

Incidental Vocabulary Learning through Captioned Videos: An Experimental Study among Moroccan EFL Middle School Learners

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Abstract

The current experimental study aims to investigate the impact of watching captioned videos on incidental learning of the written form and meaning aspects of vocabulary knowledge among Moroccan EFL middle school learners. The study adopted a pretest-posttest experimental design. 60 middle school EFL learners were randomly assigned to the experimental group (N30), who watched captioned videos, and the control group (N30), who watched uncaptioned videos. The Paired Samples T-Tests results showed a statistically significant improvement in both word written form recognition and meaning recognition within the experimental group. In contrast, no statistically significant improvement was found within the control group. Analysis of Covariance (ANCOVA) was conducted to compare the differences in vocabulary gains between the control group and the experimental group and the results indicated a statistically significant difference between the experimental group and the control group in word form recognition. However, no statistically significant difference was found in word meaning recognition. These findings provided empirical evidence for the effectiveness of captioned videos in enhancing incidental vocabulary learning.

Keywords: Incidental Vocabulary Learning, Intentional Vocabulary Learning, Captioned videos, EFL.

Introduction

The ever-changing field of language learning, driven by technology breakthroughs, demands a study of efficient vocabulary acquisition strategies. Fluency in vocabulary has a major impact on language understanding and expression. To engage today's learners, traditional vocabulary teaching strategies, which are primarily explicit and unrelated to digital literacy trends, need to be updated. By incorporating visual, auditory, and contextual information, captioned videos, specifically short films, offer authentic situations with contextual cues, enriching the learning experience.

This experimental study aims to measure captioned videos' effectiveness in improving incidental vocabulary learning among 9th-grade English as a Foreign Language (EFL) students at Moussa Ben Noussaire Middle School.

Rationale

Several studies worldwide have investigated incidental vocabulary learning through captioned videos. However, no research in Morocco has explored this avenue. Moreover, prior research often focused on intermediate proficiency levels and advanced levels, overlooking beginner students, particularly in the

Moroccan context. This study intends to bridge these gaps by examining the impact of captioned videos on incidental vocabulary learning among EFL beginners in Moroccan middle schools.

Purpose of the Study

Building on the existing literature on vocabulary acquisition using captioned videos, this study aims to assess the impact of captioned videos on incidentally recognizing the written form and meaning of words incorporated in videos' captions, compare learning outcomes between the participants watching captioned videos and those watching uncaptioned videos, provide empirical evidence to contribute to the field's discourse and offer practical recommendations for integrating captioned videos into Moroccan EFL middle school curriculum.

Research Questions and Hypotheses

Research question 1: Does the use of captioned videos improve participants' ability to recognize the written form of words that appear in the captioned videos compared to the use of uncaptioned videos?

Research question 2: Does the use of captioned videos improve participants' ability to recognize the meaning of words that appear in the captioned videos compared to the use of uncaptioned videos?

Research question 3: Are there any significant differences in vocabulary tests scores between the participants exposed to captioned videos and those exposed to non-captioned videos?

The research questions revolve around the improvement in written form and meaning recognition with the use of captioned videos compared to uncaptioned videos. Hypotheses predict significant differences between the experimental group and the control group, favoring the participants who watch captioned videos (experimental group) in both written form and meaning recognition tests.

Literature Review

Learning vocabulary encompasses understanding multifaceted aspects of the target words such as meanings, forms, usage, and associations, crucial for language proficiency (Nation, 2001; Laufer, 1997; Wilkins, 1972; McCarthy & O'Dell, 2005). Scholars stress that language competence and effective communication are significantly influenced by the depth and breadth of vocabulary knowledge (Qian, 2002; Schmitt, 2017). Other scholars emphasize that vocabulary plays an indispensable role in facilitating inclusive comprehension and proficient expression in listening, speaking, reading, and writing (Wilkins, 1997; Schmitt, 2000; Laufer & Nation, 1999; Marion, 2008; Nation, 2011; Read, 2000). Acquiring new words requires employing strategies categorized into discovery and consolidation strategies (Chamot & Kupper, 1989; Cameron, 2001; Schmitt, 1997; Heng, 2019; Oxford, 1990; O'Malley et al., 1985).

Incidental vs. Intentional Vocabulary Learning:

Incidental vocabulary learning occurs unintentionally in authentic contexts where learners focus on language comprehension to expand their vocabulary (Gass, 1999; Huckin & Coady, 1999; Hulstijn, 2001b). In contrast, intentional vocabulary learning occurs in an unauthentic context where learners are engaged in deliberate efforts, employing exercises, explicit instruction, and mnemonic techniques to learn new words (Laufer & Hulstijn, 2001; Hulstijn, 2001).

Previous research on the impact of Captioned Videos on Vocabulary Learning

The incorporation of captioned videos as potential tools for incidental vocabulary learning among EFL learners has gained special attention in recent times (Elgort, 2011).

Vocabulary acquisition in second or foreign language learning is crucial for overall language proficiency. The literature review on vocabulary learning strategies has explored both intentional and incidental learning approaches, shedding light on their significance and effectiveness (Nation, 2001; Hulstijn, 2001a). Incidental vocabulary learning, defined as learning without deliberate instruction, has been extensively studied through various means.

Studies by Alavi (2008) and Pam & Karimi (2016) highlighted the effectiveness of input enhancement and explicit instruction, respectively, on vocabulary acquisition. However, limitations exist in accounting for context, learner characteristics, and exposure, impacting the learning process (Huckin & Coady, 1999; Restrepo Ramos, 2015).

The comparison between incidental and intentional vocabulary learning remains a topic of debate. Barcroft (2009) found that explicit instruction led to better word recognition, while Laufer (2003) challenged the assumption that incidental learning significantly contributes to vocabulary gain. Such contrasting findings underline the complexity of vocabulary acquisition.

Within the realm of incidental learning, the role of captioned videos has garnered attention. Captioning, defined as on-screen text in the same language as the soundtrack, has been investigated for its impact on vocabulary acquisition (Markham, 1999; Perez et al., 2014; Peters, 2019).

Research by Rodgers (2013) and Perez et al. (2014) revealed positive impacts of captioned videos on vocabulary acquisition among EFL learners. However, studies by Birulés-Muntané and Soto-Faraco (2016) and Peters (2019) found inconclusive evidence regarding the effectiveness of captioned videos for vocabulary learning. Factors such as learner proficiency, materials, and methodological approaches were identified as influencing the success of incidental vocabulary learning (Webb et al., 2023).

These studies collectively depict a landscape of varied findings regarding the efficacy of captioned videos for incidental vocabulary learning. While some studies highlight their positive influence (Rodgers, 2013; Perez et al., 2014; Peters, 2019), others suggest inconclusive or minimal effects (Birulés-Muntané and Soto-Faraco, 2016). It's evident that the nuances of language learning, including learner characteristics and methodological variations, significantly impact the effectiveness of incidental vocabulary acquisition. In conclusion, the review underscores the complexity of vocabulary learning strategies, emphasizing the need for a nuanced approach considering both intentional and incidental learning methods. The conflicting findings on the effectiveness of captioned videos highlight the necessity for further research to better understand their role in enhancing vocabulary acquisition among language learners.

Theoretical framework

Learning a new language hinges on vocabulary acquisition, emphasized by Teng (2023) who stresses the need for a direct link between new words and memory. The support for using captioned videos in incidental vocabulary learning finds ground in various theories. Dual Coding Theory (Paivio, 1986) proposes that activating verbal and imagery systems aids recall by mentally representing new information in linguistic and visual codes. Working Memory (Baddeley, 2000) suggests three systems that collaboratively process knowledge, including words, pictures, and sound. Cognitive Load Theory (Sweller et al., 2011) argues for reduced cognitive load, a goal that captioned videos align with by reducing extraneous load and optimizing germane load. Mayer's Cognitive Theory of Multimedia Learning (2012)

underscores the efficacy of presenting words with pictures for comprehension and retention, aligning with the principles of captioned videos that distribute processing across multiple channels (M. F. Teng, 2020). These theories form the foundation for the hypothesis that captioned videos facilitate incidental vocabulary learning by engaging verbal and imagery systems, reducing cognitive load, and aiding comprehension and recall. Despite the promise these theories hold, research primarily focuses on tertiary and secondary learners, leaving a gap for investigation with middle school beginners, particularly in contexts like Morocco. This study aims to fill these gaps.

Methodology

This study employs a pre-test post-test experimental design involving two groups: experimental (captioned videos) and control (uncaptioned videos). Quantitative data analysis through SPSS t-tests and Covariate analysis will compare pre-test and post-test scores between the groups. Drawing on positivism, emphasizing empirical evidence and rigorous methods (Strauss & Corbin, 1994; Plonsky et al., 2020), the study contributes to second language acquisition research.

Research Philosophy

The study embraces a positivist approach, valuing empirical evidence and objective measurement. It mirrors previous research that employed positivism in SLA studies, emphasizing the use of quantitative methods (Meara, 1996; Horst et al., 1998). The aim is to objectively measure vocabulary learning using reliable tests and random sampling methods (Teng, 2020).

Population and Participants

The research involved 9th-grade Moroccan EFL students, with a sample of 60 evenly distributed across control and experimental groups. Participants shared similar English proficiency levels and were beginners in their language-learning journey (Bensalem, 2018). Similar sample sizes have been used in prior studies for vocabulary learning via videos (Vander Plank, 2010; Elgort, 2010).

Research Approach, Design, and Procedure

The quantitative approach used a pre-test post-test experimental design, randomly assigning participants to control and experimental groups. The true experimental design ensured causal relationships and control over variables (Hatch & Farhady, 1981; Kinory, 1979). Videos were shown in a multimedia-equipped classroom, with captions added using VEED.IO.

Instruments and Target Vocabulary

Video Selection

Three short, theme-relevant videos were chosen from YouTube, aligning with students' proficiency and unit content. Previous studies emphasized thematic relevance and linguistic material in video selection (Garza, 1996).

Target Words Selection

Thirty words, reflecting key terms from the videos, were narrowed down to 20 based on pilot study results, considering students' performance (Bensalem, 2018). The selection focused on word relevance, thematic connection, and ease of learning for beginners.

Treatment Procedure

The treatment spanned three weeks, involving multiple phases, where both groups undertook pre-tests, watched videos, and engaged in post-tests. The treatment involved students' repeated exposure to the videos, designed to reinforce vocabulary retention.

Pre-test and Post-test Design

The tests, administered in two phases, aimed to assess word form and meaning recognition. Prior validation ensured the tests' reliability and consistency (Cortina, 1993). Tests were corrected by an external teacher to mitigate bias.

Data Analysis

IBM SPSS 22 facilitated descriptive and inferential statistical analysis. Paired samples t-tests and ANCOVA were employed to compare vocabulary gains within and between groups, accounting for prior knowledge as a covariate (M. F. Teng, 2020; Pam & Karimi, 2016; Peters & Webb, 2018).

Ethical Considerations

The research prioritized voluntary participation and informed consent from participants and administrative staff, ensuring no influence on course grades. The procedures were collaborative and transparent throughout the study.

Results

In this chapter, the results of the study on the efficacy of captioned videos in vocabulary learning are thoroughly explored. The analysis involves within-group and between-group comparisons. Before conducting statistical tests, reliability, normality, and other assumptions were validated.

Key Findings:

The reliability tests showcased strong consistency in word recognition tests (Cronbach's Alpha: 0.895 for word written form, 0.919 for word meaning), aligning with earlier studies, and ensuring robust data collection (Cortina, 1993). Additionally, all test scores demonstrated normal distribution ($p > 0.05$) as confirmed by the Shapiro-Wilk test in both control and experimental groups, fulfilling essential requirements for statistical analyses. This laid the foundation for a comprehensive within-group analysis.

Within-groups analysis

Control Group:

Table 1 Paired Samples Test

		<i>Paired Differences</i>							
			<i>Std.</i>	<i>Std. Error</i>	<i>95% Confidence Interval of the Difference</i>		<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
	<i>Mean</i>	<i>Deviation</i>	<i>Mean</i>	<i>Lower</i>	<i>Upper</i>				
Pair 1	pretestA	- ,26667	1,77984	,32495	-,93127	,39794	-,821	29	,419
	post_testA								

Pair 2	Pretest B	post_testB	-,73333	2,08332	,38036	-1,51126	,04459	-1,928	29	,064
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No statistically significant differences were found between pre-tests and post-tests for word written form and meaning recognition.

Despite mean score increases, the differences were not significant ($p > 0.05$).

Experimental Group:

Table 2 Paired Samples Test

		<i>Paired Differences</i>		<i>95% Confidence Interval of the Difference</i>		<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	
		<i>Mean</i>	<i>Std. Deviation</i>	<i>Std. Error Mean</i>	<i>Difference</i>				<i>Lower</i>
Pair 1	pretestA post_testA	-2,50000	1,97833	,36119	-3,23872	-1,76128	-6,922	29	,000
Pair 2	pretestB post_testB	-,90000	1,80707	,32993	-1,57477	-,22523	-2,728	29	,011

Significant improvements were observed between pre-tests and post-tests for both word-written form and meaning recognition ($p < 0.05$).

Participants showed substantial progress in vocabulary learning after watching captioned videos.

The control group, exposed to uncaptioned videos, didn't show significant vocabulary gains.

In contrast, the experimental group, exposed to captioned videos, demonstrated significant improvements in vocabulary learning.

ANCOVA Analysis:

The section focused on a comparison between two groups using Analysis of Covariance (ANCOVA) to assess post-test scores while controlling for pre-tests. Assumptions like Homogeneity of Regression and Variance were checked.

Table 3 Tests of Between-Subjects Effects of Word Form Recognition

Dependent Variable: post_testA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Squared	Eta
Corrected Model	357,213 ^a	2	178,607	52,826	,000	,650	
Intercept	42,919	1	42,919	12,694	,001	,182	
word_form_pretest	342,213	1	342,213	101,215	,000	,640	
group	59,304	1	59,304	17,540	,000	,235	
Error	192,720	57	3,381				
Total	7334,000	60					
Corrected Total	549,933	59					

For word written form recognition, the groups showed no significant difference in regression slopes or variance, but a significant difference in post-test scores emerged ($p = 0.000$), indicating the experimental group outperformed the control.

Table 4 Tests of Between-Subjects Effects of Word Meaning Recognition

Dependent Variable: post-test

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	321,036 ^a	2	160,518	46,160	,000	,618
Intercept	37,111	1	37,111	10,672	,002	,158
word_meaning pre-test	317,286	1	317,286	91,241	,000	,615
group	,837	1	,837	,241	,626	,004
Error	198,214	57	3,477			
Total	10273,000	60				
Corrected Total	519,250	59				

For word meaning recognition, groups had consistent regression slopes and variance, with no significant difference in post-test scores ($p = 0.626$), suggesting the intervention had no notable impact on word meaning recognition.

The results demonstrated a significant effect on word written form recognition but lacked impact on word meaning recognition.

Discussion

This experimental study aimed to investigate the effect of captioned videos on incidental vocabulary learning among Moroccan EFL middle school learners at Moussa Ben Nossair High School. Three research questions were formulated to guide the investigation. Research question 1 sought to examine the effect of captioned videos on participants' ability to recognize the written form of words. Research question 2 was set to investigate the effect of captioned videos on participants' ability to recognize the meaning of words. Research question 3 was formulated to investigate the differences in vocabulary test scores between participants of the experimental group who were exposed to captioned videos and those of the control group who were exposed to uncaptioned videos. Corresponding hypotheses were also set to provide specific predictions concerning the outcomes of this study. In this discussion, the findings of the present study presented in the previous chapter are accounted for in light of this study's questions and hypotheses as well as the findings of previous studies discussed in the review of literature.

Research Question 1

Does the use of captioned videos improve participants' ability to recognize the written form of words that appear in the captioned videos?

Hypothesis 1 (H1): Participants who are exposed to captioned videos will outperform those exposed to uncaptioned videos in the word written form recognition post-test.

The first research hypothesis was supported by the findings of the study as there was a statistically significant difference between the word written form recognition pre-test and post-test scores within the experimental group. This suggests that exposure to captioned videos had a positive effect on participants' ability to recognize the written form of words. However, no statistically significant difference was found

between the pre-test and post-test scores for word-written form recognition within the control group (those exposed to uncaptioned videos). This indicates that the use of captioned videos did not enhance participants' recognition of the written form of words of the control group.

Research Question 2

Does the use of captioned videos improve participants' ability to recognize the meaning of words that appear in the captioned videos?

Hypothesis 2 (H2): Participants who are exposed to captioned videos will outperform those exposed to uncaptioned videos in the word meaning recognition post-test.

The second hypothesis was supported by the findings of the present study since there was a statistically significant difference between the word meaning recognition pre-test and post-test scores within the experimental group. This implies that exposure to captioned videos had a positive effect on participants' ability to recognize the meaning of words that appeared in the captions of the video. In contrast, no significant difference was found between the pre-test and post-test scores for word meaning recognition in the control group. This suggests that while the use of captioned videos improved word meaning recognition within the experimental group who watched captioned videos, it did not show benefits for word meaning recognition within the control group. Therefore, it can be concluded that watching captioned videos played a role in learning the meaning of the word meaning. Yet, to ensure that the differences between the means of the control group and the experimental group were due to treatment or to the participants' prior knowledge, the analysis of covariance was conducted.

Research question 3

Are there any significant differences in vocabulary test scores between participants exposed to captioned videos and those exposed to uncaptioned videos?

The Test of Between Subjects Effects revealed a statistically significant difference between the control group and experimental group in the word written form recognition test when controlling for the pre-test which represents the participants' prior knowledge. These findings provided the answer to research question 3. This means that participants exposed to captioned videos in the experimental group had statistically significantly higher scores in word-written form recognition compared to those exposed to uncaptioned videos in the control group. Nevertheless, the study did not find any statistically significant difference between the control group and experimental group in the word meaning recognition post-test when controlling for the pre-test. This indicates that while the use of captioned videos had a positive effect on enhancing participants' recognition of the written form of words, it did not necessarily influence the learning of their meanings.

Overall, the findings of the present study showed that captioned videos can effectively improve learners' ability to recognize the written form of words. The visual support provided by captions, as the Dual Coding Theory previously discussed explains, plays an important role in facilitating word recognition, enabling learners to connect the written forms with the spoken forms of words. These findings align with previous research in highlighting the positive effect of captioned or subtitled videos in promoting incidental vocabulary learning, particularly the word written form recognition, such as Neuman & Koskinen's (1992) study which found a positive impact of captions on enhancing written form recognition of words after watching captioned videos on television. Similarly, the results align with Montero Perez et al.'s (2014) findings whose study on Flemish high-intermediate learners of French showed that the participants in the

captioned group significantly outperformed the participants in the uncaptioned group on word written form recognition tests. In addition, the findings partially support previous studies that revealed clear incidental vocabulary learning as a result of the participants' exposure to different captioned authentic videos such as (Rodgers, 2013; BavaHarji et al., 2014; Gorjian, 2014; Hosogoshi, 2016; Jelani & Boers, 2018; Peters & Webb, 2018; Pujadas & Muñoz, 2019). These studies revealed that exposure to captioned videos has a positive impact on incidental learning of word written form of the vocabulary incorporated in the video captions.

Conversely, the study found no significant impact of captioned videos on word meaning recognition. Though exposure to captioned videos showed some improvement in participants' ability to recognize the meaning of some words, there was no statistically significant difference between the control group and the experimental group in meaning recognition tests. These findings align with previous studies that did not find any conclusive evidence about the relationship between watching captioned videos and incidental vocabulary learning such as Bensalem (2018) who did not find any significant difference between the full captioned group, the keyword captioned group and the no captioned group in the meaning recall test, and other studies such as (Birulés-Muntané & Soto-Faraco, 2016; Peters & Webb, 2018; Sinyashina, 2020). This implies that the progress made by the participants in the word meaning recognition post-test might be attributed to other factors but not necessarily to the captioned videos. Therefore, this study recommends that additional studies should be conducted for a better understanding of the impact of captioned videos on the recognition of word meanings.

Drawing on the theoretical frameworks discussed in Chapter Two, the findings of the study demonstrated the impact of captioned videos on the incidental learning of vocabulary. As the Dual Coding Theory posits, combining the visual information, represented in the visual support through captions, and the verbal information helps learners make the connection between written onscreen texts and their spoken forms leading to incidental learning of word written forms. Furthermore, the external support that the captions provide may play a crucial role in decreasing the amount of cognitive load. Thus, the learners focus on processing the new word forms and meanings. This way, the findings of the present study support the principles of the Working Memory Theory and the Cognitive Load Theory. Finally, the use of captioned videos as a pedagogical instrument can be considered a multimedia approach that simultaneously presents visual and verbal input to facilitate the process of vocabulary recognition and understanding.

In conclusion, the findings of this study shed light on the potential of captioned videos as a valuable tool for enhancing incidental vocabulary learning among Moroccan EFL middle school learners. The study supports the use of captioned videos for improving word written form recognition, while it highlights the need for further research on the effectiveness of such tools in enhancing word meaning recognition in the context of Moroccan middle school.

Pedagogical Implications

The findings of the current research have provided empirical evidence supporting the positive effect of captioned videos as a means of instruction on incidental vocabulary learning, especially on word written form recognition as one of the important aspects of word knowledge. The results emphasized the potential of captioned videos as an effective pedagogical tool for foreign language instructors to promote incidental vocabulary learning among Moroccan EFL middle school learners. However, it is important to take into consideration the effects of some extraneous factors such as learners' language proficiency level, prior knowledge of vocabulary, motivation, aptitude, and attitude; to mention but a few, on the effectiveness of

captioned videos in incidental language learning in general and incidental vocabulary learning in particular. Therefore, EFL middle school teachers are highly recommended to implement captioned videos in their classes to help students incidentally learn vocabulary to enrich their lexical repertoire.

As the findings of the current study provided empirical evidence for the effectiveness of captioned videos in promoting student's incidental vocabulary learning, especially the word written form aspect of word knowledge, it is highly recommended to incorporate such technique in Moroccan EFL syllabuses to help students learn new vocabulary.

Recommendations

To better understand the implications of the findings of the present study, more studies should be conducted to explore the long-term effects of captioned videos on incidental vocabulary learning. It is also recommended that more research should investigate some instructional methods that can maximize the benefits of using captioned videos for word meaning recognition. Moreover, more studies are required on the effect of captioned videos on incidental learning of other aspects of word knowledge such as use, collocations, register, and other aspects especially in the Moroccan middle school context.

Limitations of the Study

The sample of this study was 60 participants. This number looks very small for generalizing the findings of this study. However, using the random sampling method in the selection of the participants and in their recruitment in the control group or the experimental group is reported in the literature as an effective way to compensate for this potential limitation. Therefore, the current study suggests further investigations in the same context with a great number of participants to get more reliable findings.

Another limitation is that the instruments used to collect data included a limited number of words to measure the effect of captioned videos on incidental vocabulary learning. To address this potential limitation, the researcher pilot-tested the instruments to ensure their reliability and validity.

The number of videos and the limited time of intervention, due to the participants' availability, might be considered as one of the limitations of this study. Therefore, further longitudinal studies are recommended to explore the effectiveness of captioned videos in vocabulary learning in the context of middle schools.

The presence of intervening variables may affect the outcome of the study. Yet, the use of a control group and random assignment of the participants besides the administration of pretests would ensure that any differences between the groups are due to the treatment and not to other factors.

Conclusion

The primary focus of this study was to evaluate the efficacy of captioned videos in fostering incidental vocabulary learning among Moroccan EFL middle school learners, particularly in word-written form and meaning. While various studies have shown positive impacts of such videos on vocabulary learning, the quantitative analysis in this experimental study revealed no significant differences in pre-test and post-test scores for word form and meaning recognition within the control group. However, within the experimental group, a notable improvement in word form recognition and a significant difference in word meaning recognition were observed, indicating that exposure to captioned videos positively influences learners' abilities in recognizing written forms and, to a lesser extent, meanings of words. Notably, the between-group analysis substantiated enhanced word form recognition in the experimental group but failed to demonstrate significant differences in word meaning recognition. These findings, while aligned with

studies supporting captioned videos' efficacy in word written form learning, contrasted with those indicating effectiveness in word meaning learning, as no empirical evidence supporting this aspect was found. Despite limitations affecting generalization, this study adds empirical weight to the effectiveness of captioned videos in enhancing word-written form learning, suggesting their integration into language syllabi for vocabulary acquisition. Moreover, it advocates for longitudinal studies exploring captioned videos' impact on various facets of word knowledge among Moroccan EFL middle school learners.

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