

# Promoting Second Language Learners' Vocabulary Learning Strategies: Can Autonomy and Critical Thinking Make a Contribution?

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## Abstract

Based on the findings of previous studies which highlight the role of vocabulary knowledge in English as a Foreign Language/English as a Second Language (EFL/ESL) learners' learning process, this study investigated the relationship among EFL learners' Critical Thinking (CT), Autonomy (AU), and choice of Vocabulary Learning Strategies (VLS). To fulfill the purpose of this study, 100 male and female undergraduate EFL learners, between the ages of 18 and 25 ( $M_{age} = 21$ ) were randomly selected. These participants, who were receiving formal instruction by means of English as the main language along with learners' first language, were asked to complete three questionnaires, estimating their CT, AU, and VLS. Analyzing the collected data by Pearson's product-moment correlation coefficient revealed significant relationships between participants' AU and CT, CT and VLS, and AU and VLS. Furthermore, a linear regression through the stepwise method revealed that between CT and AU, AU is the best predictor of VLS. The findings of this provide EFL teachers, EFL learners, and syllabus designers with insights into the nature of VLS and the way it can be promoted through other internal factors.

**Keywords:** critical thinking, individual factors, learning autonomy, vocabulary learning strategies

## 1. Introduction

Consistent with the notion that learning the first language is largely dependent on the knowledge of vocabulary (Thornbury, 2002), there is now a unanimous consensus among English as a Foreign Language (EFL) educators that the quality and quantity of EFL learners learning language are determined, to a large extent, with learners' vocabulary knowledge (Decarrico, 2001; Hatch & Brown, 1995; Maley, 1986; Schmitt 2000). That is why many EFL educators argue that inadequacy of lexical knowledge may hamper or slow down language learning (Fan, 2003). However, for many EFL learners, vocabulary learning is an extremely challenging task (Catalan, 2003; Hiebert, 2011; Read, 2000).

Traditional curriculum designs have neglected the teaching of how to learn, but instead focused on imparting knowledge and skills (Hedge, 2000; Nagy & Hiebert, 2010). Therefore, more recently, EFL researchers have begun to inspect the process of learning vocabularies (Schmitt, 2000; Singleton, 1999), and many EFL researches have attempted to provide and suggest effective techniques in order to increase the efficiency of vocabulary learning, called Vocabulary Learning Strategies (VLS) (Atay & Ozbulgan, 2007; Fan, 2003; Nation, 2001, 2004; Nation & Meara, 2002; Schmitt, 2000; Shen, 2004; Tsuchida, 2002).

Vocabulary learning is believed to be a multifaceted process which involves many factors, i.e. memorizing words, being able to recall them, and using them appropriately (Nation, 2004; Verhallen & Schoonen, 1993). Therefore, VLS are defined as the "knowledge about the mechanisms (processes, strategies) used in order to learn vocabulary as well as steps or actions taken by students (a) to find out the meaning of unknown words, (b) to retain them in long-term memory, (c) to recall them at will, and (d) to use them in oral or written mode" (Catalan, 2003, p. 56). As a result, it is believed that VLS are the processes which facilitate increasing language learners' receptive and productive knowledge of vocabulary as one of the most important components of language learning (Coxhead, 2006; Decarrico, 2001; Lessard-Clouston, 2008).

Based on the abovementioned premises, it seems reasonable to argue that investigating the way EFL learners' internal factors contribute to the quality and quantity of employing VLS, along with developing vocabulary learning methods

and techniques, is a logical attempt in the domain of Teaching English as a Foreign Language (TEFL). This inspection becomes more justified and valuable when considering the fact that the psychological needs, mental factors, and personal peculiarities of learners have paramount importance when we seek to develop a reliable and well-informed theory of teaching and realize pedagogical goals (Fahim & Zaker, 2014; Nosratinia & Zaker, 2014).

Autonomy (AU) is one of these internal factors which makes learners feel autonomous, competent, and related to others (O'Donnell, Reeve, & Smith, 2012). Therefore, it is no wonder to observe that, "[C]urrent English as a foreign language (EFL) pedagogical trends seem to primarily focus on a student-centered methodology in which learner AU is given a great value" (Nosratinia & Zaker, 2014, p. 1). AU is generally defined as the capacity to take charge of, or responsibility for one's own learning (Holec, 1981). It is both a social and an individual construct, which involves the personal development of each student and, at the same time, interaction with others (La Ganza, 2001).

An autonomous person, according to Paul and Elder (2002), is not dependant on others for the direction and control of one's thinking. Little (1995) argues that the pursuit of AU in formal educational context is a matter of both learning and learning how to learn, the latter point being closely related to VLS. The basis of learner AU, according to Chang (2007), is that learner accepts responsibility for his or her learning. This responsibility, according to Nation and Macalister (2010), would enable EFL learners to become effective and independent language learner.

Critical Thinking (CT) is another significant internal factor which is believed to have a major influence on the process of learning and the way EFL learners deal with input and produce output (Chamot, 1995; Nosratinia & Zaker, 2013). CT, as a high level of cognitive function, "is a purposeful, self-regulatory judgement which results in interpretation, analysis evaluation, and inference, as well as explanations of evidential, conceptual, methodological or contextual considerations upon which the judgement is based" (Astleitner, 2002, p. 53). Such a cognitive factor, according to Wagner (1997), would enable individuals to develop expertise in many areas of life.

It is believed that promoting the development of learner AU in second language classes requires maximizing learners' potential for learning through critical reflection (Ku, 2009). Therefore, one might expect the existence of a significant relationship between CT and AU. This relationship has been confirmed in some recent studies (Fahim & Sheikhy, 2011; Nosratinia & Zaker, 2014). This point makes the inspection of the way these related factors, i.e. CT and AU, affect VLS a more research-wise valid attempt (Mackey & Gass; 2005; Springer, 2010).

The premises put forward above provide the rationale for a systematic attempt to investigate the association among CT, AU, and VLS in an ELT context. A further question also would crop up about the comparison between CT and AU in predicting VLS among EFL learners. To fulfill this objective, the following research questions were proposed:

**Research Question 1:** Is there any significant relationship between EFL learners' AU and CT ability?

**Research Question 2:** Is there any significant relationship between EFL learners' CT ability and use of VLS?

**Research Question 3:** Is there any significant relationship between EFL learners' AU and use of VLS?

**Research Question 4:** Is there any significant difference between EFL learners' CT ability and AU in predicting use of VLS?

## 2. Method

### 2.1 Participants

The participants of this study were 100 randomly selected undergraduate EFL learners (87 females, 87% and 13 males, 13%) with the age range of 18-25 ( $M_{age} = 21$ ), majoring in English Translation and English Literature at Islamic Azad University, Central branch. The main medium of instruction in this context was English; however, learners' first language (L1; Persian) was occasionally used. It should be mentioned that the preliminary number of participants was 145, but 45 of them were excluded from data analysis due to careless coding, and incomplete answers, bringing the final number of participants to 100.

### 2.2 Instrumentation

The following instruments were utilized in this study:

1. A questionnaire of AU by Spratt, Humphreys, and Chan (2002);
2. A questionnaire of CT by Honey (2000); and
3. A Vocabulary Learning Strategies Questionnaire (VLSQ) by Schmitt (1997).

#### 2.2.1 AU Questionnaire

To evaluate the participants' level of AU, a questionnaire of AU including 52 items was administered. This questionnaire was designed by Spratt, Humphreys, and Chan (2002). They state that the questionnaire design is strongly influenced by Holec's (1981) definition of AU. Holec (1981) defines AU as "the ability to take charge of one's own learning where to take charge of one's learning is to have and to hold the responsibility for all the decisions concerning all aspects of this learning" (as cited in Spratt, Humphreys, & Chan, 2002, p. 249).

This questionnaire consists of four sections. The first section (13 items) focuses on the learners' perception of their own responsibility. The second section (11 items) investigates participants' self-evaluation of their decision-making abilities. The third section (1 item) aims to measure the level of participants' motivation. The fourth section (27 items) investigates the frequency of engaging in both extracurricular and in-class activities.

Respondents were asked to indicate their answers in 20 minutes in a Likert-type scale, sequentially assigning values 1, 2, 3, 4, and 5 to options of *not at all*, *a little*, *some*, *mainly*, and *completely* in section 1. Counting 1 for *very poor* to 5 for *very good* in section 2. Setting 5 to 1 beside the first to the last choices in section three, and attributing values of 1, 2, 3, and 4 to options of *never*, *rarely*, *sometimes*, and *often* in section four. In this regard, the result can vary from 52 to 233. It is self-evident that the higher the mark, the more autonomous the participant is.

In this study the Persian version of this questionnaire that has been translated and validated by Fahim and Sheikhy (2011) was employed to make sure that the participants fully comprehended it. In a study conducted by Nosratinia and Zaker (2014) on EFL learners, the reliability of this questionnaire was estimated to be .84 using Cronbach's alpha coefficient. In this study, the reliability of AU questionnaire was estimated to be .79 using the Cronbach's alpha coefficient.

### 2.2.2 CT Questionnaire

The CT questionnaire intends to explore what a person might or might not do when thinking critically about a subject. Developed by Honey (2000), the questionnaire aims at evaluating the three main skills of comprehension, analysis, and evaluation of the participants. This questionnaire is a Likert-type with 30 items which allows investigating participants' ability in note-taking, summarizing, questioning, paraphrasing, researching, inferencing, discussing, classifying, outlining, comparing and contrasting, distinguishing, synthesizing, inductive and deductive reasoning.

The participants are asked to rate the frequency of each category they use on a 5-point Likert-type scale, ranging from *never* (1 point), *seldom* (2 points), *sometimes* (3 points), *often* (4 points), to *always* (5 points). The ultimate score is computed in the possible range of 30 to 150. The participants are allocated 20 minutes to complete the questionnaire.

In this study, the Persian version of this questionnaire was employed, which has been translated by Naeini (2005). In a study conducted by Nosratinia and Zaker (2014) on EFL learners, the reliability of this questionnaire was estimated to be .81 using Cronbach's alpha coefficient. In this study, the reliability of CT questionnaire was estimated to be .70 using the Cronbach's alpha coefficient.

### 2.2.3 VLS Questionnaire

The 60-item VLS questionnaire by Schmitt's (1997) was used in this study. Schmitt's taxonomy of vocabulary learning strategies is one of the most comprehensive and practical taxonomies in the domain of L2 vocabulary learning strategies. It contains five categories that are: metacognitive, cognitive, memory, determination, and social.

The researchers used the Persian version of this questionnaire which has been translated and validated by Fahim & Komijani (2010) in order to make sure that the participants fully comprehended it. The participants were asked to rate the frequency of each category they use on a 5-point Likert-type scale, ranging from *never* (1 point), *seldom* (2 points), *sometimes* (3 points), *often* (4 points), to *always* (5 points). The time limit for the completion of the questionnaire was 35 minutes. The scores ranged in the possible range of 60 to 300. In this study the reliability of this questionnaire was estimated to be .89 using the Cronbach's alpha coefficient.

## 2.3 Procedure

In order to achieve the purpose of the study, the following procedures were pursued:

After obtaining a formal approval for conducting the research in the context of the study (see participants), for every session of administration, one class was randomly selected from the available classes. All the participants were then informed about the aim of the study and were given the choice whether to fill in the questionnaires or not. They were also informed that the information supplied by them will be treated as confidential.

Before administering the questionnaires, the participants were fully briefed on the process of completing the questionnaires. This briefing was given in Persian by explaining and exemplifying the process of choosing the answers. Thereafter, the three questionnaires were administered to the participants, and the participants were given 75 minutes to complete the questionnaires.

Subsequently, the questionnaires were scored to estimate participants' level of CT, AU, and VLS. This was followed by the statistical analyses which will be elaborated later in the following parts. It is worth mentioning here that from the initial 145 administered questionnaires, a number of 100 sets were completely answered and were considered for statistical analyses. The data collected from the other participants were excluded from the statistical analyses.

## 3. Results

This study set out to investigate the relationship among EFL learners' CT, AU, and VLS. In order to answer the research questions of the study, the descriptive statistics were obtained and the assumptions of linear correlation were checked, the results of which are presented below. This was followed by pertinent statistical analyses based on a descriptive design. The design of this study is descriptive because the primary motivation of the researchers was to

investigate the relationships with no manipulation of traits and behaviors (Best & Kahn, as cited in Nosratinia & Zaker, 2014). The reliability of the research instruments was calculated using Cronbach's alpha coefficient.

### 3.1 Testing the Basic Assumptions

Since the present data were analyzed through Pearson's correlation and regression analyses, three main assumptions of interval data, independence of subjects (i.e. their performance on the test should not be affected by the performance of other students), and normality should be met.

The present data were measured on an interval scale, and the participants performed independently on the questionnaires. Moreover, the assumption of normality was met; the values of skewness and kurtosis ratios were within the ranges of  $\pm 1.96$ .

### 3.2 The Relationship between AU and CT

As stated in the introductory section, some studies have reported a significant relationship between CT and AU (Fahim & Sheikhy, 2011; Nosratinia & Zaker, 2014). Nevertheless, in order to investigate this relationship in this context, the following research question was posed:

**Research Question 1:** Is there any significant relationship between EFL learners' AU and CT ability?

In order to investigate this relationship, the results of the AU questionnaire were correlated with those of CT questionnaire. As Table 1 shows, there is a significant and positive relationship between EFL learners' AU and CT in this context. The significant and positive correlation ( $r = 0.74$ ,  $n = 100$ ,  $p < .05$ ) indicates how closely AU and CT ability of Iranian EFL learners are related.

Table 1. Correlation Between Autonomy and Critical Thinking Ability

Correlations			
		Autonomy	Critical Thinking
Autonomy	Pearson Correlation	1	.740**
	Sig. (2-tailed)		.000
	N	100	100
Critical Thinking	Pearson Correlation	.740**	1
	Sig. (2-tailed)	.000	
	N	100	100

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### 3.3 The Relationship between CT and VLS

It is believed that CT is an internal factor which has a major influence on the process of learning (Chamot, 1995; Nosratinia & Zaker, 2014). However, in order to inspect the way CT and VLS are associated, the following research question was posed:

**Research Question 2:** Is there any significant relationship between EFL learners' CT ability and use of VLS?

In order to investigate this relationship, the results of Learners' CT scores were correlated with those of VLSQ. As reported in Table 2, there is a significant and positive relationship between CT and overall use of VLS ( $r = 0.74$ ,  $n = 100$ ,  $p < .01$ ) in this context.

Table 2. Correlation Between Critical Thinking and Overall Use of Vocabulary Learning Strategies

Correlations			
		Critical Thinking	VLS
Critical Thinking	Pearson Correlation	1	.846**
	Sig. (2-tailed)		.000
	N	100	100
VLS	Pearson Correlation	.846**	1
	Sig. (2-tailed)	.000	
	N	100	100

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 3 reports the association between CT and the subcategories of VLS. All of these relationships turned out to be significant.

Table 3. Correlations Between Categories of Vocabulary Learning Strategies and Critical Thinking Ability

Correlations		
		CT
CT	Pearson Correlation	1
	Sig. (2-tailed)	
	N	100
Metacognitive	Pearson Correlation	.745**
	Sig. (2-tailed)	.000
	N	100
Cognitive	Pearson Correlation	.507**
	Sig. (2-tailed)	.002
	N	100
Memory	Pearson Correlation	.428**
	Sig. (2-tailed)	.000
	N	100
Determination	Pearson Correlation	.401**
	Sig. (2-tailed)	.000
	N	100
Social	Pearson Correlation	.372**
	Sig. (2-tailed)	.006
	N	100

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### 3.4 The Relationship between AU and VLS

It has been an agreed-upon notion that AU has a positive impact on learning language (O'Donnell, Reeve, & Smith, 2012). Nonetheless, the following research question was posed in order to inspect the way AU and VLS are associated.

**Research Question 3:** Is there any significant relationship between EFL learners' AU and use of VLS?

In order to answer this question, learners' AU scores were correlated with those of VLSQ (Table 4). As reported in Table 4, there is a significant and positive relationship between EFL learners' AU and overall use of VLS ( $r = 0.74$ ,  $n = 100$ ,  $p < .01$ ).

Table 4. Correlation of Autonomy and Overall Use of VLS

Correlations			
		Autonomy	VLSQ
Autonomy	Pearson Correlation	1	.748**
	Sig. (2-tailed)		.000
	N	100	100
VLSQ	Pearson Correlation	.748**	1
	Sig. (2-tailed)	.000	
	N	100	100

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 5 reports the association between AU and the subcategories of VLS. All of these relationships turned out to be significant.

Table 5. Correlation of Autonomy and Subscales of VLS

Correlations		
	Autonomy	
Autonomy	Pearson Correlation	1
	Sig. (2-tailed)	
	N	100
Metacognitive	Pearson Correlation	.636**
	Sig. (2-tailed)	.001
	N	100
Cognitive	Pearson Correlation	.520**
	Sig. (2-tailed)	.001
	N	100
Memory	Pearson Correlation	.449**
	Sig. (2-tailed)	.000
	N	100
Determination	Pearson Correlation	.428**
	Sig. (2-tailed)	.000
	N	100
Social	Pearson Correlation	.297**
	Sig. (2-tailed)	.003
	N	100

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### 3.5 VLS as Predicted by AU and CT

As the correlations between the three variables, CT, AU, and VLS, were significant, the researchers ran a multiple regression analysis between the variables to answer the following research question:

**Research Question 4:** Is there any significant difference between EFL learners' CT ability and AU in predicting use of VLS?

In order to investigate the difference between EFL learners' CT and AU in predicting use of VLS, a linear regression through the stepwise method was carried out. As displayed in Table 6, Learners' AU is the best predictor of VLS ( $r = .448$ ,  $r$  squared = .20). That is to say, EFL Learners' AU predicts 20 percent of VLS, whereas CT adds only 7 percent to the r-squared.

Table 6. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.448 <sup>a</sup>	.201	.192	26.010
2	.527 <sup>b</sup>	.277	.262	24.858

a. Predictors: (Constant), Autonomy

b. Predictors: (Constant), Autonomy, CT

The results of the ANOVA test of significance of the regression model [ $F(1, 98) = 450.03$ ,  $p < .05$ ] (Table 7) indicated that the results displayed in Table 6 were statistically significant.

Table 7. Regression Output: ANOVA Test

	Model	Sum of Squares	Df	Mean Square	F	Sig.
	Regression	101501.796	1	101501.796	450.032	.000 <sup>b</sup>
1	Residual	34303.124	98	230.796		
	Total	135804.92	99			

a. Dependent Variable: VLS

b. Predictors: (Constant), Autonomy

#### 4. Discussion and Conclusion

There is now a unanimous consensus among EFL researchers and educators that the quality and quantity of EFL learners' language learning are determined, to a large extent, with learners' vocabulary knowledge (Decarrico, 2001; Hatch & Brown, 1995; Maley, 1986; Schmitt 2000). However, for many EFL learners, vocabulary learning is a challenging task (Catalan, 2003; Hiebert, 2011; Read, 2000). Based on this premise, VLS have been suggested as techniques which would facilitate vocabulary learning among L2 learners (Coxhead, 2006; Lessard-Clouston, 2008).

Knowing that EFL learners' performance is deeply influenced by their internal factors (Fahim & Zaker, 2014; Lightbown & Spada, 2006) and that using VLS is closely related to the internal factors and mental processes (Catalan, 2003), this study attempted to systematically investigate the association among EFL learners' CT, AU, and VLS. To fulfill this objective, the following research questions were proposed:

**Research Question 1:** Is there any significant relationship between EFL learners' AU and CT ability?

**Research Question 2:** Is there any significant relationship between EFL learners' CT ability and use of VLS?

**Research Question 3:** Is there any significant relationship between EFL learners' AU and use of VLS?

**Research Question 4:** Is there any significant difference between EFL learners' CT ability and AU in predicting use of VLS?

As stated earlier, for every session of administration, one class was randomly selected from the available classes, and the participants were informed about the purpose of the study. After collecting the data through administering three pertinent questionnaires, the statistical analyses were carried out to answer the abovementioned questions in this descriptive study. After testing the preliminary assumption, Pearson's product-moment correlation coefficient, as a parametric test, answered the first three research question. Following this, as the correlations between the three variables were significant, a multiple regression was ran to answer the fourth research question.

It is believed that promoting AU in second language classes requires maximizing learners' potential for learning through critical reflection (Ku, 2009). However, the existence of such a relationship should be tested systematically. As suggested by the results, this study observed a significant and positive relationship between EFL learners' CT and AU ( $r = 0.74$ ,  $n = 100$ ,  $p < .05$ ). Put another way, EFL learners in this context demonstrated a strong association between their CT and their AU in learning English as an L2. This finding was in line with the findings of previous studies, i.e. Nosratinia and Zaker (2014) ( $r = 0.73$ ) and Fahim and Sheikhy (2011) ( $r = 0.546$ ), and this confirmation would make it more reasonable now to argue about a causal relationship between CT and AU (Springer, 2010).

Vocabulary learning is a multifaceted process which involves many mental processes, i.e. memorizing words, being able to recall them, and using them appropriately (Nation, 2004; Verhallen & Schoonen, 1993). On the other hand, CT is a significant internal factor which is believed to have a major influence on the process of learning and the way EFL learners deal with input and produce output (Chamot, 1995; Nosratinia & Zaker, 2014). Based on these theoretical arguments, the second analysis examined the way CT and VLS are associated. Results suggested that there is a significant and positive relationship between CT and overall use of VLS ( $r = 0.74$ ,  $n = 100$ ,  $p < .01$ ) in this context. This is to say that, the higher level of CT a learner has the higher number of VLS s/he uses, and vice versa. This result confirmed the results of the same analysis carried out by Nosratinia, Shakoory, and Zaker (2013) ( $r = 0.72$ ) in an Iranian context. Therefore, it becomes reasonable to argue that CT should be promoted in the Iranian context when a higher level of VLS use is expected.

AU is believed to be an internal factor which makes learners feel autonomous, competent, and related to others (O'Donnell, Reeve, & Smith, 2012). Moreover, Little (1995) argues AU enables learners to improve their abilities in in both learning and learning how to learn, the latter point being closely related to VLS. Accordingly, the penultimate research question attempted to systematically investigate the way AU and VLS are associated. As reported, a significant and positive relationship between EFL learners' AU and overall use of VLS was observed. ( $r = 0.74$ ,  $n = 100$ ,  $p < .01$ ). This result was in line with the findings of another study by Nosratinia, Shakoory, and Zaker (2013) ( $r = 0.77$ ). Therefore, this relationship, also, shows the tendency to confirm and/or support a causal relationship.

The last research question investigated the difference between EFL learners' CT and AU in predicting use of VLS. A linear regression through the stepwise method revealed that Learners' AU is the best predictor of VLS ( $r = .448$ ,  $r$  squared = .20). More specifically, EFL Learners' AU predicts 20 percent of VLS, whereas CT adds only 7 percent to the  $r$ -squared. This higher ability of AU in predicting VLS when compared with CT has been confirmed by previous studies, e.g. Nosratinia, Shakoori, and Zaker (2013). This finding demonstrates that CT and AU can both significantly contribute to the degree of VLS among EFL learners. However, AU turned out to be a better predictor of VLS. This point seems to be in line with Dickinson's (1992) arguments where he states that those students who depend on themselves in learning, have a higher chance to internalize vocabularies and, as a result, to succeed academically.

The findings of this study have some implications for EFL teachers. According to Scharle and Szabo (2000), the class time for vocabulary is so limited when compared with the huge number of vocabulary items needed to be learned. On the other hand, for many EFL learners, vocabulary learning is a challenging task (Catalan, 2003; Hiebert, 2011; Read, 2000). Therefore, along with VLS instruction, as a direct form for promoting VLS use, EFL teachers should encourage AU and CT, as two significant internal factors (Nosratinia & Zaker, 2014), among their learners.

Fan (2003) highlights the importance of helping EFL students understand the significance of VLS and encouraging them to develop effective strategies of their own. EFL teachers are, therefore, suggested to inform EFL learners of the ways through which AU, CT, and VLS can contribute to learning more independently, reliably, lastingly, and effectively. This is due to the fact that language learners are required to play their role properly in order to facilitate and optimize the complicated process of learning. On the other hand, syllabus designers, as providers of a great portion of the language learning setting should take into consideration learners' individual differences, especially their CT ability, their AU level, and their VLS preference in their courses which can result in intellectual, active learners.

Further studies may replicate this study with a larger sample size. Moreover, it is suggested to inspect the way other mental and personality factors interact with the variables of this study. This study can also be replicated employing some qualitative instruments, e.g. interviews, in order to increase the validity and generalizability of the findings. Finally, it is suggested to replicate this study among other age groups.

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