT: Computer-Assisted Pronunciation Teaching. (CAI) Computer - assisted Instruction is an engaging teaching technique which utilizes a laptop to display lesson content, follow up student progress, and choose extra lesson content based on each learner's needs [3].

Information and Communications Technology (ICT).

General ability: The mean of the students' English scores over the previous three years (second, third, and fourth grades).

Learning Styles: The ways people process and arrange information or react to stimuli in their environment are referred to as their learning styles [4].

Literature Review

A. Background to English Language Teaching Methods

During the 20th century, English language instruction has evolved. This shift has been used in language classes all across the world for millennia in a variety of forms. The Grammar Translation Method was the first strategy to be applied at that time. Greek and Latin were taught using this method in the past. The target language is rarely used in class; instead, the students' mother tongue is used. Grammar explanations are always given, and vocabulary is taught in discrete word lists. The rules for assembling words are provided by grammar teaching, which frequently concentrates on word form and pronunciation.

Charles Curran created a novel educational approach known as "Counseling-Learning" in the early 1970s. Community Language acquisition is the term for the application of the Counseling-Learning educational model to language acquisition. In order to address and balance the sentiments, intelligence, interrelated connections, defensive responses, and wishes to study, it aims to inspire educators to view their pupils as "whole" individuals. The teacher, acting as a counselor, usually sits outside the circle in which the students are seated. They build trusting relationships with the other pupils by communicating in their own tongue.

The teacher uses the target language to translate what the student says after they have finished speaking in their native tongue. Following an attempt to mimic the teacher's English, the students can reply by following the same procedures. The Communicative Approach makes significant contributions in developing communicative competence. It emerged as a result of the constant demand for communication. Along with grammar and linguistics proficiency, the educational emphasis is on all aspects of communication ability. It is crucial to utilize language effectively and purposefully. Furthermore, accuracy and fluency are complimentary concepts that support communication strategies and the use of the language in situations where practice is not available [5]

B. The Historical Review of Computer Assisted Language Learning

This learning technique (CALL) uses a computer in order to help present, reinforce, and evaluate content that needs to be learnt. The inception of CALL was first used in 1960s. It was limited to academic institutions up to the end of 1970s, when great frame computers were created for computer applications [5]. The creation of (PC) personal computer at the end of 1970s led to appearance of CALL programs and their publications. Originating in the United States, Computer Assisted Language Instruction (CALI) was widely used until the early 1980s [6].

C. The Background of Animation

To animate' literally is 'to provide life to'. Animating is defined as "moving something that cannot move". It can be produced and shown in a variety of ways and is a motion-related optical illusion caused by the persistence of sight phenomena. Animation is most frequently presented as a movie or video program. The amount of information that may be conveyed is increased via animation. The human visual system is an advanced information processor, thus the pictures may communicate a lot of information [7]. Simple sketches were first captured on camera one at a time in the early days of animation. The history of animation begins in the 1880s, when animators were able to produce higher-quality work more easily due to ongoing technological advancements. Historians point to the successful cooperation of its authors, animators, technicians, painters, and composers as a main factor in the success of the Warner Brothers cartoons from the 1930s up to 1950s, which generated several famous painted cartoons at that century. The majority of animated movies from the 20th century were created via conventional animation methods. Conventional animated movies are pictures of drawings that were originally created on paper. Each drawing is slightly different from the one before it in order to provide the impression of movement. On the side of line drawings, animators' designs are photocopied onto cells, which are sheets of clear acetate that have been coloured. A camera takes individual pictures of the finished character cells on motion picture film against a painted background. These days, backdrops and animators' designs are either drawn straight into a computer system or scanned into one [8].

D. Studies on Reading Skill and Vocabulary

Numerous researches have suggested is beneficial role of multimedia in reading and, by extension, for EFL [9] demonstrated the benefits of employing multimedia to teach reading. Other studies found no discernible influence. [9] Conducted an additional research which demonstrated the efficacy of multimedia in reading instruction. They examined the effects of various computer-created images (animated in contrast to static) and advanced organizers (question contrasted to descriptive) in improving retention and comprehension in English as (EFL) [10].

E. Studies on Listening

Researchers have suggested that combining processing visuals with a listening task and multimedia may have an impact on students' auditory comprehension. Both auditory and visual information can help learners create a mental image of the text's semantic meaning. Listening comprehension evolution in multimedia computer-based environment was examined. The research examined how well students performed in listening comprehension and language memory tests when utilizing audio, video, and multimedia. Europeans, French, German, or Spanish undergraduates enrolled in the University of Wolverhampton's business and languages program were the subjects. Every participant might be classified as an advanced English learner. Task performance results indicated that

employing multimedia was more successful than combining audio or video with pen and paper for listening comprehension and memory [11].

F. Studies on Pronunciation and Speaking

Speaking is the clue to communication, just as listening is the clue to speaking. It is a collaborative operation of producing meaning which includes both information production and reception. In order to complete this process, students must not only be able to generate certain language skills, such grammar and vocabulary, but also be able to pronounce words correctly, and this is the starting point to learn speaking. By combining sound, animation, and images, students' speaking and pronunciation skills are improved. Communication will be improved both within and outside of the classroom [12].

The impacts of the five computer processes—repeating, captioning, language translation, recognizing speech and glossary —on developing communicative competence were examined. Thirty Chinese adults studying English as a Second Language in an English instruction facility in Shanghai, made up the samples. There were 19 female participants and 11 male ones. The trainers were between the ages of sixteen and fifty-six. The multimedia English learning courseware has to be studied independently by the participants. The study's findings indicated that the L1 translation function might have a detrimental impact on how well their listening skills develop. Furthermore, the participants' learning outcome was not significantly impacted by their use of the other four computer functions [13].

G. Studies on Writing Skill

Thirty-seven tenth graders made up the study's sample. The experimental group was instructed to produce compositions using a computer, whereas the control group wrote compositions in the conventional manner. According to the study's findings, pupils' writing performance appeared to be significantly impacted by utilizing computers as writing tools [14]. The impact of computer-assisted second language composition instruction on writing abilities of 10th class pupils at Rawdat Al-Ma'aref College and School in Amman [15]. Computer Language Instruction Test's (CLIT) oral English language proficiency exam served as the study's measurement instrument. The findings showed that students' spoken language skills were much enhanced by using a computer lab [16]. The findings contradicted those of [17] who examined the impact of using computer laboratory on verbal fluency. Test-takers included 54 female and 72 male students in China, ages 19 to 36, who were enrolled at Western Oregon University. A part of them studied English as a second language while they were undergraduates [17].

Method

A. Population and Sample

All fifth- students enrolled in Al Noor secondary private school made up the study's population. Their social and scholastic circumstances were roughly comparable in order to accomplish the effects of animation. Additionally, students of both groups came from the same educational, social, and economic backgrounds, both instructors have been engaged in teaching for more than five years. They are both able to use the computer with ease. There were 61 students in the sample in the two groups the experimental and control (see table 1).

The Name of School	Experimental group	Control Group	Total
Al Noor Secondary Private School	35	26	61

Table 1. Shows the sample distribution for both experimental and control groups.

B. The Variables

1. The Independent Variable

1. Teaching strategy: using animation to teach fifth-grade English.
2. The overall English proficiency of the students during the last three years.

2. The Dependent Variables

The Performance of students in the in the four abilities (“listening”, “speaking”, “reading”, “writing”).

C. The Procedure of the Research

1. Students' general competence was determined using their three-year GPA (Grade Point Average).
2. Classes were chosen and split up into two groups, experimental and control. The experimental group was instructed via (animation) a computer created programme, while the control group was taught using the conventional. In a month, two units were taught.
3. Students received instruction from their teachers during this month. They were provided instructions on how to teach the couple units. The wtiter entered a few classes with no any disruptions.
4. Based on the content of the modules, students took an achievement test after a month to gauge their proficiency in the four skills of speaking, writing, listening, and reading.

D. Research Design

A total of 61 students were divided into experimental and control groups for this experimental investigation. Two courses from the first semester are included in the animation program. After a month of computer-assisted instruction, the participants took a test covering the four. The exam determined how learners in both groups differed from one another. The units were created as multimedia lessons that could be taught on a computer. A sequence of screens displayed the content. There is one instructional activity on each screen. The tasks were available for students to do on the screen. Activities were created to help with vocabulary and grammar as well as speaking, writing, listening, and reading.

E. Instrumentation

1. Textbook

Two units (2 and 3) were chosen from the fifth-grade textbook. Reading is the main topic of the first lesson, speaking is the second, listening is the third, and writing is the final one. Three phases make up the reading lesson: pre-reading questions, reading material, and additional in-depth questions in the last phase. Every query is a wh-questions. Students explore new structures through both oral and written sentences during the speaking class. Pronunciation is covered throughout the listening lesson, and students are given easy tasks to finish. Writing skill concentrates on spelling, structure of phrases and sentences, alphabetical arrangement, and writing assignments like filling in the blanks. Four pages are crammed with drills and activities.

F. The Methods for Teaching Reading

Computer-assisted reading-lesson methods aim to help students grasp the core idea, correctly pronounce new words, and locate specific information in the reading material to answer questions. Because our circumstances are dynamic and genuine, interaction is essential for students. Each reading segment was broken down into:

1. Starting a new lesson by introducing new terminology or reviewing previously learned material. Students must match words with objects, receive comments right away, examine the images and discuss them.
2. In this exercise, a model was shown on the screen before students were invited to discuss their personal experiences related to the subject. Then they were instructed to respond to the questions in pairs based on their individual backgrounds. The reading materials are: As the students focus on the image, the teacher asks them to

describe what they see. Understanding of the text is the goal of this exercise. Each graphic requires students to make predictions about what will happen. After that, they start listening to their instructor or the computer cassette or tape; both together and solo repeats are required.

3. A series of wh-questions follow each text. Students look and listen to the teacher's first question before working in pairs to respond to the next questions. The teacher or the computer may provide feedback. Students can listen to the answers as they appear on the screen. A number of students are then selected to read the lesson out loud either alone or in a role-play. Students will complete additional exercises to focus more on vocabulary. The exercises are all intended to be performed and displayed right on screen.

G. The Methods for Teaching Speaking

Computer-based speaking lesson's processes were designed to enable students to engage with text and images using animation. Applying more realistic, emotive images to emphasize the application of realia in the classroom. The purpose of speaking exercises was to encourage learners' engagement and recall. After listening to an authentic model, learners mimic it and then develop their own, comparable model. Students must discuss the pictures that will be shown. See and talk, inquire and respond: Students watch and listen to the model while looking at the screen during these exercises.

H. The Procedure for Teaching Listening Lessons

A pre-listening exercise that introduces the listening task or a follow-up exercise for the prior session is completed before a listening lesson. Through listening, students work on rhymes, tones, stresses and intonations, and the voices of "ed" ending (/d /, /t /, and /əd/) in particular past verbs. They also listen and rearrange series of disorganized events.

I. The Methods for Teaching Writing

The methods of teaching writing skill were created to accomplish the textbook's writing task's goal in a unique and engaging way. Ordering and writing sentences, substituting words for pictures, practicing dictation, and building or creating new sentences are all part of the tasks.

J. Test

Following animation use in the four skills, the test was created to evaluate students' proficiency in English. In January 2025, during the first semester, the test was introduced. There were two papers in the test: one covered vocabulary and reading, and the other covered writing and listening. The content and categories of the questions mirrored the information in the textbook. Different question categories were taken into account, including clarity, level, time, design, and visuals.

K. Validity of the Test

A group of educators validated the test. Three educators and two supervisors. They were asked to rate the test based on its suitability, comprehensibility, clarity, time allotted, and question count. Some modifications were made in response to their recommendations.

L. Administration of the Test

The exam was given during the first course of the 2024–2025 academic years. To ensure that every student understood the test's objectives, explicit instructions were provided, like how many questions, the way to respond to them, the time, the testing environment, the location. Lighting, seating, and ventilation was also examined to help them feel more at ease and reduce anxiety, they were told to write numbers rather than their names, this made them feel more comfortable.

The Findings of the Research

1. The Findings of the Research

Hypothesis 1 is that, at the level of $\alpha=0.05$, there aren't appreciable disparities in between both groups in the four language abilities as a result of the instruction strategies (animation contrasted to traditional technique).

Skill	Group	N	Mean	Sd	t	df	Sig
listening	control	26	66.26	22.93	-2.115	123	0.036
	Experimental	35	75.16	23.83			
Speaking	Control	26	57.83	21.62	-2.303	35	0.027
	Experimental	35	73.10	18.66			
Reading	Control	26	54.38	22.05	-5.248	123	0.000
	Experimental	35	74.74	21.20			
Writing	Control	26	64.72	20.70	-4.472	123	0.000
	Experimental	35	81.50	21.04			

Table 2. shows the t-test findings of the variations in both groups' performance on the four language abilities as a result of the teaching strategies at the $\alpha=0.05$ level.

The findings show that the two groups' performance in the four language skills varies significantly depending on the instructional strategies used. As shown in table (2), experimental group notably performed better than the control group in the four skills of speaking ($M=73.10$), listening ($M=75.16$), "reading" ($M=74.74$), and "writing" ($M=81.50$). It indicates that using animation has a greater impact on students' achievement in the four skills than using the conventional approach of teaching.

Skills	Group	N	Df.	Mean.	Std. deviation	Sig
General ability	Experimental	35	16	64.9938	13.49842	0.000
Listening	Experimental	35	16	56.5625	27.61152	
General ability	Experimental	35	16	64.9938	13.49842	0.000
Speaking	Experimental	35	5	53.5000	22.35844	
General ability	Experimental	35	16	64.9938	13.49842	0.000
Reading	Experimental	35	16	50.7188	20.77817	
General ability	Experimental	35	16	64.9938	13.49842	0.000
Writing	Experimental	35	16	57.3125	25.35539	

Table 3. shows the T-test findings for the experimental group at the $\alpha=0.05$ level comparing their general ability to their performance in the four abilities.

The findings indicate that the general ability of poor learners and their performance in the four abilities differ significantly. The general ability mean is ($M=64.9938$). Nonetheless, table (3) shows that students' means for the four abilities are speaking ($M=53.5000$), listening ($M=56.5625$), reading ($M=50.7188$), and writing ($M=57.3125$).

Skill	Group	N	Df.	Mean.	Std. deviation	Sig
General ability	Control	26	15	82.2118	6.47025	0.000
Listening	Control	26	15	78.0588	17.24150	
General ability	Control	26	15	82.2118	6.47025	0.000
Speaking	Control	26	5	72.1667	16.33911	
General ability	Control	26	15	82.2118	6.47025	0.000
Reading	Control	26	15	76.9412	17.25950	
General ability	Control	26	15	82.2118	6.47025	0.000
Writing	Control	26	15	86.3676	13.12833	

Table 4. Indicates the findings of the T-test comparing the general ability of students to their performance in the four abilities for the control group at the level of $\alpha=0.05$.

The findings show, except writing, there are notable disparities between their total ability and their performance in the four skills. The total ability mean is ($M=82.2118$). However, as shown in table (4), the means for learners' performance in the four abilities are "speaking" ($M=72.1667$), "listening" ($M=78.0588$), "reading" ($M=76.9412$), and "writing" ($M=86.3676$).

Hypothesis 2 states that there are no appreciable variations in between both groups' performance for students at the same level. Findings of the test performance discrepancies between the two groups are shown in table (5).

Group	N	mean	sd	t	df	Sig
Control	26	34.93	14.22	-1.766	30	0.088
experimental	35	45.99	20.60			
Control	26	71.56	10.72	-1.302	31	0.203
experimental	35	76.97	12.74			
Control	26	48.80	9.66	-5.047	58	0.000
experimental	35	63.52	12.22			

Table 5. Findings of the test performance discrepancies between the two groups

The results show that there are no appreciable distinctions in both groups performance; the control group's performance was $M=34.93$. However, for the experimental, ($M=45.99$). Additionally, the results show that there are no appreciable disparities between both groups ($M=76.97$ for the experimental group and $M=71.56$ for the control group). However, the experimental group performed better than the control group regarding grades, and the

findings show that there are notable variations between the two groups' performance among average students. (M=48.80) for the experimental and (M=63.52) for the control.

Hypothesis 3: There is no discernible difference in between the performance of both groups on any of the four abilities.

The Skills		Speaking	Reading	Writing
listening	pearson correlation	0.766	0.740	0.785
	significance	0.000	0.000	0.000
	number	37	125	123
speaking	pearson correlation	-----	0.842	0.823
	significance	-----	0.000	0.000
	umber	-----	37	37
reading	pearson correlation	-----	-----	0.799
	significance	-----	-----	0.000
	Number	-----	-----	123

Table 6. Findings of t-test comparing the performance of both groups across the four competencies.

Because animation was used in both groups' performance of the four skills, the results show strong relationships between the skills. The outcomes of the four skills were essentially the same. This indicates that they have strong links with one another. Skills have a Pearson correlation between 0.740 and 0.823.

Conclusions

A. Conclusions

Animation is a significant tool for fostering the four. One could argue that using animation in the classroom increases students' motivation and interest in and time spent on computer-based work. An important factor in enhancing excitement for learning English is animation, for instance, when students are not anxious and they are comfortable in a learning-friendly environment, their shyness declines. Since animation can offer a rich learning environment and advancement, the study provides a useful first step toward implementing its use in English language instruction. Additionally, as multimedia requires less work from the instructor inside class, this study might help increase teachers' awareness of the need to improve animation in the future. This study can provide a benefit to promote more research on the efficacy of employing animation in education because of the beneficial impact that animation makes to EFL.

B. Recommendations for Teachers

1. They should aware various learning styles of students and offer suitable strategies.
2. Different approaches to teaching EFL (English as a foreign language) are required. to increase and enhance a successful learning in the current technological era.
3. Teachers should know that using technology in the class is one of their duties.
4. Teachers should receive training to advance their abilities in producing, choosing, and utilizing multimedia for the goal of using it as a resource rather than a tool.
5. They should look for chances to develop their abilities in using technology.
6. Teachers should employ the animation that has been adapted into the syllabus

7. Teachers may create multimedia content on their own. They can create basic exercises with tools like "Power Point program activities" or utilize pre-made multimedia content from many sources, including www.teachingenglish.org.uk.

C. Suggestions for Further Research

1. Animation's impact on language learning, particularly in EFL.
2. Improving authenticity and contextualization of English content for instruction.
3. The effects of employing animation on students' English competence.
4. Improving multimedia in the teaching of English four skills
5. Impressions of parents, teachers, and students about using multimedia in teaching EFL through animation.

References

- [1] N. Al-Mutawa and T. Kailani, *Methods of Teaching English to Arab Students*. London, U.K.: Longman, 1990.
- [2] J. Chanlin, "The Effects of Gender and Presentation Format in Computer-Based Learning," *Computers in Human Behavior*, vol. 38, no. 1, pp. 61–65, 2001. Routledge, Taylor & Francis Group.
- [3] K. Akahori and J. Yang, "A Discourse Structure Analysis of Technical Japanese Texts and Its Implementation on the WWW," *Computer Assisted Language Learning*, vol. 13, no. 2, pp. 119–141, 2000.
- [4] Abdurrahman, "The Effect of Computer Assisted Language Learning (CALL) on United Arab Emirates English as a Foreign Language (EFL) School Students' Achievement and Attitudes," *Journal of Interactive Learning Research*, United Arab Emirates, vol. 17, no. 2, pp. 121–142, 2006.
- [5] J. Al-Janisse, "The Cognitive Client: A Counseling-Learning Model," *Journal of Religion and Health*, vol. 22, no. 2, pp. 167–168, 1982. Springer Netherlands.
- [6] R. Al-Jarf, "Use of CALL in No-Tech EFL Classrooms," *Asian EFL Journal*, Riyadh, Saudi Arabia: King Saud University, vol. 7, no. 2, pp. 56–78, 2005.
- [7] Almekhlafi, "The Effect of Computer Assisted Language Learning (CALL) Achievement and Attitude," *Journal of Interactive Learning Research*, vol. 17, no. 2, pp. 121–142, 2006.
- [8] J. Anderson, "The Myth of Persistence of Vision Revisited," *Journal of Film and Video*, vol. 45, no. 1, pp. 3–12, 1993.
- [9] L. Chen, "The Effect of the Use of L1 in a Multimedia Tutorial on Grammar Learning: An Error Analysis of Taiwanese Beginning EFL Learners' English Essays," *Asian EFL Journal*, vol. 2, no. 4, Chung Hwa College of Medical Technology, Tainan, Taiwan, 2006.
- [10] K. Al-Seghayer, "The Effect of Multimedia Annotation Modes on L2 Vocabulary Acquisition: A Comparative Study," *Language Learning & Technology*, Univ. of Pittsburgh, vol. 5, no. 1, pp. 202–232, 2001.
- [11] R. Ayres, "Learner Attitudes Towards the Use of CALL," *Computer Assisted Language Learning*, vol. 15, no. 3, pp. 241–249, 2002.
- [12] Barker and J. Torgesen, "An Evaluation of Computer-Assisted Instruction in Phonological Awareness With Below Average Readers," *Journal of Educational Computing Research*, vol. 13, no. 1, pp. 89–103, 1995.
- [13] E. Caplan, "The Effect of Animated Textual Instruction on Learners' Written Production of German Modal Sentences," Ph.D. dissertation, Dept. Second Language Acquisition, Univ. of South Florida, Tampa, FL, USA, 2002.
- [14] Atiyyat, "The Effect of Computer Assisted Instruction Upon Tenth Grade Students' Mastering of English Vocabulary," M.A. thesis, Univ. of Jordan, Amman, Jordan, 1995.
- [15] S. Alsouqi, "The Effect of Using Computers in the Teaching of L2 Composition on the Writing Performance of Tenth Grade Students in Amman Private Schools," M.A. thesis, Univ. of Jordan, Amman, Jordan, 2001.



-
- [16] P. Brett, "A Comparative Study of the Effects of the Use of Multimedia on Listening Comprehension," System, vol. 25, no. 1, pp. 39–53, 1997. Elsevier Science Ltd.
- [17] L. Liang, "Effects of Using a Computer-Lab on Oral English Fluency Amongst Chinese Students at WOU," Sino-US English Teaching, vol. 5, no. 2, pp. 48–55, 2008.