

# I Thought I Forgot about it: A Case Study in Attrition of English Grammar and Reading Comprehension

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## Abstract

The purpose of the present study was to investigate foreign language attrition in Saudi Arabia. It focused on the attrition of English grammar and reading comprehension of university students whose formal learning of English had ceased between one and four years prior to the study. The participants were non-English major Saudi undergraduate female students at a Saudi university who had completed an English course in order to fulfill college requirements. The study adopted the kind of design commonly used in language attrition studies, i.e. a combination of longitudinal and cross-sectional approaches. Various measurements of L2 attrition were conducted, including tests, questionnaires, and can-do scales. The findings suggest that (1) attrition due to lack of use of English did occur, (2) attrition sets in quickly and then levels off after four years of non-use, (3) reading comprehension is more vulnerable to attrition than grammar, and (4) no significant differences between participants were found due to the length of time English had not been used.

**Keywords:** attrition, English grammar, reading comprehension, questionnaire, can-do scales

## 1. Introduction

The number of published studies of various aspects of language attrition has increased considerably in the last three decades, with the topic of language attrition now established as a recognized and fruitful subfield in applied linguistics (see for example, Alharthi, 2014a, 2015a; Bahrack, 1984; Bardovi-Harlig & Stringer, 2010; Cohen, 1989; de Bot & Weltens, 1995; Hansen, 2001, 2011; Weltens, 1989). There seems to be a growing recognition of the relevance of language attrition to second language acquisition (SLA) (Schmid & Mehotcheva, 2012), with language attrition viewed as the reverse process of language acquisition. It is generally taken for granted that attrition implies the permanent loss of foreign language (FL) input from the learner's repertoire as well as a reduction in the learner's receptive and productive competence. However, the potentially mistaken view that attrition of some aspect of the FL is inevitable and permanent limits our understanding of FL acquisition to a process in which any FL input not properly logged in the language storage facility simply vanishes. This perspective tends to ignore the possibility of implicit learning, as it is based on the notion that FL input which ceases to be remembered by the learner after a period of less frequent by the EFL learner was gained through explicit learning. The view that FL attrition is permanent also reduces the meaning of FL acquisition in the sense that FL components are simply stored and then fade away from memory, never to be recalled. Such a position can lead to a fundamental misunderstanding about what it means to acquire a FL and to experience its gradual decline over time.

It is not clear from previous research findings whether linguistic aspects believed to suffer attrition are in fact gone forever or whether they have merely become temporarily irretrievable. Rigorous investigations describing the nature of FL attrition have failed to demonstrate whether forgetting FL linguistic aspects is permanent but might in fact improve or recover after a period of no or limited use (Alharthi, 2012, Hedgcock, 1991; Murtagh & der Slik, 2004 Weltens & Grendel, 1993; Weltens, 1989; Xu, 2010). While there seems to be a consensus that deterioration in skills or linguistic aspects is likely to occur as exposure to the FL ends, there is no widely accepted theory that accounts for the various manifestation of attrition. Therefore, a potentially accurate and valid view of attrition in language aspects is one in which we consider it dynamic in nature and subject to change and perhaps not always susceptible to decline.

A more familiar – and prominent – aspect of attrition is found in situations where learners of English rarely use their FL skills after accomplishing the goal of formal instruction, leading many learners to describe their language abilities negatively. For example, Saudi teachers complain that their students have forgotten part of what they have learned during their course of study. In addition, many Saudi tertiary staff would question whether Saudi students have adequate English proficiency to undertake studies at university level. Those who experience teaching English at King Faisal University (KFU) are familiar with learners who are unable to apply grammatical rules properly in writing after one or more English courses, and therefore it is expected that forgetting such rules would increase after they stop classroom learning. These observations have serious implications for the nature and scope of attrition and require empirical investigation.

Most research on FL attrition implicates different language components and language skills including vocabulary, grammar, reading, writing, listening and speaking, with attrition taking place at different rates. Nevertheless, the amount and the rate of attrition are not uniform across different language features and skills. For example, productive skills are more prone to attrition than receptive skills (Hakuta & D'Andrea, 1992; Weltens & Grendel, 1993). In his series of investigations on the attrition of single lexical items of English among college students, Alharthi (2013, 2014b,) concluded that attrition affects larger portions of productive vocabulary than of receptive vocabulary (see also the work by Alharthi (2015b) on recall and recognition of formulaic sequences in FL attrition). Empirical evidence describing the nature of grammatical FL attrition is also interesting, with a study by Weltens and Cohen (1989) showing the major area of attrition to be that of grammar. No significant differences between groups were detected for lexical aspects, while there was significant attrition of grammar in the first two years after attending a formal FL course. Similarly, Bahrck (1984) found that grammar recall declined most precipitously and was one of the two sub-scores which revealed no evidence of stabilizing during the retention period. Moreover, Bahrck's results showed that reading comprehension was maintained at a level determined by grammar recognition. Interestingly, a number of studies that examined the effects of extensive and long-term exposure to a target language indicated that rehearsal variables of reading, listening, and speaking during the retention interval were not sufficient predictors of attrition (Bahrck, 1984; Mehotcheva, 2010; Xu, 2010).

It is generally believed that the degree of difficulty of acquiring a second language is linked to its perception as being more, or less, distant to the learner's mother tongue (Murtagh, 2003). The findings reported by Weltens (1989) confirmed one of Anderson's (1982) hypotheses that the contrast between the native language and the target language appeared to play an important role at all three linguistic levels: phonology, vocabulary and grammar. Grammar tests indicated that "contrasting grammatical phenomena are more difficult to retain than phenomena that the target language shares with the native language" (Weltens, 1989, p. 95). However, it should be borne in mind that most studies of attrition are devoted to the empirical investigation of the attrition of lexis, morphology and syntactical features. There are large number of studies comparing the lexical usage of native speakers and semi-native speakers who supposedly have experienced language attrition. This might be due to the fact that the lexicon has been widely found to be more likely than grammar to reveal attrition (Moorcroft & Gardner, 1987). Far fewer studies have been concerned with documenting FL attrition of structural sequences of grammar. Although studies of FL attrition whose focus has been predominantly on native language attrition have decreased in number recently, Schmid and Mehotcheva (2012) discuss recent developments and future road maps in research concerning attrition affecting a formally taught FL, and remark on the dearth of linguistics and language related variables in FL contexts, saying that "Empirical studies exploring L2/FL attrition remain limited, as does the knowledge and understanding of the phenomenon" (Schmid & Mehotcheva, 2012, p. 3).

To the best of our knowledge, there has been no study conducted on the deterioration of English reading skills and grammar in the Saudi context. The present study addresses this

shortcoming with regards to Saudi female students, comparing four groups of university students who ceased their English study from one to four years prior to our investigation. It is hoped that the study will contribute to the growing body of research in the area of FL attrition, providing greater depth to our understanding of some published results, for example, by providing information about rate of attrition. The findings of this study will also provide input into education policies in Saudi Arabia by helping FL teachers and curriculum designers specify the objectives of the teaching of English as a FL and design teaching activities that will assist in achieving these objectives.

## 2. Background Concepts

The origin of FL attrition as a recognized subfield of SLA was launched in 1980 as a result of a conference dedicated to the attrition of language skills at the University of Pennsylvania, followed by a special volume of papers that specifically tackled the attrition of linguistic knowledge and set the attrition research agenda (Lambert & Freed, 1982). Within the field of FL attrition, researchers have focused on language changes in non-pathological settings (i.e. pertaining to normal and healthy individuals) as a result of a number of factors, states and outcomes relevant to the loss of competence and performance in individuals who had learned a FL. The most commonly given reason for loss or attrition was period of reduced input and language use (Weltens, 1987). The scope and depth of the contributions to Lambert and Freed (1982) suggested that the field had gained great attention. Although it was mainly concerned with methodological issues at first, the FL attrition field today contributes to knowledge about research design, the state of the art in current research, intra- and extralinguistic factors, the selection of variables, etc. (Bardovi-Harlig & Stringer, 2010; Schmid & Mehotcheva, 2012).

In a thorough literature review, Weltens (1987, p. 29) notes that “The general picture that emerges...is that attrition sets in rather quickly, but that loss rates decline in subsequent periods”. In support of this observation, among the studies he cites are Bahrck (1984) and Godsall-Myers (1981) all of whom report immediate declines in FL performance followed by a sometimes lengthy period of stability. This profile conforms to the traditional theory of forgetting as articulated by Ebbinghaus (1885). Smythe et al. (1973) investigated the loss of FL (French) skills after the summer recess; they found that participants’ listening comprehension actually improved between spring and fall, while reading comprehension declined by about 5%. Weltens, de Bot and Van Els (1986) used the can-do measurement technique in their study of the attrition of French as a second language. Their results suggest that the participants’ language skills have been subject to attrition to a certain degree. However, the participants’ global skills in reading and listening improved and the researchers attributed this result to the original proficiency level of their subjects. According to these authors, four to six years of training was a sign of a high proficiency level. Results by Moorcroft and Gardner (1987) demonstrate a significant decline in language proficiency, more so in grammar than in vocabulary. The obvious implication can be inferred from Weltens’ prospective study (1989). He investigated the effects of both proficiency level and disuse on the attrition of French among Dutch speakers in the Netherlands. The results of the self-report data showed that grammatical and lexical skills had decreased, the participants

having lost about 15 percent of their lexical and grammatical knowledge within the first two years. These findings have motivated the current authors to focus on grammar and reading comprehension in order to support or refute them on empirical grounds and in a different context.

To summarize, the effect of language disuse has three dimensions: total, partial and neutral. First, studies such as Godsall-Myers (1981) and Moorcroft and Gardner (1987) have reported loss that is totally the result of lack of use regardless of the length of the incubation period. Second, researchers such as Al-Hazemi (2000), Bahrack (1984), Gardner et al. (1985), Murtagh (2003), Smythe et al. (1973), Weltens (1989) and Weltens, de Bot and Van Els (1986) have attributed a partial effect to language nonuse regardless of the length of the period of studies. These studies demonstrate both language loss and language gain. Such results might be due to motivational and attitudinal factors, the nature of instruction or learning, the participants' original proficiency level, the environment and language use. In other words, language disuse is one of several factors that might be responsible for language attrition. To date, the effect of the period of disuse on the attrition of English reading skills and grammar has not been sufficiently addressed, especially in adults. In addition, there has been only limited focus on the study of the rate of attrition (Bahrack, 1984; Godsall-Myers, 1981; Weltens, 1989). To our best knowledge, there has been no research that considered the effect of language disuse on the attrition of reading skills and grammar in the Arabic context. It is important to point out that a number of attrition studies have dealt with Spanish, French, German, English, or other European languages as a second language (Russell, 1999) but only a few studies have been carried out on English as FL where Arabic is the speakers' mother tongue (Alharthi, 2014a, 2014b, 2015a, 2015b; Alharthi & Al Fraidan, 2016).

### **3. The Present Study**

The present study engages in hypothesis testing, seeking to document the possible causes of attrition in the Saudi context. In spite of empirical studies that examined the effects of language nonuse on the attrition of grammar and reading comprehension, there is a need to consider foreign language attrition specifically in an L1 environment because different social settings can be expected to produce different results. The present study does this by investigating the attrition of English in the Saudi environment.

Following Bardovi-Harlig and Stringer (2010), who called for considering the effect of non-use of language on language attrition, the present study tackled the variable lack of English use in its design, defined as a discontinuance of English instruction. Most studies carried out to date have measured foreign language attrition over a period of three months, on the basis of three months being defined as the period of nonuse. The present study investigates longer period of nonuse, i.e., four years of English nonuse. Previous studies have attempted to establish the impact of language nonuse in light of Ebbinghaus's traditional 'forgetting curve', i.e., rate of attrition, and the current study does so as well, specifically in the Saudi context.

Keeping in mind the rates of attrition in FL grammatical knowledge and reading skills found in previous studies, and the limitations stated above, the current study seeks to answer the

following research questions:

**RQ1.** What is the effect of English nonuse on the attrition of English reading skills and grammatical knowledge?

**RQ2.** What is the attrition rate in the Saudi context?

**RQ3.** What aspect of English is more vulnerable to attrition, reading comprehension or grammatical knowledge?

#### **4. Methodology**

##### *4.1 Participants*

A total of 201 female non-English majors enrolled at KFU in Saudi Arabia volunteered to be the participants of the present study. They were selected from different university levels: freshman, sophomore, and senior, for comparison purposes. These participants had completed at least 6 years of English as a Foreign Language (EFL) instruction at public schools. They attended 101 General English once a week for two hours a session, receiving instruction in listening, speaking, reading, writing and grammar. At the time of data collection, they had finished the course so formal learning of English had ceased. They were native speakers of Arabic and they were enrolled in different study programs, namely Arabic, biology, Islamic studies, home economics, nutrition, history, mathematics, sociology, and physics. They were assigned to four groups in accordance with the period of time between their completing the English 101 course and the time of the experiment. Group A consisted of students who studied English 101 one year prior to the beginning of the study (n= 85). Group B consisted of students who studied English 101 two years ago (n= 36). Group C consisted of students who studied English 101 three years ago (n= 30). Group D consisted of students who ceased 101 course four years ago (n= 50). There was one sub-group whose original English 101 test papers were available. It was labeled Group E and it consisted of 36 students. While 300 students participated in the data collection, the number whose data was taken into account in the study reduced to 201 students because some were not eligible to take part in the study.

Table 1. Participants

<b>Group</b>	<b>Number</b>	<b>Years since English 101</b>
A	85	1
B	36	2
C	30	3
D	50	4

##### *4.2 Research Instruments*

###### *4.2.1 The questionnaire*

The questionnaire developed for the study comprises four parts, with a total of 33 items, each followed by a three-point Likert-type response scale. The first part provides information about the participants' personal and linguistic background such as name, ID number, field of

study, year of English 101 study, number of years of English language learning, and number of English 101 resets. On the basis of this information, the participants were assigned to the different groups. The second and the third parts of the questionnaire are devoted to language use and self-evaluation in order to estimate how much English they used since their formal study of English ceased. Two questions were asked concerning their use of English, one focusing on its use in an academic context and one in a social and communicative context. The fourth part of the questionnaire asked questions about the participants' attitudes and motivation towards learning EFL.

#### 4.2.2 The Test Battery

The test is an identical version of the final exam of EDFL 101, the course the students had taken in preceding academic years. It was used to reveal the attrition the participants had experienced in the areas of reading comprehension and grammar. The baseline data against which language attrition was judged to have occurred were their scores in English 101. By comparing their final performance in English 101 with the test conducted as part of the current study, we sought to establish whether the period of time that had passed since they formally studied English was causally related to the attrition suffered in reading skills and grammar. Thus the selection of English 101 final tests to be employed in this study was motivated by the hope that these tests might be meaningful measures of the participants' performance especially when they were based on the curriculum itself. The English 101 test was a discrete point and thus it was used in the present study as a baseline in the hope that it would better reflect the participants' performance.

#### 4.2.3 Self-Assessment – Can-Do Scale for Reading Comprehension

The study includes so-called 'can-do scales' which are suggested by Clark (1982) as a useful way of obtaining reliable findings. This procedure requires the participants to rate how well they could perform different language tasks. Although some researchers reported that these scales are imprecise, e.g. Pan and Berko-Gleason (1986: 198) who maintained that "studies which rely on speaker's retrospective evaluation of their own abilities can be expected to fare little better in terms of reliability than child language studies which utilize retrospective parental reports as a measure of a child's language development", we have some confidence that the participants of the present study provided a real indication of their reading abilities in a number of real-life language use situations and rated their attrition accurately. In addition, this problem can be resolved by considering the results of the test and the questionnaire which Lambert termed 'existing data' (Lambert & Freed 1982: 9). Gardner et al. (1985) advocate a retrospective self-report approach to measure attrition, comparing the subjects' proficiency at a point in the past with their current proficiency level, an approach followed by the present study, which also adapted Gardner's scale to measure attrition. The participants were asked to rate their English reading abilities at two points in time: (a) at the moment, i.e. the time of the experiment, and (b) at the end of their English 101 course.

### 5. Administration and Data Analysis

The completion of the test and the questionnaire took approximately one hour; the

participants were allowed to continue as long as they needed. The participants completed the tasks in the following order: questionnaire, test, can-do scale.

All scores related to questionnaire, test, and can-do scale measurements were computed to SPSS, and percentages, frequency, mean and standard deviation were calculated for all items in the questionnaire. Information collected from the questionnaire was used for the triangulation of data obtained from the test.

The tests were scored out of fifty; only the final-exam grades were taken into consideration. In the case of group E, all partial scores on grammar and reading comprehension were rounded to fiftieth in order to maintain direct comparisons. The analysis contained direct comparisons of means and standard deviation for the English 101 scores and the experimental test in order to determine the nature of changes since formal study of English ceased. The comparisons were bidirectional; one was within groups and the other between groups. The data were examined closely for those participants for whom both their English 101 scores and the scores for the test done as part of the present study were available, i.e. those in Group E. The differences between the two scores were calculated by means of two-tailed *t*-tests in order to pinpoint the level of significance. For Groups A, B, C, D, and E both the reliability coefficient, Pearson correlation and the *t*-value were calculated and presented in tables separately for each group. In addition, the degree of relationship between the instruments was measured by Pearson correlation coefficient. The cross-sectional comparison was done by means of ANOVA analysis. The alpha was set at 0.05 for every statistical test.

Items relating to can-do scales were computed by means of a *t*-test. The ratings were made on a 5-point scale (5= no difficulty, 4= some difficulty, 3= a lot of difficulty, 2= extreme difficulty, 1= not at all). Then the Cronbach's alpha for the two scales was calculated in order to pinpoint the degree of relationship between the two scales. Moreover, the mean and the *t*-value were calculated for each item to measure the differences between the past and the present reading abilities of the participants.

## **6. Results**

### *6.1 Use of English in Reading and Grammar (Questionnaire)*

#### 6.1.1 The informal use of English

The first part of the questionnaire included two items that assessed the participants' use of EFL. As expected, the results show heavy reliance and constant use of Arabic in comparison with English. It is apparent that Arabic is used more frequently than English in general. The result regarding the use of Arabic is spurious. It is expected to be 100% but it seems that some students thought of using formal Arabic at home. At homes where the family members speak Arabic, there is no choice to use any other language. The question about using English outside refers to the communicative use of English.



Table 1. Languages used in daily communication

Questions	Always		Sometimes		Never		Mean	SD
	<i>F</i>	%	<i>F</i>	%	<i>F</i>	%		
1- I speak Arabic at home.	141	70.1	53	26.4	7	3.5	1.333	.541
2- I speak English outside home.	8	4.0	102	50.7	91	45.3	2.41	.568

Such a result is expected because Arabic is the official language in Saudi Arabia and people are not forced to use English regularly. However, the results show that the informal use of English does not protect against English attrition. Although the question about using English outside the home is somehow general, it provides a clear picture of how often English is used. However, it appears that the use of English is so limited that it might have no effect on the participants' performance. As expected, Arabic (70.1%) is used more regularly than English (4.0%). In their homes, the family members speak Arabic so there is no choice but to use it constantly.

### 6.1.2 How English is Used

This measure consists of three items pertaining to specific activities dealing with the use of English in everyday life. The focus was on the informal use of English in order to get an idea of the nature of English use since formal instruction ceased. Out-of-school contact with English was estimated in order to portrait the participants' frequent and intensive use of English. In response to the question whether they read English newspapers or not, 3.5% of participants indicated that they read constantly, and 36.3% that they read from time to time. It is not surprising to find that the majority, 60.2%, did not read at all.

Table 2. Informal use of English

External sources of English use	Always		Sometimes		Never		Mean	SD
	<i>F</i>	%	<i>F</i>	%	<i>F</i>	%		
1- I read English magazines or newspapers.	7	3.5	73	36.3	121	60.2	2.567	.562
2- I use English in writing e-mails.	26	12.9	41	20.4	134	66.7	2.537	.714
3- I watch untranslated English TV programs.	47	23.4	114	56.7	40	19.9	1.965	.658

In the next phase the participants were asked to indicate how often they use English in writing e-mails. The result show that 12.9% of the participants use English frequently whereas 20.4% use it on occasion. However, 66.7% indicated that they never use English in writing and this might be the result of two things: They either did not have access to the internet or they might have lost proficiency in English. When the participants were asked about watching TV programs, a high proportion, 23.4%, revealed that they did so constantly, 56.7% did so occasionally, but 19.9% never did. These high ratings of language exposure might be the result of watching TV for the sake of entertainment rather than to be exposed to

English. However, these items did not yield very fruitful results for two reasons. First, language contact was not quantified precisely in hours or minutes as was done in Bahrck's study (1984). Second, the focus was on general aspects of informal use of English, rather than on carrying out specific tasks. The most important information gained from the questionnaire is that there was a notable lack of participation in activities requiring the use of English.

### 6.1.3 Attitude towards English

In order to examine the participants' attitudes towards English and their motivation to master it, they were asked three questions about the importance of English, the learning of English and the utility of English. The results are given in Tables 3 and 4.

Table 3. The participants' attitudes towards English

Questions	Agree		Neutral		Disagree		Mean	SD
	<i>F</i>	%	<i>F</i>	%	<i>F</i>	%		
1- English is an important language.	179	89.1	12	6.0	10	5.0	1.169	.511
2- Learning English is easy.	133	66.2	57	28.4	11	5.5	1.621	.897

The results show that the participants have positive attitudes towards English, and that most (66.2%) think that learning English is easy. The overall picture is one of participants being willing to learn English since 89.1% realize its importance for everyday communication. It is expected that those learners would persist in fighting attrition but unfortunately the test results showed that this was not the case.

### 6.1.4 The utility of English

The answers the participants gave to this part of the questionnaire provide an additional dimension to their attitudes toward English. In response to the item concerning English being useful, they state that English is important especially for talking with foreigners who speak English (76.1%), traveling (66.2%), jobs (50.7%), reading (41.8%) and studying (38.8%) respectively. All in all, it appears that the participants realize the usefulness of English and this might increase their motivation to retain it.

Table 4. Participants' estimation of the usefulness of English

- English is useful in ...	Agree		Neutral		Disagree		Mean	SD
	<i>F</i>	%	<i>F</i>	%	<i>F</i>	%		
1- studying.	78	38.8	119	59.2	4	2.0	2.204	.971
2- reading.	84	41.8	108	53.7	9	4.5	2.119	.972
3- job.	102	50.7	96	47.8	3	1.5	1.970	.994
4- traveling.	133	66.2	65	32.3	3	1.5	1.661	.935
5- talking with foreigners who speak English.	153	76.1	44	21.9	4	2.0	1.457	.830

Global self-evaluation of grammar and reading abilities at the moment of the experiment test were examined. The participants were asked to estimate their knowledge of grammar, vocabulary and reading comprehension. As mentioned above, this type of research instrument was designed to reveal the correlation between their actual proficiency and their perceived one. The estimation of vocabulary knowledge is of important in the interpretation of their knowledge of reading comprehension as this might have deteriorated as a result of their low command of vocabulary. Although the estimation of their knowledge in grammar, vocabulary and reading comprehension was limited and dependent on self-evaluation, it was suggestive.

One item asked the participants to reflect on their English language abilities Table 5. The self-evaluation shows clear attrition in vocabulary than in reading comprehension and grammar. However, about 78% of participants thought that their command of grammar was not adequate to probe against attrition. In other words, they had trouble retaining information about grammar.

Table 5. Participants' self-evaluation of their current English language proficiency

<b>-I feel that my English language becomes worse after the termination of English 101 course especially in ...</b>	<b>Agree</b>		<b>Neutral</b>		<b>Disagree</b>		<b>Mea n</b>	<b>SD</b>
	<i>F</i>	<i>%</i>	<i>F</i>	<i>%</i>	<i>F</i>	<i>%</i>		
1- vocabulary.	57	28.4	96	47.8	48	23.9	2.19 4	.852
2- reading comprehension.	38	18.9	57	28.4	106	52.7	2.09 4	.682
3-grammar.	78	38.8	85	42.3	38	18.9	2.03 4	.902

The study participants' self-judgment of their abilities shows that they have misconceptions about the self-evaluation process. They have to be taught how to evaluate accurately and fairly. There were discrepancies between the self-evaluation and the test results. They don't have the same self-assuredness they once had. Their knowledge of vocabulary is shallow and limited which might be responsible for the attrition in reading comprehension. However, the participants' evaluations did not differ much between the three skills as it seems to do according to the means but the percentages show that more (38.8%) reported a loss in grammar than did for reading comprehension (18.9%).

#### 6.1.5 Difficulties in Reading Comprehension

Of special interest here is what contributed most to reading difficulties during the participants' study of English 101, and the participants' assessment was that it was comprehension (44.3%). It is clear that the participants have some problems with the self-evaluation tasks since most are not able to assess their difficulties in reading since most ratings were neutral. This might be due to their not having had experience of such a type of self-assessment or it might be due to the length of time that has elapsed since their formal study of English and the present study. In other words, they might have forgotten what they

did in the English 101 course.

Table 6. Participants' assessment of their difficulties in reading comprehension

<b>-I had certain difficulties when I was reading in the English 101 course.</b>	<b>Agree</b>		<b>Neutral</b>		<b>Disagree</b>		<b>Mea n</b>	<b>SD</b>
	<i>F</i>	%	<i>F</i>	%	<i>F</i>	%		
1- Focus	50	24.9	121	60.2	30	14.9	2.35 3	.854
2- Boredom	47	23.4	114	56.7	40	19.9	2.33 3	.832
3- Vocabulary	68	33.8	101	50.2	32	15.9	2.16 4	.904
4- Speed	83	41.3	101	50.2	17	8.5	2.08 9	.954
5- Comprehension	89	44.3	87	43.3	25	12.4	1.99 0	.938

### 6.2 Self-Reported Data (Can-Do Scales)

The participants indicated their reading proficiency at the moment of the experiment test and at the end of the English 101 test. The Cronbach alpha for the two scales, i.e. now and then, is presented in Table 7.

Table 7. Reliability, correlation and t-value of can-do scale for reading comprehension

<b>Research instrument</b>	<b>Mean</b>	<b>SD</b>	<b>Cronbach alpha</b>	<b>Sig.</b>	<b>Pearson correlation</b>	<b>Sig.</b>	<b>t-value</b>	<b>Sig.</b>
Can-do past	3.016	.651	.447	.001	.369	.001	.391	.696
Can-do now	2.996	.632	.553	.001				

The result shows that the two scales are reliable. The correlation between the can-do in the past and the can-do in the present is ( $r=.369$ ) and the level of significance is .001. This correlation is statistically significant and indicates the existence of a positive low and small relationship between the participants' estimation of their reading abilities in the past and in the present. The computed difference between reading in the past ( $m= 3.016$ ) and reading now ( $m= 2.996$ ) was not significant because the 2-tailed significance is higher ( $m=.696$ ) than .05. The null hypothesis is accepted and as a result we conclude that there is no difference between the participants' reading abilities at the time of sitting the English 101 test and at the present time. Accordingly, we conclude that their reading skills have remained stable over the years of nonuse.

Table 8. Means and *t*-value of can-do scale for reading comprehension

Tasks	Mean Now (A)	Mean Then (B)	<i>t</i> -value	Sig.
1- Read personal letters written to me in which the writer has deliberately used simple words and constructions.	3.457	3.084	2.937	.004
2-Read on store fronts, the type of store (e.g. “dry cleaning”, “bookstore”, “butcher”).	2.686	2.681	.040	.968
3-Understand newspapers headlines.	3.318	3.348	-.280	.780
4-Read personal letters written as they would be to a native speaker.	3.029	3.099	-.756	.450
5-Read and understand magazine articles at a level such as those found in “Time” or “Newsweek” without using a dictionary.	3.044	3.014	.392	.743
6-Read popular novels without using a dictionary.	2.815	2.935	-1.438	.152
7-Read highly technical articles in a particular field, making little or no use of a dictionary.	2.761	2.810	1.580	.562

The results of the statistical analysis presented in Table 8. Investigation of the *t*-statistics reveals that significant decreases in the participants’ proficiency appeared for most items. This signaled significant attrition in reading comprehension. When the comparison is carried out between the past and the present for all language aspects investigated, it becomes clear that attrition occurred in English as a whole more than in the individual items. On the level of each individual item, the results are as follows: The first item which questioned the participants’ reading ability in reading personal letters with simple words has a 2-tailed significance of less than .05, which means that the participants were better in the past than in the present. In contrast, the other items have 2-tailed significances which are higher than .05, and so there is no significant difference between the participants’ reading abilities in the past and the present as measured by the *t*-test. In other words, there is no attrition in reading comprehension. Following the period since formal study of English, the participants rated themselves less proficient on certain tasks, for example reading text on store fronts and technical articles. Other items, such as understanding newspapers headlines, reading magazines and reading novels do not show significant deterioration. The *t*-statistics were not significant, indicating that there was no evidence for attrition in reading comprehension.

#### 6.2.1 Comparison of can-do scales for reading comprehension

The groups are compared in terms of participants’ reading abilities in the past and at the present time.

Table 9. Means of can-do scales for the four groups

Groups	Mean (past)	Mean (now)	<i>t</i> -value	Sig.
Group A (n=85)	3.053	3.092	-.573	.568
Group B (n=36)	2.936	2.992	-.622	.538
Group C (n=30)	3.166	3.004	1.306	.202
Group D (n=50)	2.920	2.831	.640	.525

The comparison shows that groups A and B have rated their reading abilities as being better now than in the past, and that groups C and D have experienced a deterioration of their reading abilities. Although the differences between the two ratings were not statistically significant, they give an indication of the participants' English language proficiency. This overestimation as can be seen in Table 9 might have been due to real differences between groups in terms of the original proficiency levels.

### 6.3 Comparison of the Experiment Test Over Time

The test yielded results that offer the clearest indication of the attrition of the participants' English skills. The results show that the test scores did not remain stable over time. On the contrary, the participants' performance fluctuated. The results, presented in Table 10, show that the mean for the English 101 test is higher than the mean of the experiment test which indicates English language attrition. This indicates a significant decline in the participants' mean scores over the one year since they ceased receiving English instruction.

 Table 10. Mean, SD, correlation and *t*-value of English 101 test and the Experiment Test for Group D

English 101 test scores (max. score 50)		Experimental test scores (max. score 50)		Corr.	Sig.	<i>t</i> -value	df	Sig. (2-tail)
Mean	SD	Mean	SD	.579	.001	7.473	49	.001
39.400	7.157	29.360	11.640					

The mean scores of the English 101 test vary significantly and this in turn suggests the appearance of English attrition among the participants after four years since they ceased receiving English instruction. The answer to the question as to what happens to English language skills when it is no longer used appears to be that grammar and reading skills deteriorate after learning ceases. The standard deviation shows too much variation within the experiment test. This variation also appears in the English 101 test but it is less than for the experiment test. The standard deviation is 7.157 in the case of the English 101 test and 11.640 in the case of the experiment test.

The results of the experiment tests are compared across the four groups and presented in Table 11. The cross-sectional comparison includes four groups and covers a time span from one to four years of no English instruction.

Table 11. ANOVA of English 101 test of the four groups

Participants	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	497.849	3	165.950	1.092	0.353
Within Groups	299228.131	197	151.919		
Total	30425.980	200			

There were no differences between groups concerning their performance in the experiment test as a result of the length of time without language instruction. In other words, the number of years without language instruction had no significant effect on language attrition.

Other factors between instruction and experiment test might be responsible for much of the results. Much of this is likely because the tests used were not standardized i.e. not professionally made and for this reason the results cannot be generalized beyond the present study. The comparison of the four groups revealed that while they all experienced English language attrition they did so in different proportions. The cross-sectional comparison makes it easy to derive an attrition rate for all the participants, and the rate is found to be similar to that suggested by Ebbinghaus. That is attrition of English language sets in quickly and then levels off.

## 7. Discussion

### *7.1 RQ1: What is the Effect of English Nonuse on the Attrition of English Reading Skills and Grammatical Knowledge?*

The differences between the mean scores in the two tests were a sign of deterioration in English proficiency, specifically showing that the participants' grammatical knowledge and reading skills had suffered attrition differentially. This finding is partially in accord with the results of previous studies (Bahrck, 1984; Godsall-Myers, 1981) which concluded that attrition as a function of language nonuse did occur. English attrition in grammar and reading comprehension might be the result of the lack of contact with the language. The participants indicated that their use of the language was weak and not regular. Although the study did not estimate language use precisely in hours, the result of the questionnaire showed a fair level of English use. English is much used in reading newspapers and magazines, followed by writing e-mails and this by watching English-language TV programs. Moreover, the majority of the participants indicated that they needed to use English in their studies and at work. While Moorcroft and Gardner (1987) found that language use had little impact on language attrition, the focus of the present study was lack of formal English language instruction due to having reached the end of a language course.

Another possible explanation for the result is that a mere four hours of learning English a week might result in shallow absorbing of the language. In addition, the only way for the participants to learn English was through formal instruction, with little opportunity to learn it through everyday interactions, be it at work, in leisure activities, while travelling and so on. Moreover, they had no exposure to English spoken by its native speakers in their language course. Some participants reported that they lost some of their language skills because they did not have the opportunity to talk with speakers of English. Others stated that English is a

language that requires follow-up practice and this was not available to them in the Saudi context, and thus the loss of English came as no surprise to them. In other words, the lack of instruction resulted in less, and less frequent, use of English and consequently in language attrition. The questionnaire elicited some possible explanations for this, with the participants nominating three major ones: studying English at intermediate level, not continuing with the formal study of English after the end of the English 101 course at university, and their using English only rarely.

### *7.2 RQ 2: What is the Attrition Rate in the Saudi Context?*

It is not surprising to find that the Saudi context is not so different from other contexts of FL learning. It was shown that attrition set in quickly, i.e. after one year of ceasing to receive English language instruction, and then the rate of attrition leveled off. This finding is in accord with Ebbinghaus's 'traditional forgetting curve. In the present study, attrition set in quickly and then leveled off four years after formal English language instruction ceased. Although researchers such as Weltens (1989) and Hansen, Umeda, & McKinney (2002) argue that Ebbinghaus's 'traditional forgetting curve' is not applicable to FL data generally, and only to high proficiency learners, our study found that it does indeed represent the experience of language attrition of Saudi learners.

### *7.3 RQ: 3 What aspect of English is More Vulnerable to Attrition, Reading Comprehension or Grammatical Knowledge?*

The participants' mean scores appeared to be high in grammatical knowledge and there were discrepancies between the tests and the self-evaluation data gathered via the questionnaire. Grammar was found to be more resistant to attrition than reading comprehension. Such findings can be seen as the result of a combination of factors. It was possible that the design of the English 101 course produced such results, since more emphasis was placed on grammar than reading. This is clearly attested in the English 101 test, which had more questions on grammar than on reading comprehension. Moreover, knowledge of grammar is easier to retain than reading comprehension skills as long as grammar is based on rules discussed throughout the course. By contrast, reading is usually based on unseen passages and requires vocabulary recognition. In addition, the English 101 test was in a multiple-choice format which might help the participants gain high scores in grammar rather than for reading comprehension. One remarkable conclusion to be drawn from the results is that the participants are negative in their self-assessment for grammar, all groups reporting heavy attrition in grammar during the periods following formal instruction. Regarding reading comprehension, the can-do scale is a clear portrait of the participants' original proficiency levels. The deterioration in the participants' self-assessment for grammar was interesting, in fact, it was the most significant finding of the present study and underlines the necessity of using standardized tests in future studies.

## **8. Pedagogical Implications and Conclusion**

This article is an extension of FL attrition research, specifically concerning grammar and reading comprehension. The outcomes of the present research carry important implications



for curriculum planning and syllabus design. Both need to be modified to incorporate these new insights. Instructional goals need to be redefined and more effective instructional practices devised. The outcomes of the present study suggest that knowledge of grammar is easier to maintain than reading comprehension and as a consequence there should be goals dealing with language maintenance that start from grammar and tackle other skills.

For this reason, it is suggested that the content of the tertiary level English 101 course has to be modified in two ways. First, the content should focus on developing communicative competence through conversations and reading passages especially when bearing in mind that students at the tertiary level are expected to use English in the workplace. Second, it is possible to devise two courses, one focusing on grammar and the other on developing communicative competence taught by native speakers of English. Such an approach would stand a chance of being more effective in slowing the rate of attrition. The findings imply that it is not necessary to focus on grammar in order to enhance the chances of maintaining English effectively. On the contrary, it is commonly known that successful language learning is not a matter of developing grammatical competence only but that other competencies need to be developed such as sociolinguistic, semantic and strategic ones. The study of foreign language attrition among Saudi female learners has clarified some common assumptions concerning both the rate of attrition and which language skills are likely to suffer attrition. While the findings are not conclusive it is hoped that they make a contribution to the field of language attrition.

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