The Relationship between the Ambiguity Tolerance and Incidental Vocabulary Acquisition of Advanced EFL Learners through the TED-Talk Application

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Abstract

L2 learners develop a great part of their vocabulary by incidental means through exposure to words in informative contexts such as reading and listening. It is also assumed that the increasing familiarity of learners with many forms of information technology devices may play a significant role in contributing to enriching their word repertoire. The TED-Talk application can function as a great source of audiovisual language input exposing learners to new words in interesting, exciting, and authentic contexts. However, an L2 environment can appear ambiguous to some learners since the lexical, grammatical, cultural, and phonological cues existing there may be unfamiliar to them. Therefore, this study aimed to investigate the relationship between ambiguity tolerance and incidental vocabulary acquisition using the TED-Talk application. The participants consisted of 33 advanced EFL adult learners whose ambiguity tolerance levels were measured both at the outset and at the end of the study by means of two questionnaires. They were exposed to several new words through four TED-Talk videos over a 16-session treatment period. At the end of the study, the results of two paired samples t-tests indicated that the differences between the means of the pre- and post-administrations of the questionnaires were not significant. Moreover, the researchers found no significant relationship between the participants' AT levels and vocabulary achievement scores. However, the results of four paired samples t-tests revealed that the vocabulary knowledge of the learners had improved significantly at the end of the treatment.

1. Introduction

Second language vocabulary learning has gained great research interest during the past decades, and many researchers advocate that incidental vocabulary learning is a significant aspect of L2 acquisition [1]. However, only a handful of studies have been conducted in this regard in the context of extensive listening comparing to those in extensive reading [2 & 3]. Thanks to technological developments, rich and authentic audiovisual materials have become highly accessible to language learners [4]. In fact, the application of multimedia may make the teaching of vocabulary more absorbing and the retrieval of vocabulary knowledge easier [5]. Moreover, in FLL contexts, ambiguity tolerance is considered to be one of the cognitive variables which is likely to hinder or facilitate language learning. However, if it is not managed reasonably, it may trigger a high level of stress in L2 learners and affect L2 learning negatively [6].

2. Incidental Vocabulary Learning

Incidental learning occurs as a result of using language with no particular intention to learn a particular linguistic element [7], and intentional learning occurs when there is a particular intention to do so [8]. Although the advantage of intentional learning through explicit teaching is undeniable, it cannot account for the huge number of words that learners need to know. Therefore, the role of incidental vocabulary learning from written and spoken input needs to be highlighted [9].

3. Ambiguity Tolerance

Ambiguity tolerance (AT) refers to the degree to which one is cognitively willing to tolerate ideas and propositions that run counter to their own belief system or structure of knowledge [10]. There is a great deal of uncertainty and a considerable amount of ambiguity in EFL contexts [11]; therefore, learners might experience some problems with deciphering meaning because of insufficient linguistic cues, [12]. This ambiguity might make FL learning exciting for some learners and extremely frustrating for others. Thus its potential pivotal role in different aspects of language learning (including vocabulary acquisition) and learners' beliefs cannot be ignored [13].

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4. Dual Coding Theory (DCT)

According to DCT, cognition entails the activities of two distinct qualitatively mental verbal and nonverbal codes, with the latter specialized for dealing with nonlinguistic objects, events, and situations such as knowledge of words, and the former for processing language in both writing and speaking [14]. Although separate, these two systems are interconnected and can function in parallel, independently, or via their interconnections. The primary cognitive form of nonverbal representation is mental imagery. All knowledge, meaning, and memory are described by representation and processing within and between the two codes which include knowledge of words and their meanings. DCT principles can contribute to incidental vocabulary learning through multimedia. This theory implies that facing and using words in different contexts establishes a rich set of verbal and nonverbal connections [15].

5. Cognitive Theory of Multimedia Learning (CTLM)

Based on CTLM, learning happens when learners build mental representations from words and pictures. This theory is based on three assumptions: dual-channel (working memory has auditory and visual channels), limited capacity (each subsystem of working memory has a limited capacity based on cognitive load), and active processing (deep learning hinges on students' cognitive processing when they heed the relevant material, organize it into a coherent mental structure and integrate it with their existing knowledge) [16]. In the multimedia theory, it is believed that presenting words and pictures together leads to deeper learning and better understanding (of words) since learners will be actively involved in the process of learning. Some of the multimedia principles which are directly related to this study include the following: 1) redundancy principle (presenting pictures and spoken words rather than pictures, spoken words, and on-screen text; 2) temporal contiguity (presenting corresponding graphics and words simultaneously); 3) segmenting principle (breaking a continuous lesson into learner-paced parts), and 4) pre-training principle (providing pre-training on the names, locations, and characteristics of key concepts) [16].

5. Method

5.1 Research Question

Given the purposes of this study, the following questions were raised:
1. Is there any relationship between AT and incidental vocabulary acquisition of Iranian advanced EFL learners through the TED-Talk application?
2. To what extent does the use of TED-Talk application affect L2 learners' incidental vocabulary learning?

5.2 Participants

The participants were 33 female advanced students in an English institute in Tehran.

5.3 Instrumentation

The following instruments were used in order to collect the required data:
   a. A 69-item FCE test
   b. Two AT questionnaires [17 &18]
   c. Four MC vocabulary pre-tests
   d. Five MC vocabulary post-tests

5.4 Materials

The following were used for incidental vocabulary instruction:
   a. The TED-Talk application
   b. Four TED-Talk videos
   c. Four Lists of questions, each for one of the TED-Talks
   d. Four video transcripts

5.5 Procedure

Initially, the two AT questionnaires were given to all the participants and their responses were scored. During the treatment period, the participants were exposed to new words through four TED-Talk videos. Before each video, they took a vocabulary pre-test checking their knowledge of some of the words therein. Before the first video exposure, there was some brainstorming regarding the topic of

that video in the question-and-answer format. Then they watched the video. Before the second exposure, the students were given a list of questions to discuss in pairs or groups for further comprehension. Next, the video transcript was given to the students for a third exposure; they listened while having the transcript in hand. Later they were assigned to give presentations on that TED-talk during the upcoming two sessions. Finally, they took a teacher-made MC vocabulary post-test regarding the words of the watched video. This procedure was followed for the other three videos. At the end of the course, they took one delayed post-test including 40 items selected randomly from among the 98 words which had appeared on the pre-tests. The two questionnaires were administered for a second time after the treatment to check the potential changes in their AT levels.

6. Data Analysis and Results
Initially, four paired samples t-tests were run to compare the means of the learners' vocabulary pre- and post-tests scores (Table 1). The results indicated that all the differences were statistically significant at the 0.01 level, testifying to the students' progress in terms of vocabulary knowledge at the end of the course.

Table1. Paired Samples T-test of Vocabulary Pre and Post-Test

TED-Talks	Pretest Mean	Posttest Mean	T	Df	Sig(2-tailed)	Mean difference	Std. Deviation	Std. Error Mean
1	1.58	15.97	18.727	32	0.000**	14.394	4.415	0.769
2	1.03	14.45	14.509	32	0.000**	13.424	5.315	0.925
3	1.36	14.36	18.316	32	0.000**	13.000	4.077	0.710
4	1.00	14.45	15.754	32	0.000**	13.455	4.906	0.854

The Pearson Product Moment Formula was used to compute the correlation coefficients between the learners' final scores on the questionnaires and their delayed post-test scores (Table 2). Surprisingly enough, no significant correlations were found between them.

Table 2. Correlations of Questionnaires and 40-Item Vocabulary Post-Test

		Q1 Pretest	Q1 Posttest	Q2 Pretest	Q2 Posttest
40-item Vocabulary Post-Test	**Pearson Correlation**	-0.076	-0.131	0.131	0.065
	Sig. (2-tailed)	0.673	0.466	0.475	0.722
	N	33	33	32	32

In addition, two paired samples t-tests were used to check the change in the learners' AT after the treatment. With t (32) = 1.028, p = 0.312 (two-tailed) for questionnaire 1, and t (31) = 1.597, p = 0.120 (two-tailed) for questionnaire 2, it was concluded that the differences between the means of the pre- and post-administrations of the questionnaires were not significant.

Later four K -means cluster analyses were conducted to divide the learners into low, mid, and high AT groups. Then the Pearson Product Moment Formula was used to calculate the correlation between different levels of AT and incidental vocabulary learning. Based on the results, the researchers failed to find any significant relationship between the two variables. .

7. Conclusion
In the present study, the learners significantly improved their vocabulary knowledge through using multimedia. This finding is in line with CTLM's claim that learners try to make meaningful connections between words and pictures in order to learn more deeply than when they learn with words or pictures alone [16]. The TED-Talk application seemed to have made a great contribution to this process in this research. It not only helped the students to push the borderlines of their word knowledge further but also proved to have provided a very interesting context for vocabulary learning. As indicated by the participants themselves, they enjoyed watching the videos particularly because of the variety and vividness they added to the normal routines of the class. Some researchers have found a positive correlation between AT and several variables such as communicative competence, language proficiency, learning strategies, reading, etc. However, no significant relationship was found between AT and incidental vocabulary acquisition in this study. Apparently, the interaction of several factors is required for incidental vocabulary learning to occur, and AT as a psychological trait, per se, cannot justify the occurrence or non-occurrence of vocabulary learning.

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