



The Effect of L1 Glosses for Abstract Words on English Reading Comprehension

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ABSTRACT

This mix-method research attempts at extending our knowledge about the impact of L1 glossing (Persian) for abstract words on reading comprehension in English. It also examines learners' attitudes towards abstract glossed words while engaged in reading. Sixty students in Iranian language institutes were recruited to participate in the quantitative part of the study. Twenty participants from those who involved in the first phase were interviewed in the qualitative part of the study. In the quantitative phase of the study, the participants were placed into control and experimental groups. They were taught for eight sessions. The participants in the control groups had access to L2 glosses (English) for abstract words whereas the participants in the experimental groups were provided with L1 glosses. Using T -test the data were analyzed. The quantitative findings revealed that those who read L1 (Persian) glossed texts outperformed their counterparts who received L2 glosses in reading comprehension. The qualitative showed that participants held a positive attitude towards L1 glosses for abstract words. This attitude was associated with lack of ability in predicting the meaning of abstract words and reinforced by the word-by-word decoding strategy for reading comprehension and time limitation. The implications of the study are discussed.

INTRODUCTION

For EFL students reading serves as a medium through which they learn about the language and language itself (Celce-Murcia & McIntosh, 1979). Reading is also an important source of language input for EFL learners whose access to language is limited. Learners can use the reading sources to learn new thing outside of the classroom. Reading the authentic materials is frustrating for English language learners when their knowledge of vocabulary is limited. Glossing has gained popularity for enhancing reading comprehension of learners and shown to help them in different ways. Glossing refers to a brief definition or equivalent of unknown words in L1 or L2 in a text (Nation, 2002). Glossing facilitates comprehension by presenting the accurate meaning of words that might be interpreted wrongly by the readers (Nation, 2002); they also facilitate immediate access to the meaning of unknown words, thereby saving the time of the readers and decreasing

the interruption of the reading process in comparison to searching for the word in a traditional dictionary (Ko, 2005). Availability of glosses can promote the autonomy of the learners (Nation, 2002). Much has been conducted on the impact of L1 and L2 glosses on reading comprehension. However, the results of the studies have been inconclusive. The present study attempts to extend our knowledge on glossing by comparing the effect of abstract L1 and L2 gloss on reading comprehension of EFL learners and exploring learners' attitudes towards abstract glossed words while engaged in reading.

The relationship between vocabulary and reading comprehension is well established (e.g. Rott & William, 2003; Pretorius, 2006, Ko, 2012). Over the last decade, different researchers have glossed the words in different ways to investigate their effects on reading comprehension. For instance, computerized and multimedia glosses versus paper-based glosses (Tylor, 2009; Lee & Lee, 2015) or glossing format (Gettys, Imhof., & Kautz, 2001) the degree of elaboration (for instance whether glossing need to be accompanied by pictures or not (Sadeghi, Khezrlou & Modirkhameneh, 2017). Recently, researchers have turned their attention to the impact of L2 glosses versus L1 glosses on this assumption that preferences of students for the language of glossing can facilitate Reading comprehension (Alharbi, 2018; Bell & LeBlanc, 2000). Researchers argue that the definitions of words are of necessity for comprehension because they can provide the readers with additional information where contextual clues are not sufficient (Ercetin, 2003; Ko, 2012).

Available studies on glossing show that Learners tend to use glossed words to make sense of unknown words. Language learners may experience difficulty in processing information when they are abstract or too difficult to be associated with the prior knowledge (Taylor, 2014). Compared to concrete words, learners process abstract at the lower speed (Mestres-Missé, Münte & Rodriguez-Fornells, 2014). They can discover the meaning of concrete word faster than abstract word meanings even when matched on context availability. According to Jacobs (1994) glossed word can "strengthen the bottom-up component of the reading process (p. 115). This way, they can deal with comprehension difficulty. Drawing upon notice gap theory proposed by Schmidt and Frota (1986), Taylor (2014) argues that when L2 learner notices the gap in understanding the text or a word, he may start comparing between the two languages, L1 and L2, to take a better cognitive advantage of the L1 in L2 learning. In doing so, the learner uses L1 glosses to facilitate the bottom-up processing of the unknown items.

The review of the studies on the effects of L1 and L2 gloss types has been inconsistent. Some scholars found that L1 glossing can enhance reading comprehension (Hashemiana & Fadaei, 2012, Kongtawee & Sappapan, 2018; Fahimipour & Hashemian, 2013; Tseng, Yeh & Yang, 2015). Fahimipour and Hashemian (2013) compared the effects of L1 Persian glosses with L2 English glosses on the reading performance of sixty Iranian students. They found that those who were provided with native language gloss outperformed their counterparts who had access to L2 English glosses. Tseng, Yeh and Yang (2015) investigated the effect of online glossing or reading comprehension among fifty English students. They found that highlighting vocabulary and adding L1 (Chinese) explanation helped the students with recognition and meaning of unfamiliar words. However, some researchers found no significant difference between L1 gloss and L2 gloss groups (Cheng & Good, 2009; Azari, Abdullah, Bee Hoon, 2012; Lee & Lee, 2015; Jung, 2016, Alharbi, 2018). In a recent study, Alharbi (2018) examined the performance of learners on reading comprehension under three condition, L1 Arabic glosses, L2 English gloss, and L1 and L2 glosses, with a no-gloss condition. The study found no significant differences between the effect of L1 and

L2 glossing on reading comprehension performance. Moreover, the learners reported preferring glossed text to non-glossed text.

In another study, Farvardin and Biria (2012) investigated the effect of L1 glossing, L2 glossing and multiple-choice glossing on reading comprehension and found that L2 glossing can enhance learner reading comprehension more than L1 glossing. They also added that L1 glossing was more effective than L2 glossing in the immediate post-test reading comprehension while these results were vice-versa in delayed post-test.

Despite the conflicting results on the effect of glossing on Reading comprehension in recent literature, there is a consensus among researchers that glossing is still an important aid in developing the reading comprehension of foreign or second language learners. So far, no research has investigated the effect of abstract L1 glossing on reading comprehension. The reason for this gap could be the focus of the researchers on the general assessment of reading comprehension rather than how specific aspects related to reading can improve it (Tseng, Yeh & Yang, 2015). Moreover, the effect of glossing on reading comprehension has been extensively studied quantitatively and the reasons why students prefer the language of glossing is missing.

The present study aims to address this gap by answering the following question:

- 1) Does glossing abstract words in L1 (Persian) affect learner's L2 reading comprehension?
- 2) What are learners' attitudes towards abstract glossed words while engaged in reading?

METHODOLOGY

The study used an explanatory sequential design in which the quantitative and qualitative data were gathered in two successive phases (Plano, & Creswell, 2008) and the qualitative method was used to explore further what was found through quantitative method.

Participants

In the first phase of the study, sixty female and male participants from Nour and Peyman language institutes (Pseudonyms) in Iran were volunteered to participate in this study. The participants were at the intermediate level of proficiency. The students' ages ranged from 17 to 25. The rationale for selecting the intermediate students was their adequate knowledge of English to carry out the different reading tasks. In the second phase, twenty participants from those who involved in the first phase were purposively selected to participate in a semi-structured interview.

Instrumentation

Proficiency test

To be sure about the homogeneity of the participants in both their background knowledge of English and reading comprehension, the participants took the TOEFL test. The test consisted of 100 multiple-test questions on grammar, vocabulary and reading comprehension sections and lasted an hour and forty- five minutes for all students in this school. The total score for the whole items was 100.

Materials and Glossed Words

For selecting the appropriate material for the participants, the following criteria were used:

- (a) At the pre-test stage, those English instructors who taught the intermediate level in the institutes were asked to examine whether abstract words in the test were suitable for glossing. Moreover, to be sure about the appropriate target vocabularies, we decided to exclude those abstract words correctly answered by more than 25% of the test takers (see Johnson, 1982). As none of the participants answered them correctly, we did not exclude any target words.
- (b) Eight texts from different reading books were selected by the group of English instructors. The taken texts from the books were converted into computer-readable format (the word 97). The Flesch Kincaid readability index was calculated for the texts. This scale ranges from 0 to 100. The level of readability for selected texts was 72.1.
- (c) English instructors and experts were asked to check the L1 and L2 definitions given for the abstract words in order to verify the appropriateness of the definitions of the target words of the texts.

Posttest

After the intervention, participants took a posttest. The test comprised two sections of the TOEFL: a reading comprehension test and a vocabulary test.

Procedure

This study employed pretest-posttest intact group design. Total 65 participants were volunteered to participate in this study. Participants were given a consent form. Five participants were excluded because of their high score on the pre-test. The rest were assigned to into four groups, two control and two experimental groups. The control groups were studying in Nour institutes while the experimental groups were in Peyman institute. These institutes were almost far apart geographically. The classroom met twice a week for 90 minutes.

In each session, the first author provided the experimental group with a list of L1 glosses for abstract words on a separate page before they start reading while the control group received a list of L2 glosses with their definitions.

At the end of the eight sessions, a post-test including 60 multiple-test questions on the vocabulary and reading comprehension sections of pretest was conducted. The total score for the whole items was 60.

The interval between pre-test and post-test was forty- five days. At the end of the intervention, twenty participants were selected for semi-structured interviews.

Interviews

The first author conducted the semi-structured interviews with the participants in English to explore the results of the quantitative study. Each interview lasted almost 50 minutes, audio-taped and later transcribed.

Data Analysis

Quantitative data analysis

For analyzing the quantitative data, paired-samples t-test was carried out to present the differences between the reading comprehensions of those students who had access to L1 glosses for the abstract words with the ones who received L2 glosses.

Qualitative data analysis

The qualitative data were analyzed using content analysis (Hsieh & Shannon, 2005). After transcribing the data by the first author, the transcripts were mailed to the interviewees for member checking and then analyzed manually. The coding the data was carried out independently by the first author and an expert in qualitative research then themes emerged through constant comparison across the transcripts. The processes of analysis and coding were scrutinized by an auditor (the second author).

Quantitative Results

This section presents the results of data analysis in pre-test and post-test.

Pretest Results

For the homogeneity of the control and experimental groups in reading comprehension, a pre-test was administered. Statistical data were analyzed using Spss software version 19.0. Table 1 shows the descriptive analysis of the data.

Table 1. Descriptive Statistics of Pre-Test Scores on Reading Comprehension

Group	Mean	Standard deviation	Variance	Number of Participants
Experimental	27.66	6.32	39.94	30
Control	27.63	6.04	36.48	30

The homogeneity of the participants on the reading comprehension section was also examined through the t-test. An independent t-test was conducted to compare the mean scores of the experimental and control groups on the reading test. As displayed in Table 2, the t observed value (=0.2) at 58 degrees of freedom was lower than the critical t-value (= 2). Therefore, there was no significant difference between the mean scores of the control and experimental groups on the reading test prior to the treatment.

Table 2. An independent t-test on Reading comprehension

T-observed	Degree of freedom	T- Critical
.02	58	2
05 ≤ p		

Comparing the results of pre-test showed no significant differences between the experimental and control groups in the TOEFL scores prior to any treatments.

Table3. Descriptive Statistics of Pre-test Scores on TOEFL

Group	Mean	Standard deviation	Variance	Number of Participants
Experimental	51.33	7.09	50.26	30
Control	51.73	6.58	43.29	30

The t-observed value was calculated to compare the mean scores of the experimental and control groups on the TOEFL (see Table 4). The t-observed value was 0.23 and this value at 58 degrees of freedom was lower than the critical t-value, 2. Therefore, there was no significant difference between the mean scores of the control and experimental groups prior to the treatment.

Table 4. An independent t-test on TOEFL

T-observed	Degree of freedom	T- Critical
.023	58	2
05 ≤ p		

Post-test Results

For calculating the effect of L1 glossing on reading comprehension, the participants took a post-test. The descriptive statistics for the post-test groups are displayed in Table 5.

Table 5. Descriptive Statistics of Post-Test Scores on Reading Comprehension

Group	Mean	Standard deviation	Variance	Number of Participants
Experimental	41.80	7.03	49.92	30
Control	31.93	6.35	40.32	30

The mean scores of the experimental and control group on post-test were compared through the t-test. The t-observed value on the post-test was 5.70. This value was above the critical t-value at 58 degrees of freedom (see Table 6). Therefore, there was a significant difference between the two groups' mean scores on the post-test and the experimental group (mean score =41.80) who received L1 glosses for abstract words outperformed the control group (mean score =31.93).

Table 6. An independent t-test on Reading Comprehension

T-observed	Degree of freedom	T- Critical
5.70	58	2
$05 \leq p$		

Qualitative Results

The analysis of the data identified three major themes. Each has been described in detailed.

L1 Glossing for abstract words facilitate reading comprehension

Most participants preferred to have the definitions of abstract words in L1. They also agreed that L1 gloss condition was quite effective in understanding the text. Such preferences were mainly reinforced by the lack of ability in predicting and inferring the meaning of abstract words.

I have never been good at guessing the meaning of the words based on the text. It is really difficult, I mean especially abstract words cannot be guessed always from the text.

Further analysis showed that more than half of the participants used the word-by-word decoding strategy for reading comprehension. Many highlighted that their teachers insisted on understanding the whole text participants and skipping the unknown words but they still preferred to consult each gloss for each new word especially if they were abstract and keywords and knowing them was important to understand the text.

I like to know the meaning of every single word. Understanding abstract words especially when they are the keywords is important. Keywords will help you to understand the whole paragraph in which they appear even if there are some other unknown words.

Some participants added that they still thought in L1 and L1 glossing was of great help to keep the reading flow and the definitions of abstract words in L2 are better remembered.

As I still think in Farsi, translation of the abstract words helps me a lot to remember them faster and easier.

L1 Glossing for abstract words influences emotional status

Participants also perceived that anxiety was a major reason impeding reading comprehension. For many, anxiety was exacerbated by the time limitation. Looking up the L1 definition was useful in lowering the level of anxiety or gaining more confidence about the meaning of unfamiliar words.

You come to unknown words, you get worried because time is running and you cannot spend more time understanding it. You might get panic not understanding it but when the meanings of the words are written in Persian, your mind is at ease.

Some of the participants agreed that L1 glossing enhanced their motivation level of willingness to read the text.

When I feel that I understand the text, I would be encouraged to continue reading. I won't get discouraged.

L1 Glossing for abstract words saves time

Participants stated that L1 gloss condition helped them to grasp the meanings of the words in context quite fast without facing any breakdown in the reading process. Drawing upon their experience, some believed that using L2 definition required much attention to make a connection between the words and then associating it with the L1 lexical system. Some agreed that this process was distracting and time-consuming.

When I am dealing with L1 definition, I can quite go through the text quite fast because there is no much effort on my side. Imagine I have given the definition of the word in English, I need to first figure out what are the words mean together and then try to look for its Persian and it is possible that I make an erroneous guess.

Discussion

Research shows that glossing is one of the most effective instruments for facilitating the reading comprehension. There is no consensus whether the words glossed in L1 or L2 can improve learners' reading comprehension. The effect of glosses has been extensively studied quantitatively. Moreover, no studies have investigated the impact of L1 (Persian) for abstract words on the reading

comprehension of Iranian English as foreign language (EFL) students. This study contributes to current knowledge by investigating the effect of glossing abstract words in L1 (Persian) on reading comprehension of Iranian English learners with intermediate levels of English proficiency. Moreover, English learner attitudes toward abstract glossed words were investigated to supplement the statistical data.

Results of the study showed that the mean differences between the experimental groups and control group was significant in the posttests, as shown in T- Test. The mean score for the L1 glossing group was quite higher than that in the control (L2-glossing) group or the participants in L1 gloss conditions outperformed their counterparts in the control group in reading comprehension. These results show that glossing abstract words in L1 facilitate reading comprehension more than glossing the abstract words in L2.

This result was in line with those of previous studies. Fahimipour and Hashemian (2013) compared the effects of L1 Persian glosses with L2 English glosses on reading performance of sixty female Iranian students. The study found a significant difference between the two groups. Those were provided with native language gloss outperformed their counterparts who had access to L2 English glosses. Some researchers found no differences between the effect L1 and L2 glossing on reading comprehension performance, but found that learners preferred glossed text to non- glossing (Alharbi, 2018) and L1 glossing to L2 (Bell & LeBlanc, 2000).

The findings of this study are in contrast with the results of Farvardin and Biria (2012). These researchers investigated the effect of L1 glossing, L2 glossing and multiple-choice glossing on reading comprehension and found that L2 glossing can enhance learner reading comprehension more than L1 glossing. They also added that L1 glossing was more effective than L2 glossing in the immediate post-test reading comprehension while these results were vice-versa in delayed post-test.

The qualitative findings of this study seem to provide some explanations for the conflicting results of previous studies. Our results showed that students' attitude towards L1 gloss was associated with lack of ability in predicting the meaning of abstract words and the word-by-word decoding strategy for reading comprehension and time limitation. Moreover, according to the participants, the L1 definition was useful in lowering the level of anxiety or increasing confidence and willingness for reading. Our results are inconsistent with the findings reported by Bryant, Goodwin, Bryant, & Higgins (2003).

According to Bryant and his associates, the lack of ability in inferring the meaning of new words from the reading is much proficiency dependent. However, this study found that even intermediate students face such difficulty. In line with notice gap theory (Schmidt & Frota, 1986 cited in Taylor, 2014), the students attempted to take a better cognitive advantage of the L1 in L2 learning. In doing so, they used L1 glosses to facilitate the bottom-up processing of the unknown items. The reason for relying on L1 glosses for abstract words could be the lack of practicing different reading strategies in public schools where reading is achieved through the translation of the texts followed by reading comprehension test. Based on the results of this study, a variety of factors such as students' reading ability, reading strategies, students' emotional status and time limitation should be taken into account when interpreting the effects of L1 and L2 glosses.

Conclusion

The results of the study show that glossing abstract words in L1 (Persian) can improve learner reading comprehension. During the interview, students highlighted that they could remember the meanings of abstract words mainly in their L1. This issue is of great importance because learners process abstract at the lower speed (Mestres-Missé, Münte & Rodriguez-Fornells, 2014) or face more difficulty in discovering the meaning of abstract words compared to concrete words. Apart from the lack of ability in predicting the meaning of abstract words, the findings of the study showed that word-by-word decoding strategy for reading comprehension and time limitation were among the reasons that Iranian students showed preferences for L1 glossing. Such a reading strategy is associated with teachers' English methodology in Iranian public school where reading is achieved through the translation of the texts followed by reading comprehension test. These results have implications for teachers and students. The results of the study show that instructors need to increase the tolerance of students for unknown words and help students to develop different reading strategies than just depending on word-by word decoding. More importantly, they need to consider students' learning preferences for glossing to make their learning more enjoyable (Ramezanali, 2017; Rassaei, 2017). Teachers can reap the benefits of the L1 gloss to lower their affective filters such as anxiety. They can also use the jigsaw reading strategy to integrate glossing into cooperative learning. For instance, teachers can put students into pairs and provide each group with one version of a glossed text and encourage learners to ask their peers if they could not guess the meaning of difficult words (see Jacobs, 1994).

Curriculum designers should adopt glossing that enables L2 learners to enhance their reading comprehension. They should be aware that inappropriate glossing may hinder than facilitate comprehension. Moreover, considering learners' preferences for the type of glossing may encourage the learners to save their time for finding the meaning of unknown words process.

The results of this study need to be interpreted cautiously because learner performance may be influenced by varieties of factors, such as the nature of the reading materials, data collection methods, or treatment duration, learner affective factors, and immediate or delayed post-test.

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APPENDIX A

A Sample of Reading Text

Developing Reading Skills_ Intermediate (1981)

What you don't know about exercise?

Exercise is good for you, doctors say, but most people really know very little about how to exercise properly. What do you know about exercise? Take this true-false test. You will probably be surprised.

A. Exercise, everyone advises! But immediately, when you try, you run in to trouble. There is so much contradictory, sometimes incorrect advice about exercising that you become confused. Test yourself on the following true-false quiz. It will tell you what you need to know.

1. The best way to reduce the midsection area is to do abdominal exercise.

False. Many people believe that when specific muscles are exercised, the fatty tissues in the immediate area are “burn up”. The truth is that exercise burn fat from all over the body and not from one specific area, regardless of the type of exercise. Of course, if you reduce the fat throughout your body, you will certainly see results around your waistline too!

2. To maintain an adequate level of physical fitness, you need to exercise only twice a week.

False. Studies conducted by NASA, the National Aeronautics and Space Administration, show that unexercised muscles lose their strength very quickly. After 48 to 72 hours, you must use the muscles again to re-establish the good physical effects. And what does that mean to you? NASA scientists concluded that while daily exercise is most beneficial, three alternating days each week will maintain an adequate level of physical fitness.

3. To lose weight you should always “work up a good sweat” when exercising.

False. Sweating only lowers body temperature to prevent overheating; it does not help to reduce. You may weigh less immediately after a workout, but this is due to water loss. Once you replace the liquid, you replace the weight.

4. You burn more calories jogging one mile than walking the same distance.

False. You use the same amount of energy whether you walk or jog the mile, since in both cases you are moving the same weight the same distance. The speed doesn't matter. Of course, if you jog rather than walk for 30 minutes, you will come more distance, and therefore burn more calories.

5. If your breathing doesn't return to normal within minutes after you finish exercising, you've exercised too much.

True. Five minutes or so after exercising, your breathing should be normal, your heart shouldn't be pounding and you shouldn't be exhausted. Beneficial exercise is not overly difficult, unpleasant, and exhausting; it is moderate, enjoyable, and refreshing.

6. Walking is one of the best exercises.

True. Walking helps circulation of blood throughout the body, and thus has a direct effect on your overall feeling of health.

7. Vigorous stretching exercises keep muscles flexible.

False. Stretching exercises (for example twisting or bending at the waist, touching your toes) should be done slowly, allowing the muscles to relax and "let go". Vigorous stretching makes the muscles become tighter.

8. The minimum amount of time you should spend exercising in a day is 20 minutes.

True. There are more than 400 muscles that attach to your skeleton. A good exercise routine should contract and stretch all these muscles, and this simply cannot be done with four or five exercises in five or ten minutes. From experience I have found that about 20 minutes is the minimum amount of time needed for an adequate workout.

B. How long it takes you to become physically fit depends on how unfit you are when you start. If you are out of condition, you certainly can't shape up in 21 days. However, shaping up doesn't do any good unless you plan to stay in shape, and that means exercising from now on. It takes as much exercise to stay in shape as it does to get there. But the work won't seem as hard after a while because your body will be in good condition-and all the moves will seem easier.

List of abstract words with L1 glosses

- | | |
|-----------------------------|---------------------------|
| 1. Adequate: کافی ، مناسب | 16. Immediately: فوراً |
| 2. Administration: سازمان | 17. However: اگرچه |
| 3. Advice: توصیه، صیحت | 18. Moderate: ملایم |
| 4. Advise: صیحت کردن | 19. Properly: درست |
| 5. Aeronautics: علم هواوردی | 20. Overall: کلی |
| 6. Allow: اجازه دادن | 21. Health: سلامتی |
| 7. Alternating: متناوب | 22. Rather than: به جز |
| 8. Amount: مقدار | 23. Regardless: صرفنظر از |

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| 9. Beneficial: مفید | 24. Throughout: سراسر |
| 10. Case: مورد | 25. Truth: حقیقت |
| 11. Certainly: مسلماً | 26. Strength: قدرت |
| 12. Confused: گیج | 27. Trouble: مشکل |
| 13. Contradictory: متناقض | 28. Unless: واکر |
| 14. Due to: به علت | 29. Vigorous: قوی، دید |
| 15. Flexible: عطف پذیر | 30. While: در حالیکه |

List of abstract words with L2 glosses

1. Adequate: enough in quantity
2. Administration: organization
3. Advice: an opinion you give someone about what they should do
4. Advise: tell someone what you think they should do
5. Aeronautics: the science of designing and flying planes
6. Allow: to let someone to have or do something
7. Alternating: if two things alternate they happen one after another
8. Amount: a quantity of something
9. Beneficial: having a good effect
10. Case: an example of a particular situation
11. Certainly: without any doubt
12. Confused : unable to understand or think clearly about what is happening
13. Contradictory: two things that are different and therefore cannot be both true or correct
14. Due to: because of something
15. Flexible: a person, plan etc that can be changed easily to suit any new situation
16. However: in whatever way
17. Immediately: at once
18. Moderate: average
19. Overall: including everything
20. Properly: correctly
21. Health: when you have no illness or disease
22. Rather than: except
23. Regardless: without being affected by something
24. Strength: power
25. Throughout: in every part

26. Truth: the facts about something
27. Trouble: problem
28. Unless : if not
29. Vigorous: using a lot of energy and strength
30. While : during the time that something is happening