

*A One Semester Research Study on the Effects of Extensive Reading on Students'  
Receptive Vocabulary Size*

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**Abstract**

Extensive Reading has been touted as beneficial for improving students' reading fluency, speed, confidence, and vocabulary. This paper examines whether some of these claims are true for a group of students over a 14-week semester. Administering vocabulary level tests at the start and end of the semester does not indicate that there is a greater positive correlation between Extensive Reading and an increase in receptive vocabulary size compared to a control group. However, student surveys suggest that using the website [mreader.org](http://mreader.org) to keep track of Extensive Reading may be responsible for boosting students' confidence in their vocabulary growth, which feeds into a self-propelling virtuous loop: reading leads to improved confidence, which leads to more reading. These findings should reaffirm the virtues of using Mreader with Extensive Reading, and convince teachers who are not yet familiar with the website about its virtues.

Keywords: Vocabulary, extensive reading, confidence

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## **Introduction**

The conventional wisdom is that one benefit of Extensive Reading (ER) is the improvement of students' vocabulary. The Extensive Reading Foundation's website lists the benefits gained from ER, and "builds vocabulary" is listed second ([http://erfoundation.org/ERF\\_Guide.pdf](http://erfoundation.org/ERF_Guide.pdf)). This claim, however, needs qualifying. If, for example, students follow the ER guidelines and read books that are well below their ability, students should not be encountering many unknown words. The ER Foundation's website says that books can appropriately be categorized as "Extensive Reading" if 98% of the words on each page are known ([http://erfoundation.org/ERF\\_Guide.pdf](http://erfoundation.org/ERF_Guide.pdf)). By this standard, only 2 out of every 100 words should be unknown to the reader, which is not a significantly large amount of new vocabulary. Furthermore, the claim that ER "builds vocabulary" is ambiguous, difficult to quantify, and leads to more questions. For example, does "builds vocabulary" mean that completely new vocabulary will be learned, or that already familiar words will be strengthened? There is a big distinction between these questions and teachers and students should be clear on what to expect when participating in ER. Another consideration is the problem of measuring the vocabulary-building benefits of ER. It is difficult to isolate the vocabulary that is learned as a result of ER, and not conflate it with the vocabulary learned in some other class, or as the result of a combination of factors. With all of these ambiguities in mind, the goal of this research was to determine whether participating in ER for one 14-week semester positively affects students' receptive vocabulary awareness. This paper first explains what is meant by "Extensive Reading," then examines the claim that ER improves vocabulary; next, the ER method used in my classes is described, followed by the origin of my interest in the relationship between ER and vocabulary building; then the methods of my vocabulary testing are outlined, and my results are discussed; finally, the positive effects of ER on students' confidence in their English vocabulary are proposed and further areas of research are considered.

## **What is Extensive Reading?**

Before exploring the issue of whether ER "builds" vocabulary or not, a short explanation of what is meant by ER is appropriate. Waring (2011) provides a simple summary of ER, describing it as "the practice time where learners read a lot of easy-to-read texts" (p3). In other words, ER means reading many books that are already within a student's lexical comprehension. Day and Bamford (1998), Day (2002), Prowse (2002), and Maley (2008 and 2009) describe many other factors that can be included in a definition of ER. These writers quantify how much of the vocabulary on each page should be understood, give ideas on whether students should be quizzed on the books or not, and estimate how fast a student should read per minute. These strict parameters do not need to be followed strictly; as long as the ER program is stimulating students' desire to read, and that desire leads to more reading, the ER program will have a positive impact on students' reading ability. Research by Richard Day (2002) and many others shows that students learn to read by reading, and that the more they read the better readers they become.

## **Does ER Actually Improve Vocabulary?**

Vocabulary learning is a gradual process and requires many encounters in different contexts before words are completely comprehended. Notably, there is a difference between native English-speaking students' vocabulary acquisition rates, and EFL students' rates of acquisition. Native English speakers in an English-speaking society encounter new vocabulary in many more contexts (in conversations, on television, in classrooms, etc.) than their EFL counterparts who encounter the vocabulary in limited and structured contexts, mostly in language lessons. Nagy & Herman (1987), find that native English-speaking children between third and twelfth grade (U.S. grade levels) learn up to 3000 words a year. It is thought that only a small percentage of this is due to direct vocabulary instruction, and the remainder is due to acquisition of words from reading, and from incidental encounters with the words through the normal course of living in an English-speaking environment. Snow (2010), concludes that EFL students are highly unlikely to encounter enough new vocabulary, even in a 4-skills class, to learn new words and phrases as quickly as native English speakers living in an English-speaking society. She argues that instead of the traditional method of studying vocabulary from word lists — such as making sentences, taking quizzes, then moving on to the next set of words — students need between 15 and 20 repeated exposures to vocabulary in many different contexts to maximize their success rates of learning new words and phrases. This repeated meeting of new vocabulary words simulates (though does not replicate) the type of exposure that students are exposed to in a native English-speaking society. Waring and Takaki (2003), write that an average word should be met more than 25 times for it to be known well enough to be understood and not slow down comprehension when reading. Even seeing a word 25 times does not guarantee that it will be learned, as other research has shown that some words met over a hundred times are still not known (Waring, p4, 2011). In summary, it is clear that for new vocabulary to be learned, whether in a native English environment or in an EFL situation, words must be seen and heard many times in many different ways. It is reasonable to assume that ER provides EFL students with some of these necessary repeated encounters to reinforce vocabulary that is known in some contexts but unknown in others. Therefore, it would not be unexpected to find that students who engage in a significant amount ER will improve their receptive vocabulary awareness of words that are already partially familiar. In terms of learning completely new words, the proposition is more dubious. Returning to the ER guidelines, remember that 98% of a text's words should be known to the reader. If a book is 5,000 words long, no more than 100 words (which is 2% of 5,000) will be unfamiliar. Does ER, by itself, provide enough exposure to those unknown words to justify the claim that ER “builds vocabulary”? While it is an interesting research question, this paper does not investigate that claim. Instead, it attempts to understand whether ER is responsible for improving receptive vocabulary over 14 weeks compared to a control group that does not participate in ER but is actively engaged in English learning.

## **Extensive Reading in my Classes**

With the goals of improving students' vocabulary, reading fluency, and reading confidence, ER has been an important part of my classes for years. The website [mreader.org](http://mreader.org) has been an indispensable resource in helping my students achieve impressive results, and in helping me motivate and monitor students' progress. The

website keeps track of how much reading (and understanding) the students are doing by giving students a reading comprehension quiz after each book they finish. If the students pass the quiz, they are credited with the number of words in the book. If the students do not pass the quiz, they do not receive any credit for that book. Instead, they must choose a different (and probably easier) book and start again.

Skeptics may argue that quizzing students demotivates weak readers and that when students fail quizzes they are discouraged from reading, rather than inspired to read more. Additionally, there are surely teachers who adhere to the strict definition of ER which holds that students should not be quizzed on the information in the books. These teachers probably believe that by trying to remember a book's details, the students are not reading for pleasure and not reading as quickly as they otherwise would if they were just enjoying the book.

While all of these objections have some merit, I have discovered that if students are not responsible for understanding a book's content, they tend to glide over unfamiliar words without truly realizing their meaning. After skim reading a book, it is unlikely that a student will be able to accurately recall the events, characters, or plot twists to any significant degree. If a student is unable to recall the events or the characters of a book immediately after "reading" it, is that truly reading, and should a teacher give that student credit for reading the book?

This is the rationale for using the quizzes on the extensive reading website [mreader.org](http://mreader.org). By using this website, students are encouraged not just to read, but to follow the developments in the story, and what each character is contributing. Students are much less likely to hurry through a book when using [mreader.org](http://mreader.org). Instead they will read it with a more critical eye and pay attention to vocabulary and characters' dialog. The website is simple for students to use, which is important for maintaining their motivation. Furthermore, it is easy for teachers to use as well, making the task of monitoring hundreds of students' reading significantly easier than it would be without the website. "How to Implement a Graded Reading Program" (Weinberg, 2016) further explains why [mreader.org](http://mreader.org) is a useful ER tool for teachers, and how to use the website to implement an ER program to take advantage of all the benefits ER has to offer.

## **The Survey**

Although experts in the field of reading and language acquisition are quite sure that ER is a useful tool, I surveyed my students on their opinions of ER and the [mreader.org](http://mreader.org) website to discover how students felt about the reading program in my class. I began by asking my students to assess their experience with ER and the effects they thought it had on their language development. I asked them to complete an anonymous survey (Appendix C) indicating their level of agreement with statements like "I enjoyed using Mreader," and "I think my reading speed has increased since I started using Mreader." In response to the statement "I think my vocabulary has increased since I started using Mreader," 60% of the students agreed (8% of the students strongly agreed, and 52% slightly agreed). The large amount of agreement to this claim immediately generated my curiosity. Did the students truly improve their vocabulary? If so, by how much and was the improvement solely the result of ER? Waring and Takaki (2003) are dubious that ER helps students learn a significant

amount of new vocabulary that can be retained for longer than a few months. Yet many other researchers (Day, Omura and Hiramatsu (1991); Dupuy and Krashen (1993); Grabe and Stoller (1997); Hayashi (1999); Horst, Cobb and Meara (1998); Mason and Krashen (1997) and Pitts, White and Krashen (1989), have concluded that ER does in fact benefit vocabulary acquisition. Considering how much positive effect ER is purported to have on vocabulary development, it is not surprising to see that 60% of my students self-reported that their vocabulary improved in just one semester after completing ER. The next step was to test whether this was actually true.

### **The Vocabulary Tests**

While it is plausible to believe that ER improves students' reading skills, it is worth considering if ER truly benefits students as much as is proclaimed by the Extensive Reading Foundation among others. First, does ER actually improve students' vocabulary? If so, how much improvement is due to ER, and how much is due to the other courses that students are studying? It is very difficult to measure students' vocabulary levels to account for the vocabulary that is learned as a direct result of ER if students are enrolled in other English classes while they are simultaneously reading for ER. To conduct that research, a group of students would need to be engaged in ER exclusively, and their vocabulary acquisition at the end of the semester could then be compared to two different groups of students: one group that studied in English classes but did not do ER, and the second group that studied in English classes and did participate in ER. At the beginning and end of the semester all three groups would take vocabulary level quizzes and the results could be compared to determine which group benefited the most from which approach. It would be necessary to isolate the students who only did ER from all other forms of English content. The list of restrictions on these students would be long: no interaction with English speaking friends, no English songs, no English movies or YouTube videos, no English in music, and on and on. These prohibitions would be impractical and difficult to regulate. It would additionally be contrary to the ethos of ER and English teaching in general, which is to promote an interest in English so that students seek out other means of English input to enhance what they are already learning and reading about. As a result of the difficulty of conducting a scientifically sound research experiment, the research I undertook involved just two groups of students, both of which studied a normal load of English classes, but only one class also engaged in ER. The purpose was to learn if including ER, in addition to their standard coursework, improved the students' receptive vocabulary awareness.

I began by giving all my students Paul Nation's (Nation, I.S.P. & Beglar, D. 2007) vocabulary level test on the first day of the semester. According to Nation, "The Vocabulary Size Test is designed to measure both first language and second language learners' written receptive vocabulary size in English. The test measures knowledge of written word form, the form-meaning connection, and to a smaller degree concept knowledge. The test measures largely decontextualised knowledge of the word although the tested word appears in a single non-defining context in the test."

After measuring the students' initial vocabulary size, the students in the research group then participated in ER for a 14-week semester, while the students in the control group did not do any ER. Some students in the research group far surpassed the reading targets that were set for them, while one student failed to read any books

during the semester. Regardless of the amount of ER completed, I tested all the students' vocabulary level again at the end of the semester. There are two versions of Nation's vocabulary test so the students did not take the same test their second attempt. As Nation explains on his website, "Versions A and B of Vocabulary Size Test are parallel forms. This means that versions A and B can be used as if they were the same test." If ER truly improves vocabulary awareness, it is reasonable to expect that the students who did a lot of ER would see their scores on Nation's vocabulary level test improve, while students who did not participate in ER should have seen comparatively less vocabulary improvement.

## **The Results**

The results of my research indicate that there is not a statistically significant difference in vocabulary improvement between the ER group and the control group. While students in the ER group did in fact improve their receptive vocabulary size, the control group also improved, and therefore there was not a statistically significant correlation that can be ascribed to ER. Although the gains are moderate, the data indicate there was a gradual increasing trend in vocabulary awareness in both groups.

Among the research group, the average increase in vocabulary size was 2,425 words for students who read at least 166,926 words. The top reader (576,691 words) saw an increase in vocabulary of 2,200 words. The student whose vocabulary score improved the most (4,400 words) read 200,647 words. The weakest reader (166,926 words) managed to improve on the vocabulary quiz by 1,600 words. The student with the smallest gain in vocabulary size (0 words), completed 197,715 words in ER. In general, among the research group of students who actively participated in the ER, there was an improvement in their score on the vocabulary level test, while students in the research group who did not significantly engage in ER did not see substantial improvements in the vocabulary awareness.

It is important to note that there was not a direct correlation found between the amount of words read in ER and the amount of vocabulary improvement. Furthermore, the control group of students who did not participate in an ER program, also improved their vocabulary over the course of the semester. There was a statistically significant difference ( $P < 0.01$ ) between the initial average score of the control group and the research group on the first vocabulary level test. Interestingly, at the end of the semester the average increase in score on the vocabulary level test was greater among the control group. The control group improved on average 2625 words, compared to 2529 words for the research group. However, with a P value of 0.65, this increase was not statistically significant. A number of reasons could account for these research results. First, the students in the research group self-selected which books to read, and were encouraged to choose books that they could easily and quickly complete. This means that it is possible to have read tens of thousands of words and not encountered any new vocabulary. If this was the case, the students likely still could have benefited from the ER through the improvement their reading speed, fluency, confidence, and enjoyment of the experience, which would then feed back into their attitude towards learning English in general. There were also students who reached or exceeded the reading goals for the class, yet their vocabulary size either stayed the same or—in a few cases—decreased. Reasons for this are not clear, but some possibilities include

test anxiety, fatigue, distraction, or less than ideal effort and enthusiasm with the vocabulary quizzes.

Another finding from the second vocabulary quiz results was that students in the control group, who did not participate in ER, still managed to improve their vocabulary size over one semester. This is not entirely unexpected because there are many ways for students to learn vocabulary besides ER, such as through their other English classes. The control group was not prohibited from looking at, studying, or using English in between their vocabulary level quizzes. On the contrary, the control group of students (as well as the research group of students) were all studying for the TOEFL exam and as such, were certainly deliberately learning vocabulary related to that test. Prohibiting the studying of vocabulary among the control group would have more accurately highlighted the binary distinction between the benefits of ER versus the consequences of not doing ER, but that was not the objective of this research. Also, simply because students in the control group improved their vocabulary without doing ER does not negate the claim that ER does help many students to improve their vocabulary. Taken as a whole, the data support the proposition that most students who do ER will improve their vocabulary, but ER is not the only way to improve vocabulary.

### **Questionnaire Bias**

After conducting the research and comparing the results of vocabulary quizzes, it is clear that students did improve their vocabulary after completing a semester of ER. It is not clear, however, how the students knew that their vocabulary improved. The students did not have any objective data to verify the claim or indicate improvement. Although the students in the research group were able to see their vocabulary test scores increase after one semester, students who completed the initial survey about ER and mreader.org did not take any vocabulary quizzes related to their vocabulary size. This raises the question: why did students believe their vocabulary improved? Were they simply answering how they thought they should? There are potentially many factors that affected those students' answers including Acquiescence Bias (respondents agree to every question on a survey), Demand Characteristics (altering responses because they are participating in a study), Extreme Responding (only selecting the most extreme choices), Question Order Bias (answering questions differently depending on where the questions appear on a survey), and Social Desirability Bias (answering in ways that make respondents look better in the eyes of the questioner), (Wikipedia, Response Bias, accessed 12/27/17). Acquiescence Bias, Demand Characteristics, Extreme Responding, Question Order Bias, and Social Desirability Bias are all known phenomena that skew answers on self-reporting surveys and help explain why so many of my students said they believed that their vocabulary level improved after ER, even though there was no data to support that answer. Also, when introducing ER to my students at the beginning of the year, I told them that many linguists claimed that ER would improve their vocabulary. It is likely that they accepted this statement because it was delivered from their teacher. Therefore, when they were asked at the end of the year whether they thought their vocabulary improved, they remembered my earlier promotion of ER and answered affirmatively.

It can also be said that the statement on my survey regarding vocabulary improvement was too vague and therefore open to a variety of interpretations. Some students may have interpreted the statement “*My vocabulary has improved using Mreader*” to mean that they learned more new words. Other students may have thought that if the words they already knew became more understood than before, then they could also answer positively. Still other students may have understood the words “improved vocabulary” with their ability to achieve automaticity with vocabulary. Yet other students could have read the question and responded “Yes” if they simply felt more comfortable with their recognition of words, because Grabe (1991) explained that ER helps to improve word recognition and the ability to decode symbols on the page. Given that there are so many ways to interpret the idea of “improved vocabulary,” the initial question that began my interest in this study was overly broad and ill defined.

### **Improved Confidence**

The most positive conclusion I can draw from the students’ responses about their vocabulary improvement relates to their improved confidence. When asked if they thought their vocabulary improved, a majority of the students responded that it had. The fact that they believed that their vocabulary improved, even when it may not have, suggests that students’ *confidence* in their vocabulary improved. This optimistic interpretation of the students’ answer is supported by research around the power of positive thinking. The concept is that believing in your ability to do something actually enhances your ability to do it (Briggs, 2014). Additionally, boosted confidence is consistent with what the Extensive Reading Foundation includes as a reason for ER (erfoundation.org). Confidence, a “feeling of self-assurance arising from an appreciation of one's own abilities or qualities” (Merriam-Webster), is a difficult feeling to quantify. Although it is an imprecise means of measurement, asking students about their confidence level is one way to gauge it. Although the phrasing was different, my survey question about students’ vocabulary improvement was in fact asking whether they have developed confidence in their vocabulary. By responding that they thought their vocabulary improved, they were indicating that their confidence in their vocabulary increased.

If the students’ confidence in their vocabulary improved, and if vocabulary awareness is integral to being a confident reader, it is fair to suggest that the students’ confidence in their reading ability improved as a result of ER. This is an important and necessary development if students are going to be successful in school. Reading is a large part of most academic programs and if students are poor readers, or if they are intimidated by reading academic texts, they are likely to struggle in their classes. Kembo (1993) points to the value of ER in developing students’ confidence and ability in reading longer academic texts. This is important because it will help students learn how to decipher longer texts when they encounter them in their classes.

It is helpful to consider why the students’ felt their vocabulary improved (even when it didn’t). One of the expected results of ER is better reading fluency and a quicker reading speed. As the students become better readers through ER, their reading speed gradually improves, and their comfort and confidence level increases. If the students were then asked to identify what has changed in their English ability as a result of ER, it is natural to ascribe their new-found fluency on an improved level of vocabulary understanding. This logical conclusion indicates how ER can begin a virtuous circle:



the more one reads—>better understanding—>reads faster—>more enjoyment—>repeat (erfoundation.org). If the students are able to read more smoothly at the end of the semester, it is reasonable for them to assume that one reason is because they have improved their vocabulary. In this sense, whether or not the students' quiz scores on their vocabulary awareness actually improved, they believed that their vocabulary improved because they felt more comfortable reading in English. This indicates a positive correlation between reading, vocabulary awareness, and overall confidence in English ability, and points to the undeniable benefits of Extensive Reading.

Another explanation for the students' improved confidence in their vocabulary could be related to the use of the website mreader.org in combination with ER. After passing a quiz on the website, the students are "rewarded" with the cover of the book attached to their mreader page. This serves multiple functions: first, it reminds the students which books they have already read so that they don't attempt to read the same book twice; but beyond that, an even more helpful outcome of this feature is that the book cover serves as a kind of trophy or milestone. The more book quizzes the students pass, the more book covers they collect on their webpage. In addition to their word count increasing, the book covers begin to occupy more space reminding the students every time they access their page of what they have accomplished. I have heard students say that they appreciated this feature and enjoyed watching the book covers accrue on their page because they felt a sense of pride and achievement. This could be the reason why the students who used mreader.org said they believed ER (and mreader) helped grow their vocabulary. The idea that using mreader.org boosts confidence in vocabulary was not an intentional component of this research and there are still unanswered questions about this supposition. For example, it is as yet unknown if students who are not participating in ER, or participating in ER but not using mreader.org, would feel as strongly optimistic about their vocabulary growth after 14 weeks of studying as the students in my research group. It is true, however, that students who are participating in ER but not using mreader.org do not have this subtle yet continuous reminder of their successes. This is an area that needs more research.

## **Conclusion**

As expected, most students who read for ER for 14 weeks made significant improvements in their vocabulary. However, the students who did not participate in ER also improved their vocabulary. This was an interesting and unexpected discovery, but not unexplainable. The control group of students were actively involved in deliberate vocabulary study for the TOEFL exam, so the improvement on their vocabulary recognition can be ascribed to this effort. It is important to point out that no specific prescription can be made about how many words of ER will equate to what degree of increase in vocabulary awareness. There are too many variables to account and control for to make such a claim. However, the data add validity and justification for using ER and mreader.org in classes. The overarching takeaway from this research is that when students actively participate in ER and use mreader.org, they will almost certainly improve their vocabulary awareness. Additionally, the students' belief that ER (and mreader.org) improves their vocabulary is an indication of their improved confidence in their English vocabulary competency. Regardless of the actual degree to which students' vocabulary awareness improves, if the students

gain confidence in their English vocabulary ability vis-a-vis ER and mreader, this will feed into a virtuous circle: reading makes them more confident, which inspires them to read more, which boosts their vocabulary, which improves their confidence again. Students should be made aware of the benefits that will result when they participate in ER and use mreader.org. Showing students what is achievable if they devote the time and effort to improving their ability is motivational, self-sustaining, and rewarding.

### **Further Research**

Several further areas of research became clear over the course of this study. First, although there was no statistically significant difference in vocabulary growth after 14 weeks, would a longer research period show a greater difference between the research and control groups? Second, would a research group of hundreds (or thousands) of students show a larger increase in vocabulary after 14 weeks? Third, would students who do ER but do not use mreader.org also feel that their vocabulary increased? Fourth, do TOEFL students also realize that their vocabulary increased after 14 weeks? Fifth, how long does the improvement in vocabulary last after students stop reading?

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## Appendix A

Chart of Students' Vocabulary Scores Together with Number of Words Read

Student	First Test 04/19	Number of words known after first test	Second test 07/19	Number of words known after second test	Increase	Mreader words at time of second test 07/19
A	72	7200	37	7400	200	85728
B	78	7800	46	9200	1400	287160
C	83	8300	48	9600	1300	77521
D	74	7400	40	8000	600	94511
E	84	8400	70	14000	5600	80871
F	75	7500	79	15800	8300	450768
G	67	6700	45	9000	2300	82900
H	74	7400	43	8600	1200	80994
I	84	8400	52	10400	2000	124445
J	86	8600	44	8800	200	115682
K	73	7300	42	8400	1100	100403
L	75	7500	47	9400	1900	109611
M	87	8700	48	9600	900	76913
N	84	8400	62	12400	4000	144459
O	76	7600	54	10800	3200	135988
P	86	8600	49	9800	1200	83521

## Appendix B

### Extensive Reading Survey

1. On a scale of 1-5 (5 is the highest) how much do you like English?
2. Did M-reader help you improve your attitude towards English?
3. Do you like reading in your native language?
4. How many books on average do you typically read per year for fun?
5. How many books/words did you read for M-reader in 15 weeks?
6. Have you taken a TOEIC score since the M-reader program and have you seen you score improve?
7. Do you feel your reading ability has improved because of M-reader?
8. How much time did you read per day or week?
9. Do you feel you know more vocabulary because of M-reader?
10. Do you have more confidence reading English now?

## Appendix C

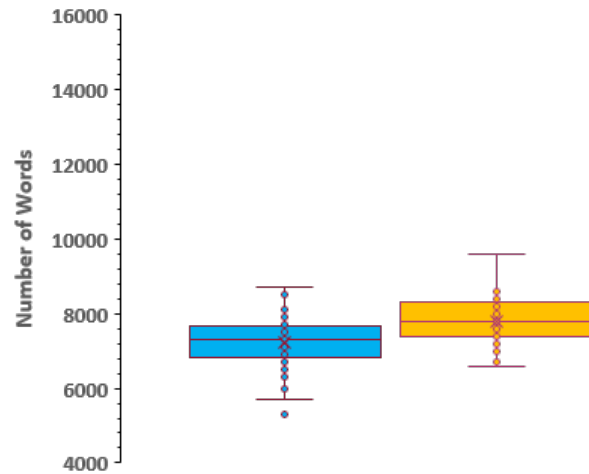
	Control	Meiji	<i>P</i> value
Average Beginning Vocab	7243	7806	<.01
Average End Vocab	9868	10269	0.25
Average Increase in Vocabulary Size	2625	2463	0.65

## Appendix D

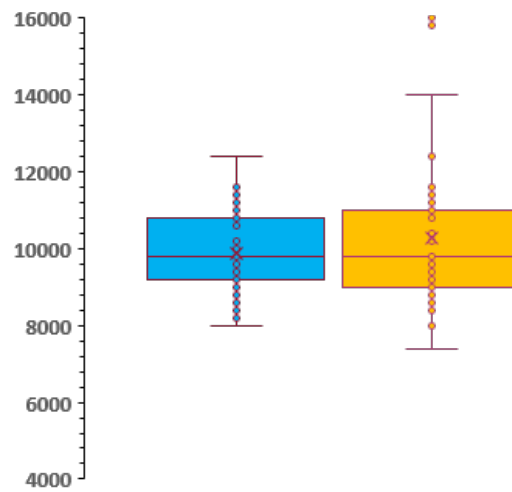
Control=blue

Extensive readers=orange

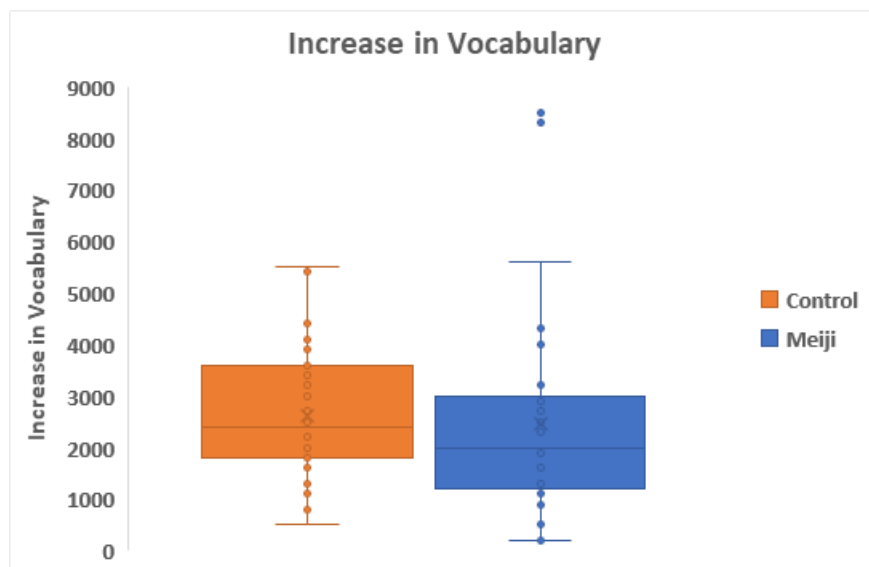
### Beginning Vocabulary



### End Vocabulary



### Increase in Vocabulary



# Appendix E

