The Influence of Autonomy on Iranian EFL Learners' Vocabulary Podcasting Tasks, Gain and Retention

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Abstract
The use of podcasts in learning has been supported by distance education theories that deal with the role of interaction as well as communication in improving teaching and learning. New technologies such as podcasts can have influential learner support in distance education and address learner cognitive requirements by incorporating communication within study resources. The present study investigated the effects of learners' autonomy on their vocabulary podcasting tasks, gain and retention in an E-learning context. Two separate one-way multivariate analysis of variance (one-way MANOVA) were run in order to answer the questions. The results revealed that autonomy levels significantly affected Iranian EFL learners' vocabulary gain and retention. The participants who had higher autonomy levels had higher levels of vocabulary gain as well as retention applying audio podcasts plus still pictures and audio podcasts plus animated pictures. As the effects of attitude and autonomy on language learning are unquestionable, the present study can help teachers and learners have better considerations of attitude and autonomy in an E-learning context.

Keywords: autonomy, distance education, vocabulary gain, vocabulary podcasting tasks, vocabulary retention

Introduction

The advent of the Internet has offered new ways of education for educators in order to expand collaboration. The Internet provides tools to form, distribute and share knowledge among educators. In addition, educational resources such as articles, books as well as images can be digitized and distributed via the Internet. The usefulness and flexibility of social software that enables groups of people to collaborate via the Internet have added dimensions to online learning (Beldarrain, 2006). Podcasting is one of the technologies that has converted traditional audio broadcast into portable, digital media (Putman & Kingsley, 2009).

Podcasts motivate learners outside the classrooms and learners' positive attitude was indicated by several research (Ducate & Lomicka, 2009; O'Bryan & Hegelheimer, 2007). Recently, podcasts have been efficiently incorporated in teaching and learning languages as technological tools. Many studies on podcasting (Ashton-Hay & Brookes, 2007; Istanto, 2011; Li 2010; Rosell-Aguilar, 2007) have claimed that the incorporation of podcasts in language learning can improve learners' academic performances, autonomy as well as learning. Moreover, vocabulary learning is a crucial feature of learning a second or foreign language. It is

conspicuous that learners' lack of lexical knowledge impedes language learning. Furthermore, although many studies have been conducted on learners' autonomy (Dafei, 2007; Levesque, Zuehlke, Stanek & Ryan, 2004), few studies have been done on learners' autonomy regarding using podcasts in distance vocabulary instruction.

Literature Review

Distance Language Education

Education became important social concerns in the latter half of the nineteenth century and distance education is a substitute for face-to-face education (Holmberg, 1995). Efforts have been made to provide accurate definition of distance education or E-learning as it grows and becomes more complex. Moore (1993) believes that it "is not simply a geographical separation of learners and teachers, but, more importantly, is a pedagogical concept" which describes "the universe of teacher-learner relationships that exist when learners and instructors are separated by space and/or by time" (p. 22). As Moore (1993) believes, the distinctive teaching and learning strategies as well as techniques used by teachers and learners can be identified as unique characteristics of educational practices since the separation of teachers and learners is considerably significant. He proposes six processes that must be organized in each E-learning or distance education program. The processes include "presentation; support of the learner's motivation; stimulate analysis and criticism; give advice and counsel; arrange practice, application, testing and evaluation; and arrange for student creation of knowledge" (pp. 28-30).

Collaborative technologies such as blogs, wikis, podcasts as well as social software affect the role of instructor. The instructor is more of a "partner in learning" than a facilitator (Beldarrain, 2006). Moreover, it is the responsibility of the instructor to support collaboration and participate in the exchange of knowledge as well as reflection in distance education.

Podcasts

English Oxford Living Dictionaries (2017) define podcast as "a digital audio file made available on the Internet for downloading to a computer or mobile device, typically available as a series, new instalments of which can be received by subscribers automatically". The word podcast is a combination of words 'iPod' and 'broadcast' (Istanto, 2011). However, Podcasts can be played not just by iPods but also by MP3 players and other types of media players on the computers and mobile devices. Podcasts have been taken into account as tools to be used in education specially distance education since learners can download podcasts anytime and anywhere. Podcasting signifies an innovative, exciting as well as different learning model in academic settings. Materials such as lectures, conference reports and research manuscripts can be recorded as audio and video files and transported to subscribing users. Minimum efforts and skills are needed for learners to download the files and use them in order to gain knowledge and information.

Podcasts assist distance education learners in accessing lessons, tasks and assignments in the form of audio or video. Evans (2008) believes that learners are more interested in learning in the form of podcasts than in the form of textbooks or traditionally conducted lectures since they are more familiar with technologies especially podcasts. However, podcasts have some disadvantages. Lee and Chan (2007) pointed out that "The shortcomings of audio appear to be in the area of providing complex and/or detailed information that needs to be heavily processed, logically deconstructed, committed to memory, or otherwise requires substantial concentration" (p. 90). Moreover, Scutter, Stupans, Sawyer and King (2010) mentioned that students may disengage with the study resources while focusing on using podcasts.

Lee and Chan (2007) investigated the potential of utilizing complementary audio podcasts to decrease students' anxiety. The results showed that students' anxiety and feelings of isolation were reduced and their sense of inclusivity were increased. In addition, students believed that podcasts were effective in improving their understanding of the subject and providing backup of what they had learnt.

Evans (2008) examined the effectiveness of mobile learning in the form of podcasting to teach undergraduate students in Higher Education. The results revealed that students agree that podcasts are more influential than their textbooks and notes. Moreover, they maintained that they were more interested in learning in the form of podcasts than a traditional textbook or lecture.

Sanjana (2014) examined the effect of podcasts in developing listening skills of students of the higher secondary level in Bangladeshi context. The findings showed that the students were interested in using podcasts in both classroom and outside of it in order to learn English better. Moreover, they enjoyed listening to podcasts in their mobile phones even in their leisure time that showed they were autonomous in learning English.

Nozari and Siaman (2015) considered the effect of using podcast multimedia on high school students' learning and motivational achievement of Arabic. The findings showed that podcast multimedia teaching system positively affected students' learning. However, no significant differences were found regarding motivation between traditional method and podcast multimedia system.

Vocabulary Knowledge

Different scholars (Nation & Chung, 2009; Richards, 1976; Schmitt, Schmitt & Clapham, 2001) have defined lexical knowledge in a number of ways. Richards (1976) offered eight assumptions that each learner must know for every single word. These assumptions include little development of syntax in adult life, knowing the degree of probability of encountering the word in speech or print, derivations of the word, limitations on the use of the word, syntactic behavior as well as semantic value of the word, the association between the word and other words in the language, and different meanings of the word.

However, Meara (2010) believes that these assumptions of vocabulary knowledge are not supportive. He proposes some reasons that Richards's (1976) approach to explaining vocabulary knowledge is impractical. First, Richards's (1976) framework is a pedagogic framework rather than a psycholinguistic one. Second, each of these eight assumptions makes complexity. Third, one of the defining characteristics of vocabularies is that they are typically large.

Yeh and Wang (2003) examined the use of three types of vocabulary annotations on vocabulary learning including text annotation only, text plus picture, and text plus picture and sound. Moreover, they wanted to consider whether learners with specific perceptual learning styles (auditory, visual-verbal, visual-nonverbal, and mixed preferences) benefited more from a particular type of vocabulary annotations. Text plus picture was reported to be the most influential type of vocabulary annotation and perceptual learning styles did not have considerable impact on the usefulness of vocabulary annotations.

Plass, Chun, Mayer and Leutner (2003) conducted a study regarding annotations. Learners received no annotations, verbal annotations, visual annotations or both verbal and visual annotations. Results showed that recall of word translations was worse for learners with low-verbal and low-spatial abilities when learners received visual annotations. However, there were no significant differences among students when they received verbal annotations. Moreover, learners who received visual annotations could not comprehend the text.

Lu (2008) examined the effectiveness of SMS vocabulary lessons on mobile phones. The findings revealed that although technology limitations, unfamiliar presentations as well as learning activities prevented students from reading SMS lessons, students had positive attitudes regarding learning vocabulary in mobile phones.

Rimrott (2010) considered the usefulness of annotations for vocabulary learning. Learners received a translation, an example sentence and one of five annotation clusters including picture and gloss, definition and gloss, picture and audio presentation, definition and audio, and picture, audio, floss and definition. Two posttests were administered. The immediate vocabulary posttest showed that annotation clusters including a picture were considerably influential for both abstract and concrete words. However, the delayed posttest revealed that all annotation clusters were equally influential.

Learner Autonomy

Many students use teaching materials and programs in order to "achieve goals of their own, in their own ways and under their own control" which can be defined as learner autonomy (Moore, 1993). While Cortes and Lujan (2005) define autonomy as "moving away from conventional and restrictive contexts and moving towards self-direction and self-regulation" (p. 134), Dikinson (1995) believes "autonomy can be seen as an attitude towards learning in which the learner is prepared to take, or does take, responsibility for his own learning" (p. 167).

The learners are given responsibility for making decisions about how to learn in autonomous distance language education (Doughty & Long, 2003) and researchers are attempted to know which strategies learners utilize in distance education, how they use them and why they use different strategies in different learning situations. However, the key concern, as Rivera-Mills and Plonsky (2007) point out, is to use strategies to increase learners' autonomy. Benson (2001) believes that learner autonomy includes learning management, cognitive process, and learning content. In other words, autonomous learners are expected to be self-managed to design, organize, and assess their learning with learning strategies. In addition, they are suggested to have metacognitive knowledge, pay attention to the material that are presented to them and have the right to make decisions regarding their learning.

Levesque et al. (2004) investigated learners' autonomy and competence in American and German settings. Based on the results, American learners were more competent than German learners. Moreover, German learners were more autonomous. Moreover, they concluded that positive informational feedbacks as well as perceived pressure were associated with competence and autonomy.

Investigating the relationship between learner autonomy and learners' English proficiency, Dafei (2007) conducted a study. The results indicated that English proficiency and learner autonomy were significantly correlated. Moreover, significant differences were found among learners' autonomy whenever significant differences were among learners' English proficiency.

Naseri and Motallebzadeh (2016) examined the impact of podcasts on Iranian upper-intermediate EFL learners' self-regulation ability as well as their perceptions toward using technology. The experimental group listened to podcast files and the control group listened to radio programs. Practices were done using cognitive as well as metacognitive strategies. The findings indicated learners' positive perceptions towards using podcasts in language learning. Moreover, the results showed that learners' self-regulation abilities were increased considerably.

Jafari and Chalak (2016) used a mixed method design in order to examine the role of WhatsApp in vocabulary learning improvement of Iranian junior high school EFL students. The

results showed that WhatsApp was considerably effective in learners' vocabulary learning. Moreover, no significant differences were found between male and female learners in vocabulary learning using WhatsApp.

Faramarzi, Elekaei and Heidari Tabrizi (2016) considered the relationship among critical thinking, lexical knowledge and autonomy of 114 Iranian EFL learners. It was reported that there was a significant as well as positive relationship between lexical knowledge and autonomy of learners. In addition, learners who were the most autonomous learners had the highest critical thinking ability level.

The purpose of the present study was to mainly focus on the effect of learners' autonomy on learners' vocabulary podcasting tasks, gain and retention in a process-oriented approach. Thus, the study was an attempt to answer the following questions:

Q1. Does autonomy significantly affect Iranian EFL learners' vocabulary gain applying audio podcasts plus still pictures and audio podcasts plus animated pictures in an E-learning context?

Q2. Does autonomy significantly affect Iranian EFL learners' vocabulary retention applying audio podcasts plus still pictures and audio podcasts plus animated pictures in an E-learning context?

Methodology

Design

The present study was an attempt to consider a pretest-posttest design to investigate the long-term effects of the treatment as the main part of the work in an E-learning project. The procedures include quantitative analysis. As it is not desirable to randomly assign treatments to participants individually, the quasi-experimental design was selected. Samples of the study were selected randomly for both control and experimental groups. An Oxford Placement Test developed by Allen (1992) was administered in order to homogenize the learners. Participants who achieve more than one standard deviation away from (above or below) the mean were excluded from the subsequent analyses and 180 learners were selected as the intermediate level learners.

Participants

The participants were selected from Iranian EFL learners (both male and female) learning English at Qazvin University of Medical sciences and Andisheh Nou Foreign Language Institute in Qazvin, Iran. A nonrandom purposive sampling was considered for the present study since this study concentrated on two groups of learners in an intermediate-level vocabulary proficiency and tested their improvement through the treatment period. Firstly, 280 learners were invited to the take part in the present study and take the proficiency test. An Oxford Placement Test was administered in order to homogenize the learners. Learners who achieved more than one standard deviation away from (above or below) the mean were excluded from the subsequent analyses and 180 learners were selected as the intermediate level learners. The learners' age was from 17 to 30. Their first language was Persian and they studied English as a foreign language.

Materials

Podcasting Tasks

A series of 120 audio podcasts plus still pictures as well as audio podcasts plus animated pictures were presented to the participants. The vocabularies were selected from *504 Absolutely Essential Words* that each EFL learner must learn. Twelve new words were presented to the participants during six days of the week and one test including multiple-choice tests and filling

the blanks assignments were given to the participants on the seventh days of the weeks. The participants were asked to complete the exercises and send them back. The incorporation of these tests supported learners in an online environment and made the current study distinct from previous studies.

Telegram Application

The network-based technology does offer advantages over the traditional classrooms in terms of ease and range of access to materials and interlocutors. However, the network-based technology is not without difficulty. For instance, the teacher who is the most reliable source of input and feedback and who can best make decisions is removed in many network-based teachings. Telegram is the world's fastest messaging application. It is free and secure. It delivers messages faster than any other application. Moreover, Telegram has no limits on the size of the media and chats. It keeps messages safe from hacker attacks. Telegram lets people access their messages from multiple devices. It also provides an innovative and exciting learning paradigm. Telegram has the potential to be embraced not only by consumers and academic users, but also societal entities such as communities. It allows people to integrate distinct sources of information into comprehensible schemas, capture and recall items or events that they would otherwise forget, enhance conversations by providing a way to exchange and share relevant information, and promote performing experiments and solving problems in the everyday world. Therefore, Telegram was implemented in the present study since the e-instructor was present and supported the participants by designing tests.

Instruments

In order to answer the research questions, the following instruments were used:

1) A proficiency test
2) An autonomy questionnaire
3) An immediate vocabulary posttest
4) A delayed vocabulary posttest

First, in order to homogenize the participants, Oxford Placement Test developed by Allen (1992) was administered at the outset of the study. The Oxford Placement Test is made up of two grammar and listening sections, each comprised of 100 questions. Then, Dafei's (2007) autonomy questionnaire that is on a five-point scale was presented to all participants in the telegram channel in order to obtain their beliefs about autonomy using a voting robot system. The questions were given to the participants on the main page of the channel and the participants' responses were simply received by tabs. An immediate vocabulary posttest in the form of multiple-choice was administered two weeks after the treatment in order to measure the participants' vocabulary gain via an E-learning program. The immediate vocabulary posttest was constructed by the researchers and it was pilot-tested to a similar group of participants to ascertain the reliability of the questionnaire. The internal consistency of the questionnaire was $\alpha = 0.89$. Furthermore, a delayed vocabulary posttest in the form of multiple-choice and equivalent to the immediate vocabulary posttest was given to the participants four weeks after the treatment to investigate the test-takers' vocabulary retention in an online environment. The delayed vocabulary posttest was constructed by the researchers and it was pilot-tested to a similar group of participants to establish the reliability of the questionnaire. The internal consistency of the questionnaire was $\alpha = 0.88$.

Data Collection Procedure

The following procedures were followed to attain the purpose of the current study. First, a general proficiency test was administered in order to make sure that there were no significant differences among the participants in terms of their proficiency level. The participants' scores on the general proficiency test were summarized. Moreover, the mean and the standard deviation were computed. Those who attained more than one standard deviation above or below the mean were excluded from others in order to take part in the treatment. In the second stage, a language learning autonomy questionnaire was sent to all participants in the telegram channel via @vote robot systems. The test-takers answered the questions by touching the tabs. Third, an immediate and delayed vocabulary posttest in the form of multiple-choice were administered two and four weeks after the treatment, respectively, in order to measure the participants' vocabulary gain and retention in an E-learning project. Finally, the obtained data were summarized, evaluated and prepared for further statistical analysis.

Data Analysis Procedure

The overall analysis was calculated by SPSS software, version 20. Two separate one-way multivariate analysis of variance (one-way MANOVA) were run in order to answer the questions number one and two which consider the effects of autonomy on Iranian EFL learners' vocabulary gain and retention applying audio podcasts plus still pictures and audio podcasts plus animated pictures) in an E-learning context.

Results

Results for the First Null Hypothesis

The First research question attempted to see whether autonomy significantly affects Iranian EFL learners' vocabulary gain applying audio podcasts plus still pictures and audio podcasts plus animated pictures in an E-learning context. To this end, participants were divided into three equal groups of high, medium and low levels of autonomy according to their scores on the autonomy questionnaire. To examine the effect of autonomy levels on vocabulary gain (audio podcasts plus still pictures and audio podcasts plus animated pictures), a one-way multivariate analysis of variance was run. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no violations noted.

Table 1 illustrates the results of the descriptive and test statistics. Based on table 1, the participants who had high autonomy level had the highest mean of vocabulary gain applying audio podcasts plus still pictures (Mean = 93.75), followed by the participants who had medium autonomy level (Mean = 75.83), and the participants who had low autonomy level (Mean = 59.35). Moreover, the participants who had high autonomy level had the highest mean of vocabulary gain applying audio podcasts plus animated pictures (Mean = 110.72), followed by the participants who had medium autonomy level (Mean = 98.98), and the participants who had low autonomy level (Mean = 87.43).

Table 1. *Descriptive and Test Statistics for Autonomy Levels and Vocabulary Gain (Audio Podcasts Plus Still pictures and Audio Podcasts Plus Animated Pictures)*

	Autonomy Level	Mean	Std. Deviation	N
Vocabulary Gain (Audio Podcasts Plus Still Pictures)	High	93.75	4.667	60
	Mid	75.83	5.983	60

	Low	59.35	4.452	60
	Total	76.31	14.965	180
Vocabulary Gain (Audio Podcasts Plus Animated Pictures)	High	110.72	2.981	60
	Mid	98.98	3.213	60
	Low	87.43	4.023	60
	Total	99.04	10.125	180

Table 2 shows that autonomy levels significantly affected Iranian EFL learners' vocabulary gain applying audio podcasts plus still pictures and audio podcasts plus animated pictures in an E-learning context, F (4, 352) = .000, p < .0005, Wilks' Lambda = .08, partial eta squared = .70.

Table 2. *Multivariate Tests for Autonomy and Vocabulary Gain Applying Audio Podcasts Plus Still Pictures and Audio Podcasts Plus Animated Pictures*

	Effect	Value	F	Hypothesis df	Error df	*p*	Partial Eta Squared
Autonomy Level	Wilks' Lambda	.087	211.153[a]	4.000	352.000	.000	.706

a. Exact statistic

Table 3 shows how dependent variables differ from the independent variables.

Table 3. *Tests of Between-Subject Effects for Autonomy and Vocabulary Gain Applying Audio Podcasts Plus Still Pictures and Audio Podcasts Plus Animated Pictures*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	*p*	Partial Eta Squared
Autonomy Level	Vocabulary Gain (Audio Podcasts Plus Still Pictures)	35521.344	2	17760.672	688.303	.000	.886
	Vocabulary Gain (Audio Podcasts Plus Animated Pictures)	16263.744	2	8131.872	689.373	.000	.886

Table 3 shows that autonomy level significantly affected Iranian EFL learners' vocabulary gain applying audio podcasts plus still pictures (F (2, 177) = 688.30; p < .0005; partial eta squared = .88) and audio podcasts plus animated pictures (F (2, 177) = 689.37; p < .0005; partial eta squared = .88) in an E-learning context.

Table 4 includes Tukey's HSD post-hoc tests. Based on table 4, mean scores of vocabulary gain applying audio podcasts plus still pictures show that there were statistically significant differences between high autonomy level and medium autonomy level (p < .0005), high autonomy level and low autonomy level (p < .0005), and medium autonomy level and low autonomy level (p < .0005). Moreover, mean scores of vocabulary gain applying audio podcasts plus animated pictures show that there were statistically significant differences between high autonomy level and medium autonomy level (p < .0005), high autonomy level and low autonomy level (p < .0005), and medium autonomy level and low autonomy level (p < .0005).

Table 4. *Post Hoc Multiple Comparisons of Autonomy Levels and Vocabulary Gain Applying Audio Podcasts Plus Still Pictures and Audio Podcasts Plus Animated Pictures*

Dependent Variable	(I) Autonomy Level	(J) Autonomy Level	Mean Difference (I-J)	Std. Error	*p*	95% Confidence Interval	
						Lower Bound	Upper Bound
Vocabulary Gain (Audio Podcasts Plus Still Pictures)	High	Mid	17.92*	.927	.000	15.72	20.11
	High	Low	34.40*	.927	.000	32.21	36.59
	Mid	Low	16.48*	.927	.000	14.29	18.68
Vocabulary Gain (Audio Podcasts Plus Animated Pictures)	High	Mid	11.73*	.627	.000	10.25	13.22
	High	Low	23.28*	.627	.000	21.80	24.77
	Mid	Low	11.55*	.627	.000	10.07	13.03

*. The mean difference is significant at the .05 level.

Figures 1 and 2 illustrate the differences between autonomy levels and vocabulary gain applying audio podcasts plus still pictures as well as autonomy levels and vocabulary gain applying audio podcasts plus animated pictures, respectively.

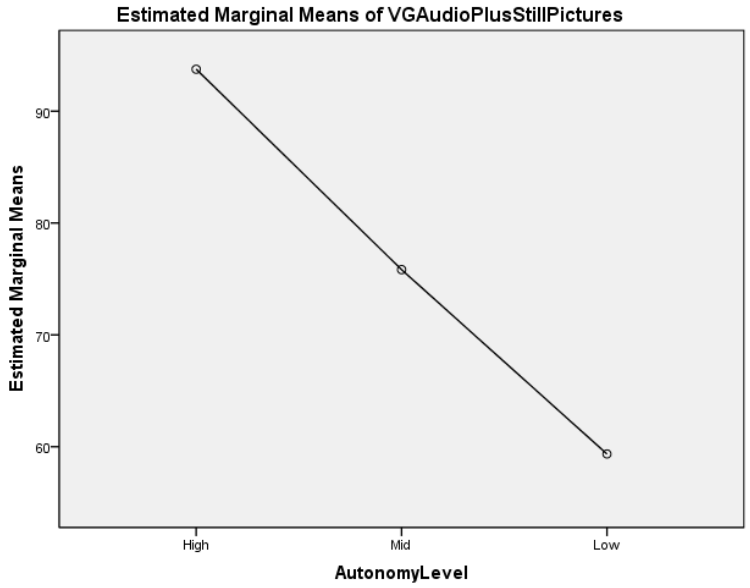

Figure 1. *Autonomy Level and Vocabulary Gain Applying Audio Podcasts Plus Still Pictures*

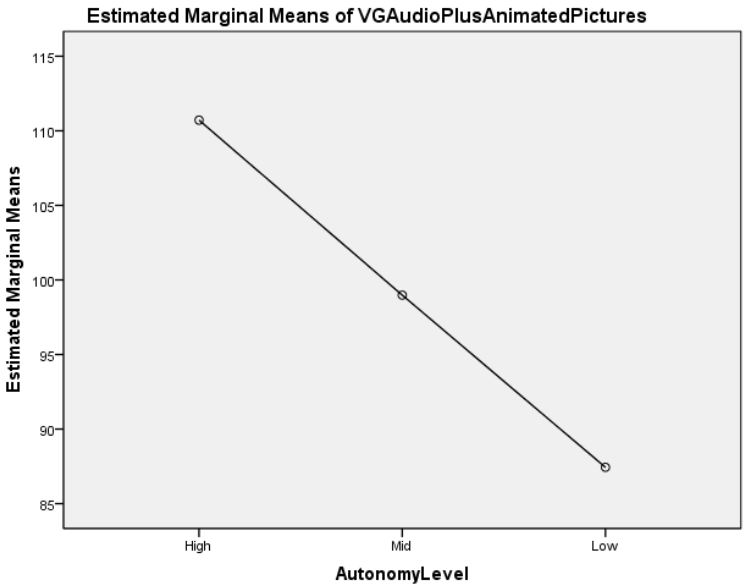

Figure 2. *Autonomy Level and Vocabulary Gain Applying Audio Podcasts Plus Animated Pictures*

Results for the Second Null Hypothesis

The second research question sought to see whether autonomy significantly affects Iranian EFL learners' vocabulary retention applying audio podcasts plus still pictures and audio podcasts plus animated pictures in an E-learning context. Therefore, participants were divided into three equal groups of high, medium and low levels of autonomy according to their scores on the autonomy questionnaire. A one-way multivariate analysis of variance was run. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no violations noted.

Table 5 shows the results of descriptive and test statistics. Based on table 5, the participants who had high autonomy level had the highest mean of vocabulary retention applying audio podcasts plus still pictures (Mean = 218.15), followed by the participants who had medium autonomy level (Mean = 63.03), and the participants who had low autonomy level (Mean = 45.03). Moreover, the participants who had high autonomy level had the highest mean of vocabulary gain applying animated pictures (Mean = 100.27), followed by the participants who had medium autonomy level (Mean = 89.45), and the participants who had low autonomy level (Mean = 77.63).

Table 5. *Descriptive and Test Statistics for Autonomy Levels and Vocabulary Retention (Audio Podcasts Plus Still pictures and Audio Podcasts Plus Animated Pictures)*

	Autonomy Level	Mean	Std. Deviation	N
Vocabulary Retention (Audio Podcasts Plus Still Pictures)	High	218.15	1032.043	60
	Mid	63.03	5.974	60
	Low	45.03	4.422	60
	Total	108.74	597.630	180
Vocabulary Retention (Audio	High	100.27	3.183	60

Podcasts Plus Animated Pictures)			Mid	89.45	2.902	60
			Low	77.63	4.341	60
			Total	89.12	9.911	180

Table 6 illustrates that autonomy level significantly affected Iranian EFL learners' vocabulary retention applying audio podcasts plus still pictures and audio podcasts plus animated pictures in an E-learning context, F (4, 352) = .000, p < .0005, Wilks' Lambda = .12, partial eta squared = .64.

Table 6. *Multivariate Tests for Autonomy and Vocabulary Retention Applying Audio Podcasts Plus Still Pictures and Audio Podcasts Plus Animated Pictures*

	Effect	Value	F	Hypothesis df	Error df	*p*	Partial Eta Squared
Autonomy Level	Wilks' Lambda	.125	160.869[a]	4.000	352.000	.000	.646

a. Exact statistic

Table 7 shows how dependent variables differ from the independent variables.

Table 7. *Tests of Between-Subjects Effects for Autonomy and Vocabulary Retention Applying Audio Podcasts Plus Still Pictures and Audio Podcasts Plus Animated Pictures*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	*p*	Partial Eta Squared
Autonomy Level	Vocabulary Retention (Audio Podcasts Plus Still Pictures)	1087091.211	2	543545.606	1.531	.219	.017
	Vocabulary Retention (Audio Podcasts Plus Animated Pictures)	15378.033	2	7689.017	616.789	.000	.875

It is obvious from table 7 that autonomy level significantly affected Iranian EFL learners' vocabulary retention applying audio podcasts plus still pictures (F (2, 177) = 1.53; p < .0005; partial eta squared = .01) in an E-learning context.

Table 8 includes Tukey's HSD post-hoc tests. Based on table 8, mean scores of vocabulary retention applying audio podcasts plus still pictures show that there were not statistically significant differences between high autonomy level and medium autonomy level (p = .33), high autonomy level and low autonomy level (p = .25), and medium autonomy level and low autonomy level (p = .98). However, mean scores of vocabulary retention applying audio podcasts plus animated pictures show that there were statistically significant differences between high autonomy level and medium autonomy level (p < .0005), high autonomy level and low autonomy level (p < .0005), and medium autonomy level and low autonomy level (p < .0005).

Table 8. *Post Hoc Multiple Comparisons of Autonomy Levels and Vocabulary Retention Applying Audio Podcasts Plus Still Pictures and Audio Podcasts Plus Animated Pictures*

(I)	(J)	Mean Differe	Std. Error	*P*	95% Confidence Interval

Dependent Variable	Autonomy Level	Autonomy Level	nce(I-J)			Lower Bound	Upper Bound
Vocabulary Retention (Audio Podcasts Plus Still Pictures)	High	Mid	155.12	108.790	.330	102.02	412.25
	High	Low	173.12	108.790	.252	84.02	430.25
	Mid	Low	18.00	108.790	.985	239.14	275.14
Vocabulary Retention (Audio Podcasts Plus Animated Pictures)	High	Mid	10.82*	.645	.000	9.29	12.34
	High	Low	22.63*	.645	.000	21.11	24.16
	Mid	Low	11.82*	.645	.000	10.29	13.34

*. The mean difference is significant at the .05 level.

Figures 3 and 4 illustrate the differences between autonomy levels and vocabulary retention applying audio podcasts plus still pictures as well as autonomy levels and vocabulary gain applying audio podcasts plus animated pictures, respectively.

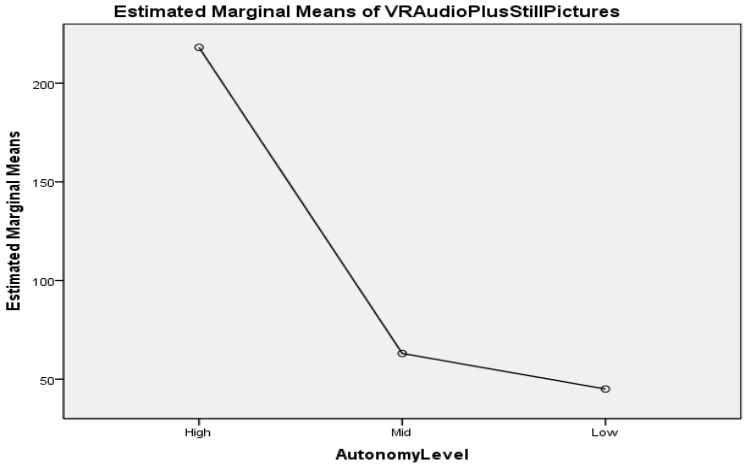

Figure 3. *Autonomy Level and Vocabulary Retention Applying Audio Podcasts Plus Still Pictures*

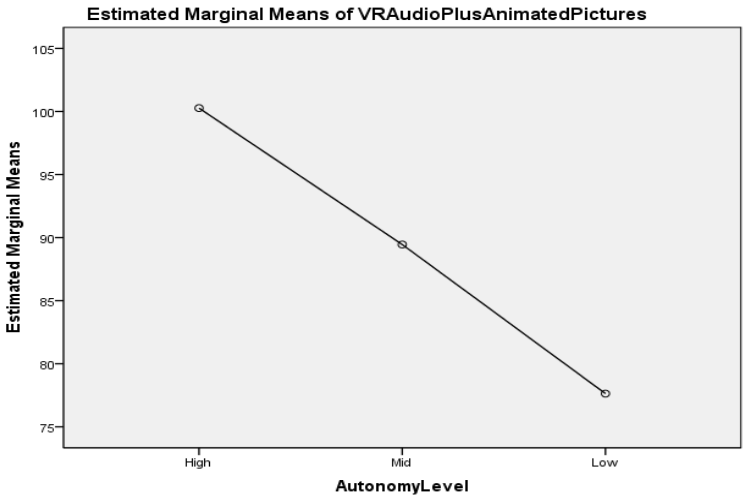

Figure 4. *Autonomy Level and Vocabulary Retention Applying Audio Podcasts Plus Animated Pictures*

Discussion

The research questions attempted to consider whether autonomy significantly affects Iranian EFL learners' vocabulary gain and retention applying audio podcasts plus still pictures and audio podcasts plus animated pictures in an E-learning context. The findings of this study was that autonomy levels significantly affected Iranian EFL learners' vocabulary gain as well as retention. The participants who had higher autonomy levels had higher levels of vocabulary gain as well as retention applying audio podcasts plus still pictures and audio podcasts plus animated pictures. These findings lead support to those of Levesque et al. (2004), who reported that German learners were more autonomous than American students. These results corroborate those of Sanjana (2014), who reported that the students enjoyed listening to podcasts in their mobile phones even in their leisure time that showed they were autonomous in learning English and those of Naseri and Motallebzadeh (2016), who showed that learners' self-regulation abilities were increased considerably by using podcasts.

The findings of the present study are also compatible with those of Faramarzi, Elekaei and Heidari Tabrizi (2016). They found that there was a significant and positive relationship between lexical knowledge and autonomy of learners. In addition, learners who were the most autonomous learners had the highest critical thinking ability level. However, the findings of this study contradict those of Nozari and Siaman (2015), who found no significant differences regarding motivation between traditional method and podcast multimedia system.

A number of factors could possibly account for these findings. One of the reasons may be that vocabularies in form of audio podcasts plus still as well as animated pictures were helpful because podcasts provided time-saving as well as easy-to-use technology for learners. Learners could receive the information instead of seeking them and they were faced new learning paradigm. Podcasts were not only easy to store and distribute, but also easy to share among the other academic parties. The other reason could be that the content and the clear native pronunciation of the podcasts attracted learners' attentions.

Conclusion

As Putman and Kingsley (2009) pointed out, "we have a rich history of research on vocabulary, but a limited one when it comes to podcasting (p. 105). This study examined autonomy of learners regarding distance vocabulary learning since there is little research regarding learners' autonomy. The research questions sought to examine the effects of autonomy on Iranian EFL learners' vocabulary gain and retention applying audio podcasts plus still pictures and audio podcasts plus animated pictures in an E-learning context. The results showed that autonomy levels significantly affected Iranian EFL learners' vocabulary gain as well as retention. The participants who had higher autonomy levels had higher levels of vocabulary gain as well as retention applying audio podcasts plus still pictures and audio podcasts plus animated pictures. Learners are familiar with the concept of learner autonomy. However, it is relatively difficult for them to apply it in practice. The present study showed that various tasks can assist learners in learning individually and autonomously.

The findings of the present study are not sufficient. Further research is needed. The focus of the present study was on intermediate EFL learners. The same study can be done with participants at other proficiency levels. Moreover, age and gender were not considered in this study. Therefore, interested researchers can consider these variables.

Littlemore (2001) believes that new technologies can help learners improve their autonomy. Therefore, learner autonomy is assumed to be significant since it is perceived as the goal of all progressive learning (Little, 2001). Learners must engage enthusiastically and take

responsibility for their own learning to make a productive learning experience. Distance learning will continue to grow and technology will continue to assist distance learners in using new tools in order to make learning environments that prepare them for solving problems by online collaboration. The future processes offer researchers, teachers and learners the chance to understand the design of Telegram and podcasting that users can enjoy as well as adapt with ease.

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