Should (Can) You Study Philosophy? (A simulation on whether philosophy texts can be read easily)

Introduction

When we mention philosophy, many of us think it as a mysterious subject. If someone studies philosophy, we might become very surprised and admire him. Also, in university, many of us are encouraged to take some philosophy classes for general education. However, as we all know, philosophy texts contain many difficult words and are generally hard to read. Can you read philosophy texts smoothly? In this project, I ran a simulation to help you decide whether you can read those texts easily and whether to decide you should take philosophy classes or not.

Method

To decide whether we can read a certain text easily, the most intuitive way is to check how many new words (the words we do not know before) and how frequently we need to look up these new words. Thus, to decide whether one can read philosophy texts easily, the simulation is ran using following two steps:

1: Build the original word bank.

Before reading philosophy texts, everyone has everyone has a different range of vocabulary. However, the words the everyone learnt is not in a complete random state. People first learn common words and then learn less common words.

The word bank is built using the following steps:

(i) Choose the number of words you already know, n, which is an integer.
(ii) First shuffle the texts, then count the word frequencies of each new word, when a word appears 30 times, this word becomes a word in the word bank.
(iii) When the bank has n words, the bank is built.

2: Simulate the reading process.

To simulate the reading process, we first scan through the text, when we encounter a new word 5 times, we add it to the word bank, and we keep records of the number of times we encounter a new word. Suppose we read 300 pages of texts for one semester and each page has 400 words, we stop reading when we have read 120000 words.

To determine whether we can read the texts easily, we use the following metric:

Lookup_Freq: Number of times we need to look up a new word for every 400 words

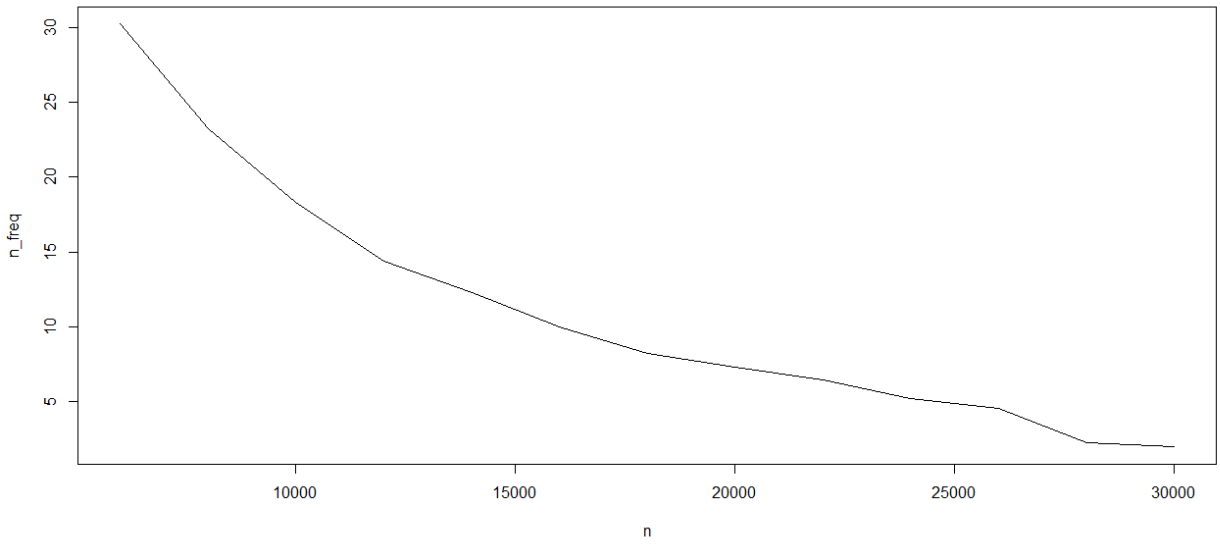
Questions to answer:

1: How many words we need to know in advance to read philosophy texts easily?

2: Will the reading speed improve as the reading process goes?

Results:

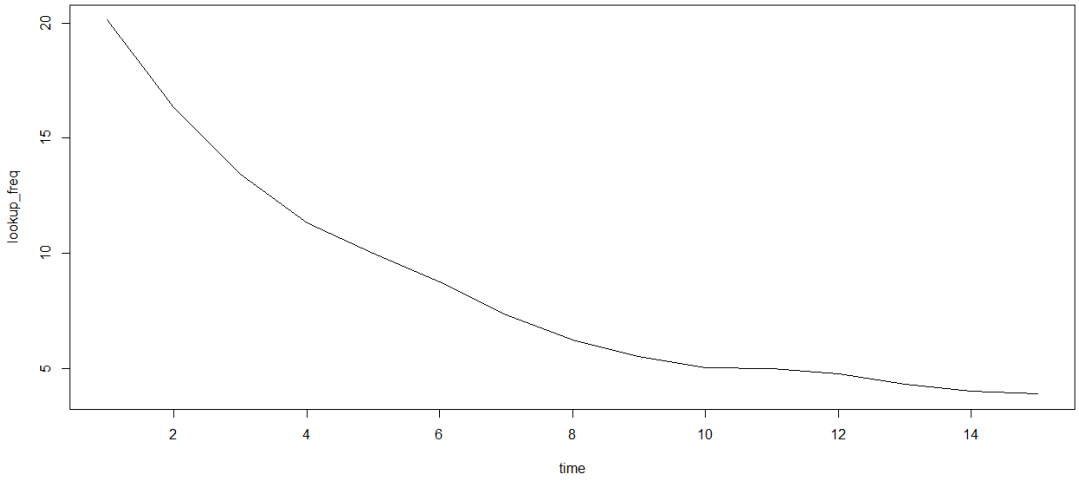
To answer the first question, the relationship between Lookup_Freq and the number of words we know in advance is plotted below:



From the plot above, we can see that if you learn about 10000 words in advance, you may encounter about 15 new words every page, which may be a little bit challenging. To read philosophy texts easily, you need to learn about 25000 words in advance, so that you only need to look up around 5 words every page.

For native speakers, study shows that they have an average vocabulary of between 20000 and 30000 and thus can read through texts quite easily. But for many foreign students, this can be very challenging. The TOEFL test generally requires a vocabulary of 8000 and the GRE test requires a vocabulary of around 12000-16000. Thus, for a foreign student to read philosophy texts easily, the student needs to reach the level of GRE test to try to read the philosophy texts, and this still cannot let you read the these texts easily.

To answer the second question, we first choose the number of words be 15000. Then for every 20 pages (8000) words, which is about the page people read one week in one class. we count the lookup frequency. The result is plotted below:



From the figure above, we can see that people can learn quite fast in first few weeks. After 4-5 weeks, people encounter about 10 words every page, which is much more better than 30 words per page at the beginning.

Conclusion

1: People need to have a vocabulary of 15000 to attempt to read philosophy texts. If the vocabulary reaches 25000, they can read philosophy texts relatively easy.

2: Once people reach the vocabulary of 15000 and start to read philosophy texts at the speed of 20 pages a week, they can soon improve their reading speed and the reading the rest would be much easier.