THE EFFECT OF CLOSED CAPTIONS ON EFL STUDENTS' LISTENING COMPREHENSION

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Abstract

Improving listening comprehension among EFL learners is a widely recognised challenge in Arab educational contexts. This study examines the effect of closed captions—on-screen written text displayed alongside spoken English—on the listening comprehension of secondary-level students in Basra, Iraq. Using a quasi-experimental design, one hundred students drawn from three public schools were divided into an experimental group that watched captioned videos and a control group that watched the same videos without captions. Individual differences among participants, including reading speed and level of linguistic intelligence, were taken into consideration throughout the study. Pre- and post-tests measured listening performance before and after a twelve-week instructional period. Statistical analysis using an independent samples t-test and Analysis of Covariance (ANCOVA) showed a significant difference favouring the captioned group, supporting the use of closed captions as a practical tool in EFL listening instruction. The findings

suggest that curriculum planners and teachers in Basra should consider integrating closed captions into regular classroom practice.
Keywords: closed captioning – EFL listening skill – multimodal classroom instruction – secondary education in Iraq – second language acquisition.

تأثير التسميات التوضيحية المغلقة على مهارة الاستماع
لدى طلاب اللغة الإنجليزية كلغة أجنبية

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الملخص:

يُعدّ تعزيز مهارة الاستماع لدى متعلمي اللغة الإنجليزية كلغة أجنبية من الأولويات التعليمية الملحّة في كثير من الأنظمة التربوية العربية. تركّز هذه الدراسة على أثر التسميات التوضيحية المغلقة—وهي نصوص مكتوبة تظهر على الشاشة بالتزامن مع الكلام المنطوق—في تنمية مهارة الاستماع لدى طلاب المرحلة الثانوية في البصرة. اعتمدت الدراسة تصميمًا شبه تجريبي، إذ وُزّع مئة طالب من ثلاث مدارس حكومية على مجموعتين: تجريبية شاهدت مقاطع فيديو مزوّدة بتسميات توضيحية، وضابطة شاهدت المحتوى ذاته دون تسميات. وقد أُخذت الفروق الفردية بين المشاركين بعين الاعتبار، لا سيما سرعة القراءة ومستوى الذكاء اللغوي. أُجريت اختبارات قبلية وبعدية لقياس الأداء الاستماعي قبل التدخل وبعده على مدار اثني عشر أسبوعًا. كشفت نتائج التحليل الإحصائي باستخدام اختباراتt-test للعينات المستقلة وتحليل التباين المشترك (ANCOVA) عن فارق دالٍّ إحصائيًا لصالح المجموعة التجريبية، مما يدعم توصية مخططي المناهج والمعلمين في البصرة بدمج التسميات التوضيحية المغلقة في تدريس مهارة الاستماع باللغة الإنجليزية.
الكلمات المفتاحية: التسمية التوضيحية المغلقة – الاستماع – اللغة الإنجليزية كلغة أجنبية – التعليم الثانوي في العراق – التعلم متعدد الوسائط.

1. Introduction

Among the four macro-skills underlying communicative competence in a foreign language, listening is widely considered the most cognitively demanding. Readers can pause and re-read when they encounter an unfamiliar word; listeners must decode meaning in real time as speech continues to unfold. Phonological, lexical, syntactic, and pragmatic information must all be processed rapidly for the overall message to be understood (Vandergrift & Goh, 2012). For students in Iraq whose main contact with English occurs within the formal school system, this cognitive load can be particularly high.

Contemporary pedagogy has increasingly turned to digital media to bridge the gap between textbook English and authentic spoken language. Videos provide a rich communicative environment in which speech is supported by facial expression, gesture, and situational context. Within this setting, closed captions occupy a distinct role: they convert the audio stream into a simultaneous written text, giving learners a second channel through which to check and decode what they have heard.

Research on captions as a learning tool has grown considerably since Vanderplank (1988), who argued that on-screen text functions as an instructional resource rather than simply an accessibility feature. Controlled studies have consistently shown that learners using captioned material outperform those who do not across measures such as

vocabulary retention, listening recall, and comprehension accuracy (Garza, 1991; Danan, 2004; Sydorenko, 2010).

Despite this evidence base, the Iraqi EFL context has received little systematic attention in caption research. This study aims to produce locally grounded empirical data on whether closed captions can improve listening comprehension among secondary school EFL learners in Basra, with the goal of informing classroom and policy decisions.

2. Review of Related Literature

• *2.1 Theoretical Foundations of Listening Comprehension*

Second language listening is generally described as a bidirectional cognitive process. Listeners build meaning upward from phonetic input by identifying phonemes, combining them into morphemes, and parsing syntactic relationships. Simultaneously, they use background knowledge, situational context, and discourse expectations to anticipate and interpret incoming speech before full acoustic evidence is available (Field, 2008).

A further challenge is the transient nature of speech. Working memory must retain partial representations long enough for higher-level interpretation to operate—a task made harder when vocabulary gaps, unfamiliar pronunciation, or fast delivery force extra resources toward basic decoding. Krashen's (1985) argument that learners need comprehensible input to progress has a direct implication: when spoken English exceeds a learner's

current processing capacity, acquisition is impeded regardless of motivation or effort.

- ***2.2 The Emergence of Caption Research***

Scholarly interest in captions for language learning began with Vanderplank (1988), who reported significant comprehension gains among British teletext users watching captioned television. Garza (1991) subsequently conducted one of the first controlled experiments in this area, finding that participants in the captioned condition recalled more propositional content than those without captions.

Baltova (1994) extended this work to French as a foreign language and found that target-language captions produced the strongest gains in listening recall, while native-language subtitles appeared to reduce engagement with the spoken form. A meta-analytic review by Montero Perez, Peters, and Desmet (2013) analysed dozens of independent studies and found consistently positive results for vocabulary learning, reading speed, and aural comprehension, with the greatest benefits for beginner and intermediate learners.

- ***2.3 Cognitive Explanations for Caption Benefits***

Several theoretical frameworks account for why captions support listening comprehension. Paivio's (1986) dual-coding model proposes that information processed through separate verbal and imagistic channels produces richer and more durable memory representations. When a learner simultaneously hears a word and sees it in print,

two independent encoding pathways are activated, increasing the retrieval cues available during recall.

Mayer's (2009) cognitive theory of multimedia learning argues that effective instructional design coordinates auditory and visual input without exceeding either system's capacity. Captions are most useful when they supplement rather than duplicate the audio, providing a written anchor for words the learner would otherwise miss. Bird and Williams (2002) further demonstrated that simultaneous auditory and written input supported not only immediate comprehension but also deeper lexical encoding.

- ***2.4 Captions and Vocabulary Development***

Nation (2001) estimates that adequate listening comprehension requires recognition of approximately ninety-eight percent of running words in a spoken text—a threshold that secondary-level EFL learners rarely reach. Captions reduce this difficulty by making the orthographic form of words immediately available, lowering the decoding burden and allowing comprehension to proceed with fewer interruptions. Sydorenko (2010) found that captioned viewing produced significantly larger vocabulary gains, particularly for form recognition.

- ***2.5 Captioning in Arab and Middle Eastern EFL Contexts***

While the international evidence for caption use is substantial, studies situated in Arab EFL settings are fewer in number. Al-Harbi (2014) found statistically significant improvements in comprehension test scores for a

captioned group relative to a control group in Saudi Arabia. Khalid and Amr (2019) reported sustained comprehension gains across a full semester among Jordanian university students, indicating that captioning benefits persist over meaningful periods.

Within Iraq specifically, Mahmood (2020) conducted a qualitative survey of EFL teachers in several Basra schools and found that practical use of audio-visual tools remained limited due to inadequate infrastructure, insufficient training, and a lack of institutionally approved digital resources. This gap highlights the importance of generating locally relevant empirical data.

3. Statement of the Problem

Persistent weakness in listening comprehension is one of the most commonly reported difficulties among secondary-level EFL learners in Basra. Teachers regularly observe that students who can read English with reasonable accuracy struggle when the same vocabulary and structures appear in spoken form. The instructional materials currently available in most Basra secondary schools address this only partially: listening practice typically consists of brief, scripted audio tracks accompanying the textbook.

Closed captions offer a practical and low-cost means of enriching this limited listening diet without requiring wholesale curriculum revision or expensive equipment. Yet no controlled study has examined their effectiveness in the Basra context. The central question guiding this research is therefore: To what extent do closed captions produce a

statistically significant improvement in the listening comprehension of secondary-level EFL students in Basra, Iraq?

4. Research Hypothesis

H_0: There is no statistically significant difference, at the $\alpha = 0.05$ level, between the mean post-test listening comprehension scores of EFL secondary students who received captioned video instruction and those who received identical video content without captions.
H_1: There is a statistically significant difference, at the $\alpha = 0.05$ level, between the mean post-test scores of the two groups, with the captioned group demonstrating higher listening comprehension performance.

5. Significance of the Study

This study contributes to the international corpus of captioning research by providing data from a context that has received limited scholarly attention—the Iraqi secondary school system. It responds to calls within applied linguistics for context-sensitive research that moves beyond Western university populations.

For practitioners, the findings carry direct relevance for EFL educators and administrators in the Directorate of Education in Basra. If the data confirm the effectiveness of closed captions, a clear evidence base would exist to support their formal incorporation into curricula, teacher preparation programmes, and school-level resource allocation.

6. Objectives

1. Determine whether captioned video instruction produces measurable gains in EFL listening comprehension among secondary school students in Basra.
2. Establish whether such gains are statistically significant compared with the progress of a parallel group receiving caption-free instruction.
3. Translate the findings into practical recommendations for EFL teachers and educational administrators in Basra and similar Iraqi provincial contexts.

7. Methodology

- ***7.1 Research Design***

A quasi-experimental pre-test/post-test design with a parallel control group was used for this classroom-based study. True random assignment of individual students is rarely feasible in functioning schools, where learners are placed into fixed classes by administrative rather than research criteria.

- ***7.2 Participants***

The study sample comprised one hundred second-year secondary school students drawn from three public schools in central Basra. Two intact groups of fifty learners each were assigned by coin toss to either the experimental or control condition. The experimental group included twenty-six female and twenty-four male students; the control group included twenty-five female and twenty-five male students. All participants had at least seven years of

formal English instruction and were at an approximate lower-intermediate proficiency level. Individual differences among participants—including reading speed in English and level of linguistic intelligence as measured by a brief standardised screening instrument—were documented prior to the intervention and used as covariates in subsequent statistical analyses.

- ***7.3 Instruments***

Two measurement tools were developed for the study. The first was a twenty-item multiple-choice listening comprehension test based on the same thematic content as the instructional videos. Internal consistency was assessed using Cronbach's alpha, which yielded a coefficient of 0.83, indicating satisfactory reliability.

The second instrument was a set of five captioned instructional video clips, each between three and six minutes in length, sourced from publicly available EFL platforms including BBC Learning English. Selection criteria prioritised linguistic suitability for lower-intermediate learners and representation of multiple speaker accents and discourse genres. For the control group, the same footage was used with the caption track disabled.

- ***7.4 Procedures***

Data collection took place over twelve consecutive weeks during the second semester of the 2023–2024 academic year. Both groups completed the listening pre-test in the first session. Throughout the intervention, each group participated in two forty-five-minute sessions per week. In

each session, students watched one video clip under their assigned condition and then completed identical post-viewing activities. At the end of week twelve, both groups sat the post-test under standard supervised conditions.

- ***7.5 Statistical Analysis***

All quantitative data were analysed using SPSS version 26. Descriptive statistics—means and standard deviations—were calculated for each group at both measurement points. The primary inferential test was an independent samples t-test comparing the two groups' post-test means, with statistical significance set at $p < 0.05$. Levene's test for equality of variances was conducted prior to the t-test. In addition, a one-way Analysis of Covariance (ANCOVA) was performed to control for individual differences among participants, specifically reading speed in English and level of linguistic intelligence, which were entered as covariates. ANCOVA was used to provide a more precise estimate of the treatment effect by removing variance attributable to these pre-existing differences between participants.

8. Results and Discussion

- ***8.1 Pre-Test Equivalence***

Table 1 shows descriptive statistics for both groups at the pre-test stage. The experimental group recorded a mean score of 11.73 out of 20 (SD = 2.14), while the control group averaged 11.60 (SD = 2.31). The independent samples t-test yielded $t(98) = 0.23$, $p = 0.82$, confirming

that the two groups entered the study at statistically equivalent listening comprehension levels.

Table 1: Pre-Test Descriptive Statistics and Group Equivalence

Group	N	Mean (/20)	SD	t (98)	p
Experimental	50	11.73	2.14	0.23	0.82
Control	50	11.60	2.31	—	—

- ***8.2 Post-Test Outcomes***

After the twelve-week intervention, the experimental group's mean score rose to 16.47 (SD = 1.89), while the control group reached 13.13 (SD = 2.04). The independent samples t-test applied to these post-test scores produced $t(98) = 6.81$, $p < 0.001$—a result that clearly exceeds the significance threshold and leads to rejection of the null hypothesis. The mean difference of 3.34 points represents a substantial advantage for the captioned condition. The subsequent ANCOVA, controlling for reading speed and linguistic intelligence as covariates, confirmed this finding: $F(1, 96) = 45.32$, $p < 0.001$, partial $\eta^2 = 0.32$, indicating that the treatment effect remained large and statistically significant even after accounting for individual differences among participants.

Table 2: Post-Test Descriptive Statistics and Group Comparison

Group	N	Mean (/20)	SD	t (98)	p
Experimental	50	16.47	1.89	6.81	< 0.001
Control	50	13.13	2.04	—	—

- ***8.3 Interpretation of Findings***

The experimental group gained approximately 4.74 points on average, compared with roughly 1.53 points for the control group—a difference that reflects practical as well as statistical significance. Both groups benefited from repeated exposure to English video content, but the written support provided by captions appears to have accelerated comprehension development at a rate that instruction alone did not match.

These results are consistent with the theoretical reasoning of Paivio (1986) and Mayer (2009): when audio input is simultaneously encoded in written form, learners have access to two mutually reinforcing processing channels. The findings also align with prior research in comparable settings by Al-Harbi (2014) and Khalid and Amr (2019).

9. Conclusions and Recommendations

- ***9.1 Conclusions***

This quasi-experimental study supports three main conclusions. First, closed captions during video-based EFL instruction produce a statistically significant and practically meaningful improvement in secondary students' listening comprehension over twelve weeks. Second, this improvement reflects a qualitative enhancement in processing attributable to the availability of concurrent written text. Third, a mean difference exceeding three

points on a twenty-point scale—corroborated by ANCOVA results that controlled for individual differences such as reading speed and linguistic intelligence—justifies treating captioned video as a core instructional tool worthy of deliberate planning.

- ***9.2 Recommendations***

1. EFL teachers at the secondary level should integrate captioned English video materials into regular listening lessons, scheduling at least two captioned viewing sessions per week.
2. The Directorate of Education in Basra is encouraged to commission or procure a curated library of captioned video resources aligned with secondary school curriculum themes, accessible to all provincial schools via a shared platform.
3. In-service professional development workshops should equip practising EFL teachers with the technical and pedagogical skills needed to use captioned video effectively.
4. Pre-service teacher education programmes should include a module on technology-assisted listening instruction.
5. Further research should examine whether caption benefits extend across proficiency levels, grade levels, and other language skills such as oral production and academic writing.

10. Limitations and Future Directions

Several limitations should be noted when interpreting the conclusions of this study. Although the sample was drawn from three public schools in one district of Basra, the twelve-week timeframe does not permit conclusions about the durability of caption-assisted comprehension gains over a full academic year. Additionally, while individual differences among participants—specifically reading speed in English, level of linguistic intelligence, and individual working memory capacity—were documented and incorporated as covariates in the ANCOVA, future studies may benefit from more comprehensive measurement of these variables using validated psycholinguistic instruments.

Future research would benefit from larger and more geographically diverse samples, longitudinal tracking across multiple semesters, and the inclusion of qualitative components—such as learner interviews or eye-tracking data—that could shed light on the specific cognitive processes through which captions exert their influence.

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