

Investigating the Rate of Foreign Language Lexicon and Grammar Attrition among Young Adult Iranian EFL Learners

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Abstract

The present study was carried out to investigate the rate of attrition in EFL components in terms of lexicon and grammar. The second aim of this study was to find out and compare language attrition rate in different levels and sections of young adult Iranian EFL learners in each component while continuing their studies. To this end, six achievement tests (three vocab and three grammar multiple choice tests) were utilized as the instruments in this study. Each test included forty items and four parts. 116 EFL learners were selected from the highest levels of the three sections of Run, Race and Reach: 39 participants from Run4 level (20 males and 19 females), 39 participants from Race4 level (19 males and 20 females), and 38 participants from Reach4 level (18 males and 20 females). The results of the repeated measure ANOVA revealed that lexicon was more vulnerable to attrition than grammar in the Run and Race levels. The results also indicated that the rate of attrition in grammar was more than lexicon in the Reach levels. The findings also showed that the degrees of attrition in Run levels (lexicon attrition), Race levels (lexicon attrition), and Reach levels (grammar attrition) were not different.

Keywords: language attrition, young adult Iranian EFL learners, lexicon, grammar

INTRODUCTION

Second or foreign language attrition, as the result of an individual's reduced use of the language due to declining or the termination of an instructional program (Olshtain, 1989), originated as a new subfield of SLA in a conference on the "Loss of Language Skills", which was held at the university of Pennsylvania by Lambert and Freed (1982). Given the nature of English as a global or international language, EFL learning has become an integral part of almost every body's life in Iran. However, from a broad perspective, most learners go through periods in which their use of EFL declines or even is terminated- for weeks, months or years- even if general process of learning or acquisition subsequently continues, and as a result total or partial EFL attrition happens. Even in periods of continuous use of EFL, not all aspects of language

knowledge are regularly exercised, so that although gains are made in some areas, loss may simultaneously occur in others, (Bardovi-Harlig and Stringer, 2009). As students learning EFL in institutes, schools or universities may inevitably experience any kind of attrition while processing through the hierarchical levels, many problems may arise in the process of EFL education for both learners and teachers. Although language attrition has been investigated by a number of researchers in different settings and contexts and after thirty years of development, this kind of study is now reaching maturity, it's still young in comparison to SLA, especially regarding Iranian young adults.

This study aims to seek answers to the following questions:

- Are different EFL components (lexicon and grammar), affected by attrition with the same degree?
- Does language attrition occur in different levels of young adult Iranian EFL learners in terms of lexicon and grammar, with the same degree?

LITERATURE REVIEW

Beginning in the 1970s until today, a new and especially young field in the area of second language acquisition was developed as language attrition. "First studies dealing with the topic of language loss or language attrition were published in the late 1970" (de Bot & Weltens 1989, p. 127). In 1980, the University of Pennsylvania hosted the conference "The Loss of Language Skills" (Lambert and Freed, 1982). The aim of this conference was to discuss areas of second language attrition and to ideate on possible areas of future research in L2 loss. Since then various research papers mainly within America have been published. In other countries however, language attrition research was paid rapidly any attention (de Bot & Weltens 1995). The field gained new momentum with two conferences held in Amsterdam in 2002 and 2005 some series of graduate workshops and panels at international conference such as the International Symposium on Bilingualism (2007, 2009), the annual conference of the European Second Language Association, and the AILA World Congress (2008) were also held in this field. Compared to the field of second language acquisition, language attrition is still relatively young and so much is still unknown.

Terminology of Language Attrition

As Mehotcheva (2010) indicated, the terms language attrition, language regression, language loss, language shift and language death, among others have been used to refer to the phenomenon of losing a language. However, there are a number of differences among them that have to be born in mind. Language shift and language death, are of interest to sociolinguists. Research on language shift focuses on loss of a language or a dialect across generations. Usually, it is concerned with diglossia situations in migrant communities or bilingual communities where two languages co-exist and in the course of time one language takes the place of the other, i.e. it is an intergenerational process. According to Mehotcheva (2010), language shift is considered as a normal phenomenon in language contact situations and its most extreme outcome is language death.

Language death, however, also may be the result of failure to pass on a language to the following generations, without necessarily any qualitative changes taking place in the language itself.

Language attrition or the decrease of linguistic skills in healthy individuals over time is an intra-generational phenomenon. Other terms such as language regression and language loss have also been used to refer to different types of decline in linguistic skills. Language loss, however, has a rather negative connotation of permanency and irreversibility that clashes with research on forgetting which claims that information represented in the brain cannot be entirely erased, it just becomes inaccessible. It was generally decided that language loss was to be used as a cover/general term for any type of decline in the linguistic skills, be it on individual or group level, encompassing both language shift and language attrition.

METHODOLOGY

Participants

The participants (all native Persian speakers) were learning English as a foreign language in Iran Language Institute in young adult department. As the researcher was herself an English teacher in the mentioned institute, she conducted this study based on convenience sampling of respondents in this English institute. 116 learners were selected to take part in six achievement tests. They were students of the highest levels of each section selected from 6 classes (three male and three female classes). Each pair of male and female class of the same level took two achievement tests: one vocab and one grammar test. There were three sections in this department and each section included four levels which totally make twelve levels as follows:

- 1) Run section (Run1, Run2, Run3, Run4): 39 participants
- 2) Race section (Race1, Race2, Race3, Race4): 39 participants
- 3) Reach section (Reach1, Reach2, Reach3, Reach4): 38 participants

The age of the learners ranged between 10 and 14. All the learners took these multiple choice grammar and vocab achievement tests at the end of the same semester.

Instruments

In order to carry out this study and collect the required data the researcher utilized the following instruments. There were six achievement tests: (three vocab and three grammar multiple choice tests), prepared (gathered and modified) by the researcher (the teacher) from ILI young adult Test Time book series (compiled and revised by Nick Ghojogh & Hosseinzadeh, 2009). Each multiple choice test included 40 items and every of its 10 items were selected from each level of the three sections of Run, Race, and Reach, e.g. in *Run* section (the same as Race and Reach sections) as mentioned in 4.1, there are four levels: *Run1*, *Run2*, *Run3* and *Run4*, the first ten items (items numbered from one to ten) of multiple choice tests pertain to Run1 level, the second ten items (items from eleven to twenty) to Run2 level, the third ten ones (items twenty-one to

item thirty) to Run3 level and the fourth or the last ten items (items from thirty-one to forty) refer to Run4 level i.e. Run4 male and female learners took one vocab and one grammar test containing the materials from Run1 to Run4. One score was considered for each item and totally forty scores were considered for a whole forty-item test. Then the score 40 was multiplied by 2.5 so that the final score was calculated out of 100. Each pair of tests of the same level (one vocab and one grammar test), was administered to a pair of male and female classes of the same levels as the tests. Each class of participants contained about 20 EFL young adult learners whose ages ranged from ten to fourteen.

The approach used to estimate reliability of the tests scores in this study was Guttman split-half estimates. As all the reliability coefficients were higher than .70, the instruments used in the present study were reliable.

Data Collection Procedure

Every male and female class of the same level took the same achievement tests (each class took one vocab and one grammar test simultaneously). Every multiple choice test included 40 items, and each item of the test contained four alternatives. The participants took the tests within the allotted time which was considered forty minutes for each test. The learners received instructions both orally by the researcher and written as typed in quiz papers. They were required to choose one of the alternatives among the four ones as the correct answer of each item of the tests.

RESULTS

As mentioned earlier, the researcher utilized six achievement tests (three vocab and three grammar multiple choice tests) as the instruments. The main objective of the study was investigating the rate of attrition in EFL components in terms of lexicon and grammar among young adult Iranian EFL learners.

The researcher ran the descriptive statistics and the repeated measures ANOVA to investigate if different EFL components (lexicon and grammar) are affected by attrition with the same degree. Table 4.1 shows the results of the descriptive statistics of grammar and vocabulary scores of the learners of the Run levels.

Table 1. Descriptive Statistics of Participants' Scores on Vocabulary and Grammar Tests (Run)

	N	Minimum	Maximum	Mean	Std. Deviation
Run 1Vocab	39	10.00	100.00	50.5128	27.90479
Run 2 Vocab	39	10.00	100.00	61.5385	30.30880
Run 3 Vocab	39	10.00	100.00	75.1282	22.10880
Run 4 Vocab	39	30.00	100.00	69.7436	19.39712
Run Vocabulary (Total)	39	27.50	97.50	64.2308	19.18705
Run 1Grammar	39	10.00	100.00	58.7179	27.92655
Run 2 Grammar	39	10.00	90.00	54.6154	20.49983
Run 3Grammar	39	10.00	100.00	50.2564	25.49377
Run 4Grammar	39	10.00	100.00	62.0513	24.72794
Run Grammar (Total)	39	22.50	92.50	56.4103	21.45830
Valid N (listwise)	39				

An important fact presented in Table 1 is that participants' vocabulary means scores increased from Run 1 to Run 3, then decreased in Run4. But, participants' grammar mean scores decreased from Run1 to Run3, then increased in Run4. Table 2 presents the results of the repeated measures ANOVA.

Table 2. The Results of Repeated Measures ANOVA regarding the Difference between Attrition of Vocabulary and Grammar in Run Levels

Source	factor1	Type III Sum of Squares	df	Mean Square	F	Sig.
factor1	Linear	4770.513	1	4770.513	19.225	.000
Error(factor1)	Linear	9429.487	38	248.144		

The results of the repeated measures ANOVA presented in Table 2 indicate that there is a significant difference between the attrition of vocabulary and grammar within the Run group ($F=19.22$, $sig.= 0.000$). Based on the mean scores presented in Table 1, it can be concluded that the degree of attrition in vocabulary is more than grammar in Run levels. For the better understanding, Figure 1 depicts the results.

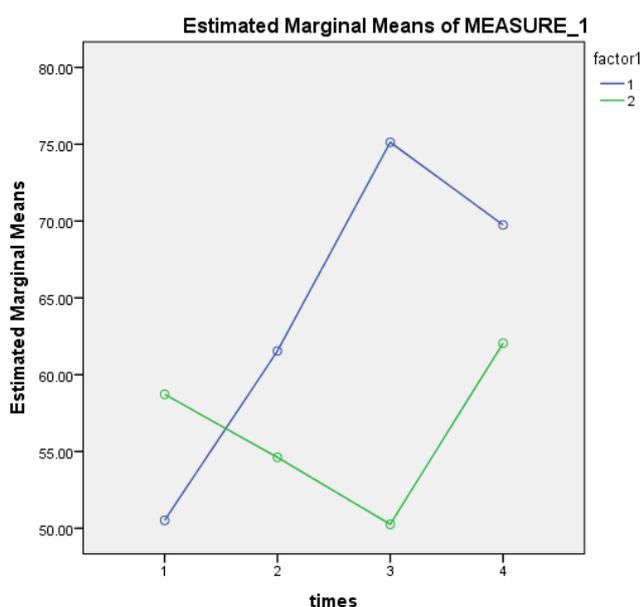


Figure 1. Mean Scores of the Vocabulary and Grammar Tests (Run)

In the next step, the researcher ran the descriptive statistics and the repeated measures ANOVA for Race levels. Tables 3 and 4 show the pertaining results.

Table 3. Descriptive Statistics of Participants' Scores on Vocabulary and Grammar Tests (Race)

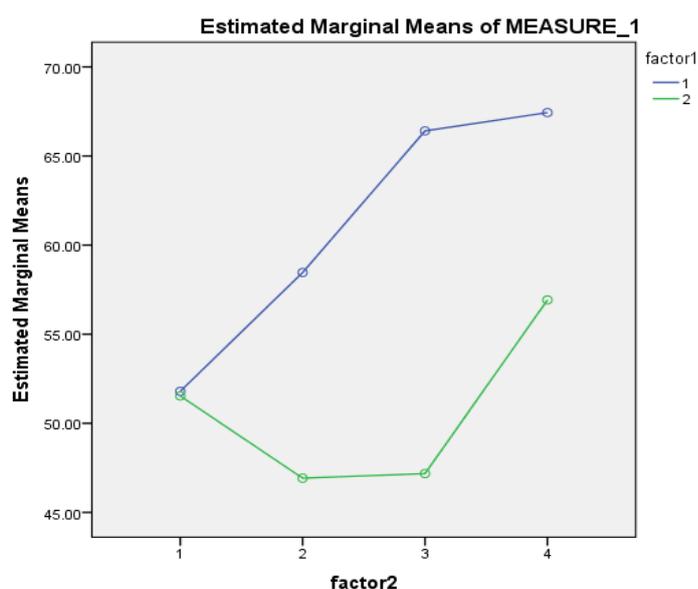
	N	Minimum	Maximum	Mean	Std. Deviation
Race1Vocab	39	10.00	100.00	51.7949	26.44476
Race2Vocab	39	10.00	100.00	58.4615	26.31174
Race3Vocab	39	10.00	100.00	66.4103	30.47753
Race4Vocab	39	20.00	100.00	67.4359	19.96285
Race Vocabulary (Total)	39	20.00	100.00	61.0256	22.49794
Race1Grammar	39	10.00	100.00	51.5385	23.23093
Race2Grammar	39	10.00	100.00	46.9231	23.18732
Race3Grammar	39	10.00	100.00	47.1795	27.42921
Race4Grammar	39	20.00	90.00	56.9231	20.02023
Race Grammar (Total)	39	20.00	97.50	50.6410	19.54851
Valid N (listwise)	39				

By referring to Table3, the mean of the vocabulary scores can be seen to improve at the advanced levels. Table 3 also shows that the mean of grammar scores in Race4 (mean=56.92) is more than the mean scores of the other Race levels.

Table 4. The Results of Repeated Measures ANOVA regarding the Difference between Attrition of Vocabulary and Grammar in Race Levels

Source	factor1	Type III Sum of Squares	df	Mean Square	F	Sig.
factor1	Linear	8411.538	1	8411.538	19.684	.000
Error(factor1)	Linear	16238.462	38	427.328		

The results presented in Table4 indicate that the difference between attrition of vocabulary and grammar within the Race group is significant ($F=19.68$, $sig.=.000$). Figure2 shows the mean scores of the vocabulary and grammar test.

**Figure 2.** Mean Scores of Vocabulary and Grammar Tests (Race)

Tables 5 and 6 show the results of the descriptive statistics and the repeated measures ANOVA for the Reach levels.

Table 5. Descriptive Statistics of Participants' Scores on Vocabulary and Grammar Tests (Reach)

	N	Minimum	Maximum	Mean	Std. Deviation
Reach1 Vocab	38	10.00	100.00	57.8947	24.62233
Reach2 Vocab	38	10.00	100.00	57.1053	30.21615
Reach3 Vocab	38	10.00	100.00	58.9474	28.73829
Reach4 Vocab	38	10.00	100.00	52.6316	29.19498
Reach Vocab (Total)	38	20.00	100.00	56.6447	25.98906
Reach1 Grammar	38	10.00	90.00	53.4211	24.85377
Reach2 Grammar	38	20.00	100.00	68.4211	19.10516
Reach3 Grammar	38	10.00	100.00	72.1053	18.62255
Reach4 Grammar	38	30.00	100.00	72.1053	16.46584
Reach Grammar (Total)	38	22.50	95.00	66.5132	15.01733
Valid N (listwise)	38				

As Table5 shows, the means of grammar scores increased from Reach1 (mean=53.42) to Reach 4 (mean= 72.10).

Table 6. The Results of Repeated Measures ANOVA regarding the Difference between Attrition of Vocabulary and Grammar in Reach Levels

Source	factor1	Type III Sum of Squares	df	Mean Square	F	Sig.
factor1	Linear	7401.316	1	7401.316	11.065	.002
Error(factor1)	Linear	24748.684	37	668.883		

According to Table 6, there is a significant difference between attrition of vocabulary and grammar within the Reach group ($F=11.06$, $sig.=.002$). The results of the descriptive statistics presented in Table5 reveal that the degree of attrition in grammar is more than that of vocabulary in Reach levels. Figure 3 depicts the results.

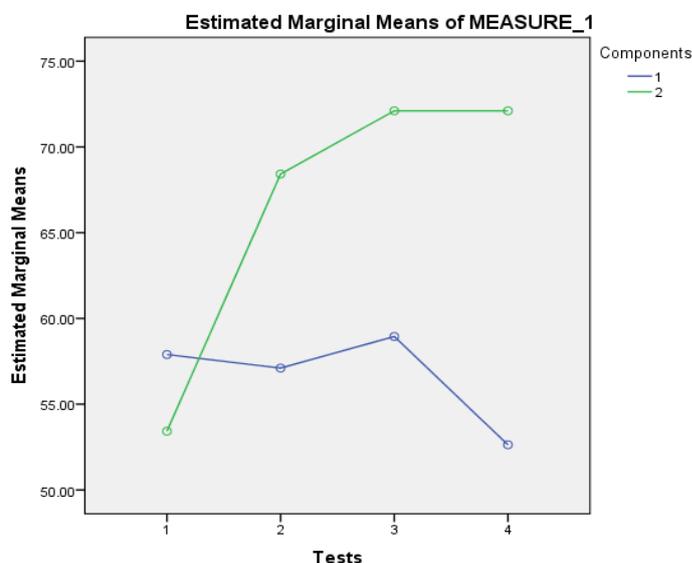


Figure 3. Mean Scores of Vocabulary and Grammar Tests (Reach)

The second objective of the study was to investigate if language attrition occurs in different levels of young adult Iranian EFL learners (in terms of lexicon and grammar) with the same degree. The results of the repeated measures presented in Tables 2 show that the students undergo a significant attrition of the vocabulary in the Run levels. Concerning the Race levels, Table 4 indicates that students experience a significant attrition of vocabulary in Race levels. Table 6 also showed that students undergo the attrition of the grammar in Reach levels. To search the difference among different levels of young adult Iranian EFL learners in terms of the degree of attrition, the researcher ran the repeated measures. Table 7 shows the pertaining results.

Table 7. The Results of Repeated Measures ANOVA regarding the Difference between Attrition of Vocabulary and Grammar in Reach Levels

Source	factor1	factor2	Type III Sum of Squares	df	Mean Square	F	Sig.
factor1	Linear		380.263	1	380.263	.355	.555
Error(factor1)	Linear		39594.737	37	1070.128		

The results presented in Table7 indicate that different levels of young adult Iranian EFL learners are not different in terms of the degree of attrition (sig.=.55). Figure4 shows the mean scores.

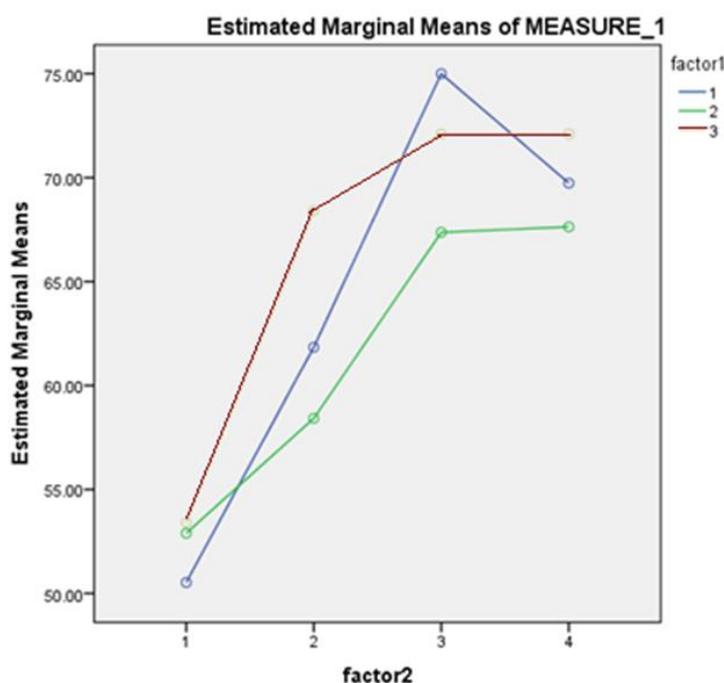


Figure 4. Means of Vocabulary Scores of Run Levels, Vocabulary Scores of Race Levels, and Grammar Scores of Reach Levels

The ultimate goal of the present study was to find if different EFL components (lexicon and grammar) are affected by attrition with the same degree. This study also aimed to investigate if language attrition occurs in different levels of young adult Iranian EFL learners (in terms of lexicon and grammar) with the same degree. In what follows, the research questions are answered in light of the findings of the study.

RQ1. Are different EFL components (lexicon and grammar) affected by attrition with the same degree?

The results of the descriptive statistics and repeated measures revealed that lexicon as an EFL component is more vulnerable to attrition than grammar in the Run and Race levels. The data also demonstrates that the rate of attrition in grammar is more than lexicon in the Reach levels. The findings of this study shed some light on the attrition of vocabulary in Run and Race levels among language learners. This study also revealed that Reach level learners undergo the grammar attrition.

Language attrition is studied since scholars are interested in knowing about attrition processes and has substantial pedagogical implications (Hansen, 2001a). Researchers have searched the amount and rate of attrition in different skills and areas of the language that is undergoing attrition and have come up with numerous results.

Studies revealed that the lexicon shows higher degrees of attrition in comparison to grammar (Kuhberg, 1992; Moorcroft & Gardner, 1987). However, other studies have concluded that grammar is more resilient than lexicon. For instance, in Moorcroft & Gardner's (1987) study, no evidence of vocabulary loss was found, but subjects lost some ability to use grammar rules in speaking and writing. The researchers suggested that the loss of such linguistic structures in second language attrition was due to differences in proficiency. Other researchers like Yoshitomi (1992) support that proficiency differences are the source of different patterns in first and second language attrition.

The results of the present study also confirm Neisser's (1984) theory. Neisser (1984) stated that the redundant and systematic items that are more connected to a schema and therefore more likely to be remembered may offer a possible account for the greater grammatical losses in proficient second language attriters. Since there are multiple rules that must be frequently applied, grammar tends to be more systematic and redundant than vocabulary, where each word has a particular meaning applicable only to a limited number of conditions and situations.

In another study conducted by Weltsen, Van Els and Schils (1989), the results showed that after zero, two, and four years of disuse of French as a foreign language, learners displayed greater attrition in grammar than in phonology, the lexicon, or other areas measured in their study.

The results of the present study indicated that language attrition starts almost after three months of language disuse. Concerning the relation between attrition and period of language disuse, Cohen (1989) stated that foreign language attrition considerably occurred nine months after intermittent use of the target language; likewise, Weltens *et al.*, (1989) expressed that earliest period of L2 disuse had no considerable effect on attrition. Kuhberg (1992) and Tomiyama (1994) reported that after six months of L2 disuse considerable attrition happens in children (cited in Wang, 2007). Considering mentioned studies above, there is no distinct, precise conclusion regarding the period of English disuse and attrition.

RQ2. Does language attrition occur in different levels of young adult Iranian EFL learners (in terms of lexicon and grammar) with the same degree?

The results of the repeated measures revealed that the degrees of vocabulary attrition in the Run levels, vocabulary attrition in the Race levels, and the grammar attrition in the Reach levels were not significantly different.

One learner-internal variable that has been frequently reported to be important on subsequent attrition in the literature of foreign language attrition is the attained proficiency level (Bahrck, 1984a). However, to date, there have been few studies which have addressed this issue directly. Perhaps one of the most essential issues in language attrition research is the rate of forgetting. There is some evidence that a rapid decline of foreign language target vocabulary occurred soon after formal instruction had ended (Abbasian & Khajavi, 2010; Alharthi, 2012; Bahrck, 1984; Bierling, 1990; Weltens, 1989).

The results of the present study are in line with the findings of the previous studies (Bahrck, 1984; and Weltens, 1989; Alharthi, 2012). In a study conducted by Bahrck (1984) and Weltens (1989), the results showed that proficiency and the amount of attrition were independent. Similarly, Alharthi's (2012) findings revealed that the amount of attrition was the same for his participants regardless of their level of attainment.

In some of the previous studies such as Olshtain (1989), it was shown that the advanced students were more resistant to attrition in comparison to the low-proficiency students. But the results of the current study revealed that the advanced students experienced attrition, as well. This might be due to some intervening variables such as the amount of out-of-class exposure, attitude, motivation, teaching methodology and so forth which are not involved in this study.

CONCLUSION

The results of the repeated measures revealed that lexicon is more vulnerable to attrition than grammar in the Run and Race levels. The findings also indicated that the rate of attrition in grammar is more than lexicon in the Reach levels. It can be concluded that although lexicon is more vulnerable to attrition compared with grammar, the learners with higher levels of proficiency display greater attrition in grammar than in lexicon. Moorcroft & Gardner's (1987) and Weltsen, Van Els and Schils (1989) also concluded that learners undergo the grammar attrition.

To answer the second research question, "Does language attrition occur in different levels of young adult Iranian EFL learners (in terms of lexicon and grammar) with the same degree?", the researcher employed the repeated measure analysis. The results revealed that the degrees of attrition in Run levels (lexicon attrition), Race levels (lexicon attrition), and Reach level (grammar attrition) were not different. The results of the previous studies (Bahrck, 1984; and Weltens, 1989; Alharthi, 2012) also revealed that level of proficiency doesn't affect the degree of attrition.

Based on the results of the present study, EFL learners experienced attrition in both elementary and advanced levels. Therefore, course designers can consider a bridge course with remedial purpose after learners finish each section and before starting to learn the next section. This bridge course which can help curbing or slowing down the rate of attrition, contains a review of the materials of all the levels of the section the related learners have just studied.

Another suggestion for course designers and also materials developers can be having those EFL learners who have finished each of the three sections of Run, Race, and Reach levels, to take a test which includes a summary of the materials of the section they have already passed. The students, who pass these tests successfully, are allowed to move to the next section and those who fail the tests, first attend the remedial course, then proceed to the next section. In this way, the classes will contain students with almost the same proficiency level. It also prevents EFL learners from experiencing attrition.

In addition, the findings of the present study might imply that teachers need to pay more attention to learners' language attrition. Furthermore, English language teachers should make modifications with their teaching methodologies based on the results of this study to put more emphasis on the areas which turn out to be vulnerable to attrition.

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