Evaluating social media platforms as predictors for vocabulary attrition

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ABSTRACT

The aim of this study was to examine the impact of various predictors on foreign language vocabulary attrition. Uniquely, it introduces social media platforms as a new predictor to vocabulary attrition. The study examined a population of EFL (English as a Foreign Language) Saudi English major learners from two different universities in Saudi Arabia over three distinct periods, spanning both during and after the cessation of formal education. The participants were initially taught using traditional teaching methods in a reading course. Upon completing their formal education, they were included in WhatsApp and Telegram groups, where they were engaged in bimonthly language activities, with special focus on vocabulary, for eighteen months to enhance their exposure to the vocabulary they had studied during their undergraduate studies as English language majors. The findings revealed that participants reported six opportunities to use English vocabulary (in online games, while browsing the internet, in WhatsApp and Telegram groups, in watching movies, in private courses, and in college courses) with varying levels of interaction. The levels declined at a relatively slow rate, especially after graduation. Notably, the use of social media platforms demonstrated a more effective retention of productive vocabulary, underscoring these platforms as potent predictors of language attrition.

Contribution/ Originality: The area of foreign language vocabulary is rarely investigated, particularly regarding social media platforms as a contributing factor. This study revisited this area, and focused on previously unexplored variable of social media platforms, and benefited with the finding that social media platforms can potentially lead to effective retention of productive vocabulary, underscoring these platforms as potent predictors of language attrition.

1. INTRODUCTION

After decades of negligence, the field of language attrition has garnered considerable attention from numerous researchers (see: (Alharthi, 2012; Bahrick, 1984; Cohen, 1987, 1989; De Bot & Weltens, 1995; Hansen, 1999; Lambert & Freed, 1982; Quan, 2023; Weltens, 1987; Weltens, 1989; Weltens & Grendel, 1993)). Initially, the primary focus was on studying memory mechanisms to identify the possible reasons for the retention or loss of language over time through psycholinguistics and second language acquisition (SLA) research. This gave rise to a new subfield within second language acquisition known as language attrition. Researchers then delved into the decline of language skills and sub-skills, with a particular emphasis on vocabulary attrition. This involved in-depth investigations into which types of lexical knowledge are more susceptible to attrition. However, there remains a scarcity of research explaining this phenomenon (Schmid & Mehotcheva, 2012) more than 54 years after researchers first began to examine L2

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attrition as a separate field (Weltens, 1987). Since then, there has been a consensus among researchers regarding the need for further investigation and standardization to gain a clearer understanding of how L2 attrition occurs. L2 attrition involves the loss of various aspects of language components, such as sound, grammar, vocabulary, or language skills (listening, reading, writing, speaking). Among the most extensively researched variables in the foreign language attrition literature are exposure to language and age. Schmid (2023) points out that foreign language vocabulary attrition and maintenance has not been give much of attention and especially in terms of pedagogical policy. Unlike first language attrition which is a field that started to flourish (Schmid, 2016).

Research on language attrition began in the 1980s when Oxford (1982) discussed various variables and predictors for foreign language decline. This study particularly emphasized the avoidance of language use as a significant predictor of language attrition. A pivotal article in this field was published in the last decade by Bardovi-Harlig and Stringer (2010). The significance of this study lies in its detailed, systematic methodological description of predictors and variables, such as the nature of input language, level of attainment, attitude, duration of exposure to the language, and motivation. the study provided a thorough analysis of the challenges in designing a comprehensive framework that can be used by other researchers to gain a realistic understanding of foreign language attrition processes. They also advocate for the use of valid and reliable measurements based on earlier contradictory findings.

A very recent study conducted by Ni and Jin (2020) explored three predictors of language attrition (valence dimension, arousal dimension, and dominance dimension). the study discovered that vocabulary attrition could be predicted significantly, with valence dimension having the most significant impact. Different attrition researchers paid special attention to fundamental issues in attrition (e.g., (Bardovi-Harlig & Stringer, 2010; Köpke, 2007; Olshtain, 1989; Schmid & Dusseldorp, 2010; Weltens & Cohen, 1989; Weltens & Grendel, 1993)). Among various factors affecting vocabulary attrition, the amount of exposure learners has to learned/acquired vocabulary has been extensively studied. Previous findings have shown that discontinuing formal education for a period ranging from three to fifty years significantly impacts vocabulary attrition (Bahrick, 1984; Bierling, 1990; Hoang & Nguyen, 2023; Morshedian, 2008).

Vocabulary is considered an important component of language learning, and learners strive to expand their vocabulary when acquiring a new language. Therefore, this research focuses on how learners forget acquired vocabulary and whether this process occurs quickly or slowly. The domain of foreign vocabulary attrition and maintenance has undergone extensive investigation (e.g., (Abbasian & Khajavi, 2010; Cohen, 1989; Hansen, 2011; Ni & Jin, 2020; Weltens & Grendel, 1993)). However, there has been no prior research examining the link between existing vocabulary contact through social media platforms and attrition, particularly in the Saudi context. This presents an opportunity for researchers to explore other linguistic variables that may shed more light on various aspects of post-instructional competence, which directly influence the retention or maintenance of lexical knowledge (Ulfiati, 2022). Thus, the present study aimed to address this gap by investigating a new variable, social media platform usage, which has been widely shown to affect learning in general and is likely to impact vocabulary attrition or retention.

To provide a clear theoretical framework for understanding the attritional processes affecting vocabulary, the next section provides a concise review of studies related to foreign language vocabulary attrition by EFL graduate learners.

2. LITERATURE REVIEW

Research on language attrition has identified two sets of factors that may predict the retention of foreign language skills and knowledge in short and long term: inter-learner and external factors. Inter-learner factors include age at the onset of attrition and the level of proficiency, while external factors include the duration of non-use, degree of instruction, and length of exposure to the foreign language.

To make significant improvements in maintaining foreign languages, it is important to examine the characteristics of learners' language interaction and application. Researchers should also be able to control for learning factors that could impact long-term changes in ability. There is strong evidence that contact with the language plays a crucial role in maintaining foreign language vocabulary knowledge once learners end formal instruction. Extensive reviews have highlighted that factors such as opportunities to use the language and the degree of exposure to it influence the extent of vocabulary attrition (Alharthi, 2012). Researchers have strongly argued that examining the impact of language use on attrition is essential. It is an established fact that frequent practice and exposure result in better learning and proficiency, which, in turn, predicts longer vocabulary retention.

However, few studies have specifically examined how language use affects foreign language attrition. Bahrick (1984) and Harley (1994) developed questionnaires to assess learners' language contact, yielding mixed results regarding their relationship with vocabulary retention. Nevertheless, methodological issues limit the validity of their findings. Both studies used a cross-sectional approach, examining language contact at one time point after instruction ended. A longitudinal approach that tracks changes in input for individual learners over time would provide more accurate insights. Additionally, Bahrick (1984) relied on self-reports while Harley (1994) used self-rated ability scales, which may not accurately reflect actual language competence.

In contrast to previous research, the current study employed the mixed methods research design, with data collection tools like questionnaires, interviews, and vocabulary tests, to measure language contact and language achievement more realistically. This different approach aimed to explore the correlation between language use and vocabulary attrition. Moreover, the study focused specifically on vocabulary rather than general language skills. The findings could help develop effective vocabulary retention strategies, and provide valuable information about learners' vocabulary size and usage, with various practical implications. If learner variables influence language contact, it is important to explore this variation in vocabulary attrition and retention in detail. Based on the above, the current research addresses these two main questions:

RQ1. What changes can occur after ceasing formal education in claimed English use?

RQ2. To what extent is the use of social media platforms related to EFL vocabulary attrition?"

3. METHODOLOGY

The current study employed a longitudinal design, a research design that tracks participants over time. This type of design is susceptible to participant attrition, where participants drop out of the study. Therefore, data were excluded from participants who missed the baseline session.

3.1. Participants

The original participant pool consisted of 96 male participants from two different universities in Saudi Arabia who were in their last semester of their bachelor's degree. However, by the end of the study, only 65 participants remained. These participants were enrolled in an intensive reading course during a four-month spring semester as a requirement to complete their bachelor's degree in the College of Arts. English served as the medium of instruction throughout the entire bachelor's degree program.

All participants had a shared experience of learning English as a foreign language (FL) from primary to secondary school before enrolling in the college. They had a total of six years of FL instruction during the school study. A background questionnaire revealed that none of the participants had ever lived in an English-speaking country before. Therefore, it can be concluded that the participants in the present study had received similar education and held similar cultural background. All of the participants were having teaching jobs after they finished their formal education.

3.2. Instruments

3.2.1. Teaching Methods

The participants received instruction in the usual manner. However, at the end of their formal education, they were added to WhatsApp and Telegram groups for increased exposure to vocabulary. They were engaged in various bimonthly language activities and exercises, such as fun games, guessing the meaning of different words in contexts, chats, and discussions on various topics. Importantly, they purposefully used the same lists of vocabulary from their previous study. WhatsApp and Telegram applications are the most popular platforms used in Saudi Arabia by EFL learners (Al Fraidan & Al-Harazi, 2023; Alamer & Al Khateeb, 2023).

3.2.2 The Questionnaire

A self-reported questionnaire was one of the main tools. It was used to assess the participants' use of existing vocabulary in various situations. The questionnaire was administered before and after the participants completed an intensive reading course. It was used in three different intervals of time. On the first occasion, the participants received the first version of the questionnaire, which contained six items inquiring about their vocabulary usage in different situations. Participants rated their frequency of use on a scale of 1 (less than once a day) to 5 (every day). On the two follow-up occasions, all participants from were invited to complete the second version of the questionnaire. This version closely resembled the first version, allowing for comparisons over time. However, slight alterations were made to the wording of some items concerning language contact. The items in Questionnaire 2 were designed to represent various opportunities to use English outside the classroom.

3.2.3 The Interview

Questionnaire sessions were immediately followed by retrospective interview protocols, a method used to gather information about past events and experiences. In this study, interviews were used to collect information about the participants' experiences with English before and after completing their formal education. The interviews were semi-structured, meaning that the interviewer had a set of questions to ask but could also ask follow-up questions to obtain more information. The interviews were conducted at three different time intervals: before the course, after the course, and eighteen months after the cessation of their formal education. At each point of time, the participants were asked about their use of English, their confidence in English skills, and their experiences with English outside of the classroom. Participants were also encouraged to provide deeper insights into their responses.

The interviews provided valuable insights into the participants' experiences with English. The findings from the interviews suggest that the participants' use of English and their confidence in their English skills improved after completing the intensive reading course. The findings also indicate that the participants continued to use English outside of the classroom after completing the course.

3.3. Procedure

The researcher distributed questionnaires to participants during their regular class meetings, providing clear instructions on how to complete them, answering any questions participants had. Participants were assured that their responses would remain confidential and were encouraged to be honest. The questionnaire took approximately 20 minutes to complete, giving participants sufficient time to provide relevant information.

The researcher then conducted interviews with six participants, immediately following the completion of the questionnaires. The researcher tried not to disclose the precise focus of the research during the interviews. The interviews were not time-limited, and each session lasted approximately 25 minutes. At the third time interval, eighteen months after ceasing formal education, all participants completed the same questionnaire as they had done after the completion of graduation, with the researcher present to ensure that participants filled in all required information.

The researcher also conducted follow-up interviews after the second and third Intervals with randomly selected participants, and the interview items were essentially identical. The interviews were scheduled at times convenient for the participants, with six randomly selected participants taking part. The interviews were conducted in Arabic and lasted between 15 and 20 minutes.

3.4. Data Analysis

The researcher used statistical software called SPSS 22.0 to analyze the data from the questionnaire and retrospective interviews. Descriptive statistics, such as the mean and frequency of vocabulary use in various contexts, were calculated. The analyzed data demonstrated a normal distribution. Friedman tests were employed to compare the data collected at the three time points. Post hoc Wilcoxon Matched-pairs tests were used to pinpoint significant differences. Additionally, multiple regression analysis was used to assess how each predictor contributed to attrition in the receptive and productive vocabulary tests.

Participants' personal views and comments from the retrospective interviews were transcribed and analyzed. These views and comments were consistent with the data from the questionnaire, suggesting data reliability. In simpler terms, the researcher used various statistical methods to analyze data from questionnaires and retrospective interviews. Significant differences were found in participants' scores over time, which were related to several predictor variables. The researcher also noted that participants' personal views and comments aligned with the questionnaire data, indicating data reliability.

4. RESULTS AND DISCUSSION

The researcher was particularly interested in any changes in the participants' vocabulary usage after ceasing formal education. Therefore, they compared the results of the questionnaire and interviews at three different time points to identify any changes. The researcher discovered significant differences in the participants' responses at Time 3 compared to Time 2. Participants reported using English less frequently after eighteen months of ceasing their formal education. The researcher believes that this decline in English usage can likely be attributed to several factors, including a lack of opportunities to use English, a decrease in motivation, and the possibility that participants may have forgotten some of the vocabulary they learned during the intensive reading course.

Based on these findings, the researcher concludes that discontinuing formal instruction can lead to a reduction in English usage. It is recommended that teachers provide opportunities for their students to use English outside of the classroom and find ways to maintain their students' motivation.

Table 1. Friedman test with scores of participants exposed to English over time.

Vocabulary use	Chi-square	p
Vocabulary use in online games	5.40	0.066
Vocabulary use in Internet browsing	16.14	< 0.001
Vocabulary use in WhatsApp and Telegram groups.	1.66	0.44
Vocabulary use in watching TV/Films	12.43	0.002
Vocabulary use in private courses	24.17	< 0.001
Vocabulary use in college courses	47.645	< 0.001

The data in Figure 1 show that participants rated their informal use of English lower over time. In general, participants rated all variables below the middle of the scale, except for WhatsApp and Telegram groups, which were rated from "once a week" to "several times a week." Table 1 also demonstrates how most items significantly decreased, as evidenced by the results of the Chi-square tests. However, the same trend was observed in terms of using vocabulary in WhatsApp and Telegram groups and playing online video games with friends, although these changes were not statistically significant.

In other words, participants used English less frequently in informal activities after discontinuing formal instruction, except when using WhatsApp and Telegram. This is likely due to several factors, including a lack of opportunity to use English and a decrease in motivation. The researcher recommends that teachers provide opportunities for their students to use English outside of the classroom through social media platforms and find ways to maintain their students' motivation.
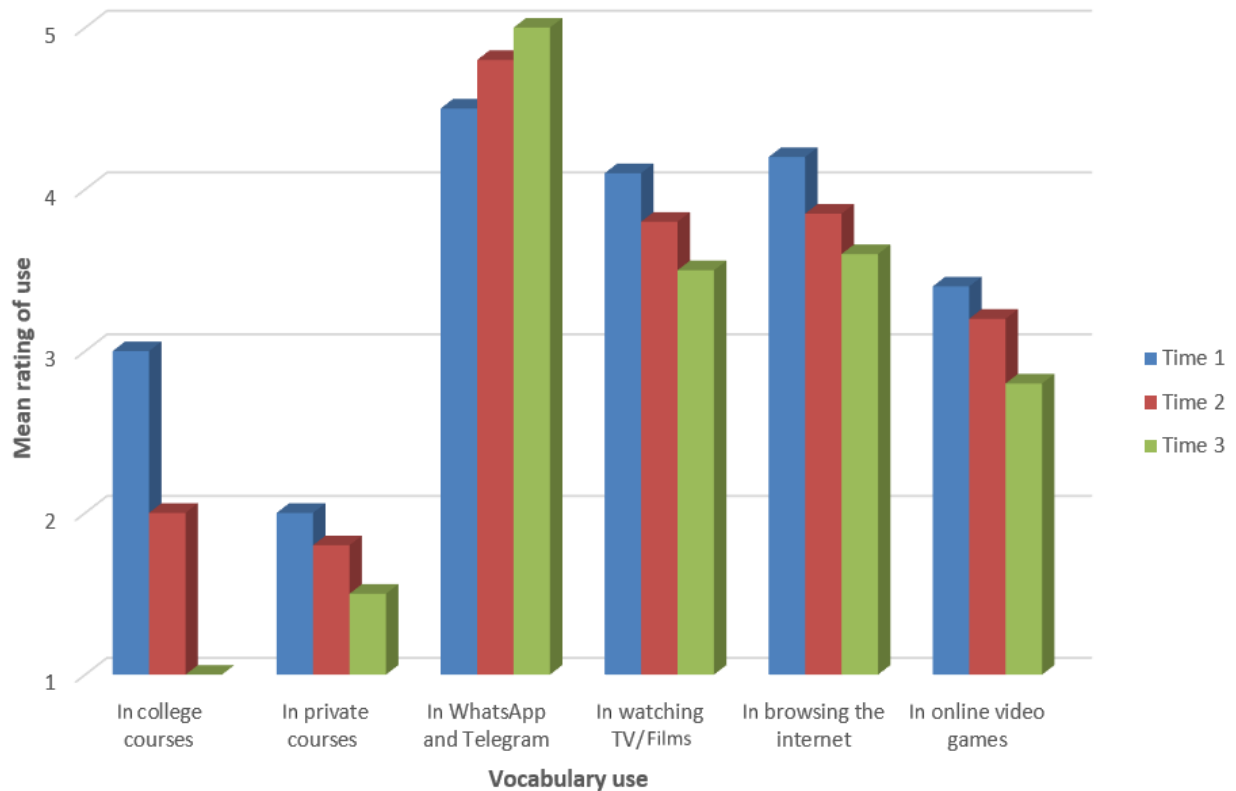

Figure 1. Vocabulary use at Time 1, Time 2 and Time 3.

The results indicated that participants were not enthusiastic about using the vocabulary lists from their college course textbooks outside the classroom. It is likely that they had more access to these materials in the classroom (ratings at Time 1 were above the midpoint of the scale). Interestingly, we observed a decline in this type of practice. This decline could be attributed to the participants' reduced exposure to formal language assessment. This is supported by the qualitative protocols analysis, where participants reported that this was a significant factor contributing to their low ratings in this category.

"I only use vocabulary lists from textbooks to revise for college examinations. I stopped that since I finished college because no more examinations are after me."

Some other participants said that such materials are no longer available, so they cannot practice.

"After I graduated, I misplaced my notes and lists. So I couldn't practice after graduation."

The statement above confirms the reason why participants do not prefer to use vocabulary from textbooks. This observation is consistent with the findings of an earlier study, which indicated that participants rarely took vocabulary notes after formal instruction ended (Alharthi, 2012).

The study also identified a decline in the use of vocabulary through private courses. This decline is likely due to the consistently low number of participants who opted for this option throughout all three assessment times. One possible explanation for the limited participation in private courses is that participants are already burdened with their teaching responsibilities. For instance, they may be tasked with preparing and organizing classes, creating exams, and grading student work. This workload could account for their inability to allocate time for private courses.

This explanation is supported by comments made during interviews with participants. They expressed that their busy teaching schedules make it challenging for them to engage in private courses.

"I don't have time to go to private courses. I am already overloaded with my teaching loads, marking my students' assignments, preparing my lessons…etc."

The ratings of using of vocabulary while browsing the Internet indicate that participants use them less frequently, approximately once a week, compared to the previous assessment at Time 2. They prefer electronic reading materials over other types. This preference is further supported by the interview data, which explicitly mentions their fondness for electronic materials."

"I use the vocabulary I learned from college by reading articles while browsing the internet as it is easier than print texts."

"One useful way to practice my vocabulary is by reading English textbooks related to my field such as teaching English language through the Internet."

The quotations provide evidence that EFL graduates use the internet to access a variety of authentic materials. This suggests that technology offers a more accessible means for them to engage with language input compared to traditional paper-based media.

The usage of WhatsApp and Telegram groups showed a slight increase in vocabulary utilization among the participants. Although this increase was not statistically significant over time, their frequency ratings were above the midpoint of the scale. This indicates that vocabulary is more frequently used in receptive tasks than in productive ones. This preference stems from the participants' continued use of both applications after graduation, as they recognized the value of these tools for their careers as EFL teachers. Thus, they maintained their existing vocabulary by using these apps. These preferences were also expressed in the retrospective reports.

"I really liked the WhatsApp and Telegram groups. They gave me great chances to use various English vocabulary by chatting with friends, discussing different topics, debating several issues and doing some fun tasks with our instructors."

"There is different vocabulary I learned from the two groups. They kept me refreshed and up to date. They also were useful for my teaching as some vocabulary I forgot from college were back to my memory."

The participants' self-ratings of using their vocabulary through online video games with friends decreased after graduation, although not significantly. This could be because they feel they have transitioned to a new phase in life, marked by heavy job responsibilities that may limit their time for online gaming. Therefore, this type of practice is entirely dependent on the participants' personal motivation.

In response to RQ1, there is a significant decline in most opportunities to practice using vocabulary over time, except for using WhatsApp and Telegram, which remains consistent. There is a nearly significant decrease in using online video games with friends. These results align with Bahrick (1984) findings. However, it is challenging to determine how the extent of these practice opportunities and activities at Time 2 or Time 3 may influence vocabulary attrition, both receptively and productively. The following section will address this issue.

RQ2. How far does using social media platforms relate to EFL vocabulary attrition?

The most critical point of this study is to demonstrate how various variables interact with vocabulary use over time. This is crucial in determining whether they are strong predictors of attrition scores. To achieve this, the researcher employed various multiple regression analyses. The results indicate that even after ceasing formal education for eighteen months, the ratings of vocabulary use remained consistently low, as presented in Table 2.

The study found that the use of social media platforms, such as WhatsApp and Telegram, is the only predictor that significantly affected the retention of productive vocabulary test scores. The standardized coefficient value of 0.325 indicates a positive correlation, suggesting that the more frequently participants used social media platforms, the better they retained their productive vocabulary test scores. Figure 1 supports this finding and shows that internet browsing was still a popular activity among participants, being rated above the midpoint of the scale.

Table 2. Attrition rates for receptive & productive vocabulary tests at time 3.

Vocabulary uses time 3	Dependent variables	Standardized coefficients beta	p
Use in college courses	Receptive vocabulary test: Time 3 - Time 1	-0.075	0.814
	Receptive vocabulary test: Time 3 - Time 1	-0.004	0.866
Use in private courses	Receptive vocabulary test: Time 3 - Time 1	-0.034	0.612
	Receptive vocabulary test: Time 3 - Time 1	-0.052	0.568
Use in WhatsApp and Telegram	Receptive vocabulary test: Time 3 - Time 1	0.144	0.455
	Receptive vocabulary test: Time 3 - Time 1	0.325	0.029
Use in watching TV	Receptive vocabulary test: Time 3 - Time 1	-0.255	0.302
	Receptive vocabulary test: Time 3 - Time 1	-0.233	0.112
Use in Internet browsing	Receptive vocabulary test: Time 3 - Time 1	0.113	0.708
	Receptive vocabulary test: Time 3 - Time 1	0.244	0.299
Use in online games	Receptive vocabulary test: Time 3 - Time 1	-0.011	0.951
	Receptive vocabulary test: Time 3 - Time 1	-0.139	0.482

The study suggests that EFL graduate teachers clearly prefer technology to traditional methods for practicing known words. This is supported by the participants' preference for technology in using WhatsApp and Telegram and browsing the Internet. The study also implies that motivated learners can use chat programs to practice their oral and written communication skills, which can lead to better retention of productive vocabulary test scores. The study found that some individual scores on the productive vocabulary test improved over time. Qualitative analysis of the interviews revealed that these participants were strongly committed to maintaining their existing vocabulary by engaging in authentic reading and speaking activities online. This clearly demonstrates how they retained their productive vocabulary between Time 2 and Time 3.

The study's findings demonstrate the advantage of using social media platforms in the target language to help learners retain their productive vocabulary knowledge. However, the study also found that the rest of the variables were not good predictors of vocabulary maintenance over time, whether receptive or productive. This is likely due to the limited opportunities for the participants to practice English outside of formal education. The study's findings are in line with Harley (1994); Thamer Alharthi (2020); Alharthi, Bown, and Pullen (2020) and Schmid (2023) who found that an increased number of opportunities to use a foreign language is linked to better maintenance and language development. However, Harley's study did not measure the subjects' performance in achievement or proficiency tests, which may have led to an underestimate of the impact of language use on vocabulary attrition. The study's results concerning the role of social media platforms in maintaining productive vocabulary test performance represent an innovative contribution to the field of language attrition research. As far as the researcher is aware, no prior study has incorporated social media as a predictive element in the context of foreign language vocabulary attrition.

In summary, the study found that the use of social media platforms is a strong predictor of productive vocabulary test retention over time. The use of social media platforms may provide EFL learners with opportunities to use English in a communicative context, which can help prevent vocabulary attrition.

5. CONCLUSION

This study investigated the differences in participants' use of vocabulary outside of EFL classes and after graduating from college. The participants were asked to rate their frequency of use of English in a variety of activities, including using WhatsApp and Telegram, browsing the internet, watching English movies and TV shows, and playing English video games.

The results showed that there was a significant decline in the participants' use of English in all activities except for using WhatsApp and Telegram. This suggests that informal language use, such as chatting with friends on social media, is the most effective way for EFL learners to maintain their English skills after they leave formal education.

The study also found that the use of English in online video games was the only variable that significantly affected receptive vocabulary test attrition. This suggests that playing online video games with friends can help EFL learners

retain their vocabulary knowledge. Teachers are advised to create chances for students to utilize English beyond the classroom using social media platforms and to discover methods to sustain their students' motivation. This recommendation underscores the importance of fostering language skills and keeping students engaged through social media.

Overall, the findings of this study suggest that the use of social media platforms is an important factor in preventing vocabulary attrition in EFL learners. EFL learners who want to maintain their English skills after they leave formal education should try to use English in informal settings, such as chatting with friends on social media and playing online video games. This highlights the importance of integrating social media platforms into learning activities and recommending them as useful tools for retaining vocabulary for a longer time after ceasing formal education.

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