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What Can You Remember? An Approach to Reading

Laura Lagemann and Allison Schulte

Reading comprehension can be affected by the reading method used, whether this is reading silently, aloud, or being read to by another. Our study measures the impact different reading methods has on the overall comprehension of a given passage. Our 90 subjects consisted of 58 women and 35 men. Subjects were randomly placed into three groups, for each of the three reading method variables being measured. Each group read the same passage. Our hypotheses for the study were that subjects reading the passage silently will recall more information about the passage than if they are read aloud to, or if they read aloud to themselves. We also hypothesized that primarily English-speaking individuals will have more correct answers on the passage questionnaire than English as second language (ESL) individuals. However, upon completion of our study, we did not find any statistical significance for either of our hypotheses.

Does an individual's ability to retain information change based on the way one reads a passage? Will individuals retain and comprehend more from a passage when reading the passage aloud, reading it silently, or when individuals have the passage read aloud to them? Our study deals with the issue of comprehending and retaining information when reading, via three different reading methods. Many people in society today read passages, articles, books, and many other reading materials. Do these individuals comprehend and retain more information when reading silently, as opposed to

aloud or when they are read to aloud? Does the language spoken impact reading comprehension and retention? Our study reflects and measures these questions.

One of the two hypotheses of our study was that if individuals read a passage silently to themselves, they will recall more information about the passage than if they are read aloud to, or if they read aloud to themselves. We also hypothesized that primarily English-speaking individuals would retain and comprehend more information resulting in more correct answers on our passage questionnaire than English as second language (ESL) individuals. We felt that reading silently to one's self would result in better comprehension, since individuals can then focus more on what they are reading, and on what they are getting out of the information they are reading. Individuals will then not have to worry about how well they are able to read, as they are not reading out loud for others to hear; they merely have to understand the passage, and be able to read it well enough for their own needs. Individuals may read the passage as slowly as they wish, and may also read over parts that maybe they do not understand as well, allowing for additional comprehension. If subjects are reading out loud to others, they may not be able to do this. In addition, reading out loud to others places an additional added stress on subjects in that they do not want to mess up, or be unable to pronounce a word in front of others, whereas reading silently aids in better comprehension. In contrast, reading silently to one's self aids in better comprehension of a passage, than having the same passage read aloud. Since subjects may be distracted by the person reading to them whether this is due to what the reader is wearing or how fast she reads, subjects may not pay as close attention to detail and information as they would if they read the passage to themselves.

In addition, if subjects are reading a passage that is in a language other than their primary language, it may be more difficult to comprehend and retain the information. This could lead to possible lower scores on the passage questionnaire given as a part of our study. On the contrary, if subjects read from a passage in a language used on a daily basis, they can focus more on what is being said. This will consequently lead to better comprehension and information retention overall.

Consequently, the purpose of this study is to determine whether or not there is a statistically significant effect of reading methods on a subject's comprehension of a passage. We wish to determine whether reading silently to one's self results in better retaining and comprehension of information in a passage, as opposed to the other two reading methods. This study is important because we will gain a better understanding of which reading method is best to use for students, when retaining and comprehending information in a passage is the ultimate goal. If we find statistical significance between the different reading methods, our findings may become useful not only for teachers, but for students and parents as well when trying to improve information comprehension.

Many studies have been completed regarding how the different reading methods and abilities individuals have affects how they retain and comprehend information. We have found many articles showing similar findings in how poor-ability readers benefit from reading out loud, as this heightens their comprehension, whereas average-ability readers benefit from reading silently. For example, according to Hale, A.D., Skinner, C.H., Williams, J., Hawkins, R., Neddenriep, C.E., and Dizer, J. (2002), it was found that high school students in particular typically comprehend more information when reading silently, when reading for comprehension (p. 12). Higher-skilled readers where found

unaffected by reading either aloud or silently their ability to retain or comprehend information was measured. This is because higher-skilled readers can comprehend and retain more information in a more efficient manner. As a college-level study, we may have average and higher-skilled subjects as participants; this could impact on our study in a direction either away from or towards our comprehension hypothesis, depending on our results upon our study's completion.

Readers with an average reading ability had higher comprehension and higher abilities to retain information when reading silently to themselves, as Hale et al. found (2007), which also applies to high school students (p. 13). This aspect of information retaining and comprehension has been found in many studies. This is an interesting piece of information which supports our hypothesis, and gives an insight into possible explanations of why one of our subjects may retain more in one reading method than another subject.

Hinchley and Levy (1988) showed that when children read, they not only focus on reading the actual words involved in the passage, but they also tie each word to the next one. While doing this, they simultaneously attempt to grasp an understanding of what is being said not only in the sentence they just read, but in the entire passage. Individuals use complex mental processes in order to comprehend what is being read. This can be difficult to do while reading, especially if reading aloud. Individuals must focus on what is being said, so that they can retain the information. However, Hinchley and Levy revealed that "skilled readers are fluent word decoders" (p. 4), and are thus able to master the task of decoding and comprehending words, and the passages in which they are contained. For individuals who may have difficulties with processing information, it may

take longer to process the information in a sentence or passage. Trying to relate the content from a sentence to the content described in an entire passage may be more difficult for individuals with learning disabilities, or individuals who have difficulties with processing information, than individuals who do not. For these reasons, we are interested in whether individuals in our study have any known learning disabilities.

The researchers, Prior and Welling (2001), found that a reader's abilities, expertise, and interest in a particular subject affects their comprehension (p. 11). Further incorporating the finding that individuals must not only focus on the words being read, but also the passage itself; and that comprehension increases when reading topics of interest, many teachers use sustained silent reading in their classrooms (p. 11). This is often used for children to help improve comprehension levels. In addition to this, Carreker et al. (2007) found that daily silent reading in the classroom for a period of fifteen minutes out of an hour-long class has helped this improvement in reading comprehension levels. Thus, the incorporation of daily silent readings in subjects which interest and enhance the abilities and expertise of a student may help to enhance the overall reading comprehension found among students. In effect, we examined how many hours of leisurely reading time our subjects engage in weekly, according to what they reported on our survey, and compared this to the reading comprehension score they received over the passage material read.

Further expanding on these ideas, researchers Ping-Ha and Chi-Ting (2000) found that sustained silent reading is beneficial to individuals. Their study found positive improvements in regards to reading skill levels and reading comprehension (p. 11). These improvements occurred as an outgrowth of using sustained silent reading in classrooms.

These results were found in students whose first and primary language was English, as well as those whose primary language was not. In effect, silent reading may be beneficial to foreign or non-English speaking students, as well as to English-speaking students, in regards to comprehension. These findings relate to our second hypothesis, where we measure the effects of primary language on comprehension when reading a passage with different reading methods. If more English-speaking than non-English speaking subjects comprehend and retain more information when reading silently than in the other reading conditions, we may consequently be able to find statistical significance with our second hypothesis.

Research found by McCallum, R.S., Sharp, S., Bell, S.M., George, T. (2004) shows that individuals who reside in rural areas, as opposed to urban or suburban areas, have lower reading comprehension levels when reading orally (p. 244). Oral reading was also found to be much more beneficial for males than females in regards to individuals who have learning disabilities. These researchers also found that students enhanced their comprehension when reading orally, because they need to concentrate and focus more in order to satisfy the listener by reading well (p. 243). This does not happen when reading silently, as the reader can skip over difficult words. In McCallum et al.'s study, "students reading aloud to another took, on average, thirty-percent longer to read a passage than those reading silently" (p. 245), although individuals who read silently to themselves read more efficiently. This entailed positive results of reading comprehension in the study, which also relates to what we are trying to measure in our study.

All in all, we have found many sources and studies which help to explain and give a background understanding of what we are trying to measure in our study. Many studies

have effectively been completed concerning the effects of reading methods on the comprehension of individuals. These studies show that there are real-life connections in this field of study, which helped to fuel our study. In addition to this, connections between reading comprehension for English and English as second language individuals have also been found in studies. This, in effect, gives individuals a more comprehensive understanding of our second hypothesis. Furthermore, our goal is to find related results in our study, to where both of our hypotheses are supported. These results will show the benefits of using different reading methods on society. The effects of language and different reading methods on comprehension and retaining information should perhaps be looked further into for use in different school systems, and when studying, so that the most effective method may be used.

Method

Participants

Altogether there were 93 participants in our study. The experiment consisted of 35 men which left 58 women. There were 67 primarily English-speaking subjects in our study, and 26 other subjects spoke a primary language other than English. These other languages included Spanish, Nepali, Swedish, and Japanese. In the group that had to read aloud to themselves there were a total of 31 participants, 30 in the group that read silently, and 32 in the group that was read aloud to. All participants were recruited from the Lindenwood University Human Subject Pool, which consists of any psychology or sociology 100 level students and all participants received extra credit from their participating professors.

Materials

The materials used in this experiment included the room used which was the psychology lab in Young Hall Room 105 Lab B. Already in the room was a table with several chairs around it, a desk and a computer which was not used for the experiment. We used papers such as the informed consent forms, feedback letters, and participant receipts, a demographic survey asking them simple questions about their Cumulative College GPA, their year status in school, what their primary language is, and whether they are male or female. They were also asked how much time they spend reading leisurely, such as how many hours per week they read for pleasure. Their reading style preference was also asked, as well as whether they considered themselves visual or auditory learners, and if they have learning disabilities that they know of. A passage on Ronald Reagan consisting of general info about his life, and a questionnaire with questions pertaining to the Ronald Reagan passage was also given to the subjects. Participants were also provided with a pen to fill out the paperwork.

Procedure

Upon walking into the psych lab, participants from the Lindenwood University Human Subject Pool were unknowingly randomly assigned to one of three groups: reading a passage aloud to themselves, reading the same passage silently to themselves, or being read the same passage out loud by the experimenter. Random assignment was used to determine which participants were assigned to what group, based on the order that they were scheduled to participate as they walk into the lab. Students were first asked to fill out the required paperwork for the study, such as the informed consent forms (Appendix A) and signing their name onto the participant sign-in sheet, as well as their

participant receipt. The participants then filled out the same non standardized survey (Appendix B). Once they were placed in a group (Appendix C), and had completed the survey, each participant was given the passage to read (Appendix D), accordingly with their assigned group. They were given as long as needed to read or be read the passage, which typically took anywhere from 3-6 minutes, and the passage was then taken away from them. This was done to prevent them from seeing any answers to the following questionnaire. Next, they were asked to answer a questionnaire (Appendix E) with several questions pertaining to the passage. The same non standardized questionnaire was used for all three groups. Participants were given adequate time to complete the questionnaire. Once the subjects finished the questionnaire, the experimenters gave a short debriefing along with the feedback letter (Appendix F) to explain what it is we are researching, and gave our contact information to the experimenters so that they may see the final results of the study if they wish. After being debriefed, the participants were verbally thanked for their participation.

Results

We conducted a one-way ANOVA for our hypothesis that individuals who read silently will answer more questions correctly than people who read aloud or get read to aloud. The result of this found no statistical significance: $F(2, 90) = 1.633, p > .05$. We also did an independent samples t-test for our second hypothesis that individuals whose primary language is English will answer more questions accurately than individuals whose primary language is not English. We did not find statistical significance for this hypothesis: $t(91) = 1.340, p > .05$. We found no statistical significance when comparing the number of correct responses on the Reagan questionnaire to any of the other variables

we asked about on our initial survey, including learning disabilities, sex, previous knowledge about the passage, year in school, and Grade Point Average. The mean for Grade Point Average is 3.132 (.5312); the mean for year in college is 1.89 (.949) meaning most of our subjects were in their freshman or sophomore year in college; mean hours of leisurely reading time a week is 2.41 hours (2.626); and the mean reading style preferred is being read to aloud, with a mean score of 1.14 (.457), as reading aloud is scored as one.

Discussion

The results of our data showed that there was not a significant difference in reading styles and memory recollection. An interesting occurrence at the beginning of our study was that both student researchers as well as the research supervisor thought that a different reading method from the other would yield better results for our study. What we realized as an outgrowth of this study is that every individual is different in regards to learning ability. Therefore, whichever reading style works best for one individual is the one that he or she will recall more information with. For instance one of our participants' that was not excluded from our study was blind. We obviously had to read aloud to him since he was not able to read the passage on his own. Obviously for him this reading style is something that he is used to and therefore has easier time recalling information. In finding this, we realize that we should have done a within subjects design for this study, instead of a between-methods design. The participant would read one of three passages aloud, the other silently, and the third one the experimenter would read aloud to the participant; with a questionnaire after each one. This way we could have seen more

significance between the different reading styles and the individual's memory
recollection.

Appendix A

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking about my reading capabilities and habits, as well as other general information, and that I will also read a short passage of literature with following related questions. I understand that I should be able to complete this project within 10 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure my anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent, or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____
 (Signature of participant)

_____ Date: _____
 (Signature of researcher obtaining consent)

Student Researchers Names and Numbers:
 Laura Lagemann 636.328.5989
 Allison Schulte 314.484.0722

Supervisor:
 Dr. Michiko Nohara-LeClair
 Course Instructor
 (636)-949-4371

Appendix B
QUESTIONNAIRE

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

1) Are you: MALE FEMALE?

2) What is your cumulative college GPA? _____

3) What is your status in school?

Freshman Sophomore Junior Senior Grad Student

4) On average, how many hours do you read for pleasure during the week?

5) What is your preference on reading? Would you rather:

Read quietly to yourself

Read out loud to yourself

Have someone read out loud to you

6) Please read the descriptions below:

Visual learners typically learn better by visually picturing information when studying, from studying graphs, and other sources of information which one can see. They typically learn better from reading themselves than from having others read or lecture to them the same information.

Auditory learners typically learn better hearing others lecture or read information to them, than by visualizing, reading information, or using visual media such as graphs for learning use. They learn better by having themselves or others speak out loud the information which they are learning, instead of reading information to themselves.

Based on the information above, which style of a learner do you consider yourself to be? Visual Auditory

7) What is your primary language? _____

8) Are you aware of any condition that you may be in that may have hindered your performance today? (e.g., learning disability, vision problems, hearing problems, etc) YES NO

Appendix C

Assigned Groups

Trial Number	Reading Method		
	<u>A</u> Read Aloud	<u>B</u> Read Silent	<u>C</u> Read To
1		X	
2	X		
3			X
4	X		
5		X	
6			X
7		X	
8			X
9	X		
10		X	
11			X
12	X		
13		X	
14	X		
15			X
16		X	
17	X		
18			X
19	X		
20		X	
21	X		
22			X
23		X	
24			X
25	X		
26		X	
27			X
28	X		
29		X	
30			X
31		X	
32	X		
33	X		
34		X	
35			X
36			X
37		X	
38	X		
39		X	
40	X		
41		X	
42	X		
43			X

44		X	
45			X
46	X		
47		X	
48		X	
49	X		
50			X
51	X		
52			X
53	X		
54			X
55		X	
56	X		
57		X	
58			X
59	X		
60		X	
61			X
62		X	
63	X		
64			X
65	X		
66			X
67		X	
68			X
69	X		
70	X		
71			X
72			X
73			X
74		X	
75			X
76		X	
77			X
78		X	
79	X		
80			X
81	X		
82		X	
83			X
84		X	
85	X		
86		X	
87			X
88	X		
89	X		
90		X	

Appendix D

[Biography of Ronald Reagan](#)

Profile of the fortieth President.

www.whitehouse.gov/history/presidents/

On February 6, 1911, Ronald Wilson Reagan was born to Nelle and John Reagan in Tampico, Illinois. He attended high school in nearby Dixon and then worked his way through Eureka College. There, he studied economics and sociology, played on the football team, and acted in school plays. Upon graduation, he became a radio sports announcer. A screen test in 1937 won him a contract in Hollywood. During the next two decades he appeared in 53 films.

As president of the Screen Actors Guild, Reagan became embroiled in disputes over the issue of Communism in the film industry; his political views shifted from liberal to conservative. He toured the country as a television host, becoming a spokesman for conservatism. In 1966 he was elected Governor of California by a margin of a million votes; he was re-elected in 1970.

Ronald Reagan won the Republican Presidential nomination in 1980 and chose as his running mate former Texas Congressman and United Nations Ambassador George Bush. Voters troubled by inflation and by the year-long confinement of Americans in Iran swept the Republican ticket into office. Reagan won 489 electoral votes to 49 for President Jimmy Carter.

On January 20, 1981, Reagan took office. Only 69 days later he was shot by a would-be assassin, but quickly recovered and returned to duty. His grace and wit during the dangerous incident caused his popularity to soar.

At the end of his two terms in office, Ronald Reagan viewed with satisfaction the achievements of his innovative program known as the Reagan Revolution, which aimed to reinvigorate the American people and reduce their reliance upon Government. He felt he had fulfilled his campaign pledge of 1980 to restore "the great, confident roar of American progress, growth, and optimism."

Appendix E
Questionnaire

1. Ronald Reagan was born in what year?
 - A. 1910
 - B. 1920
 - C. 1913
 - D. 1911

2. What is Ronald Reagan's middle name?
 - A. William
 - B. Watson
 - C. Wilson
 - D. Wallace

3. List at least two activities from the passage that Ronald Reagan participated in before becoming president.

4. Who did Reagan choose to be his Vice President?

5. The _____ "aimed to reinvigorate the American people and reduce their reliance upon Government."

6. Have you ever read or studied information on Ronald Reagan before? YES NO

Appendix F

Feedback Letter

Thank you for participating in our study. The questionnaire was used in order to determine people's different reading preferences and to see how much information a person retains through different reading processes. Our hypothesis is that participants who read a passage silently to themselves, will be able to recall more information about the passage than if they are read aloud to, or read aloud to themselves. We think this study is important because we can consequently gain a better understanding of the best reading method students use to help them retain information when studying. We think that if we find a significant correlation between the different reading methods, that it might be useful for not only teachers, but to the students as well.

Please note that we are not interested in your individual results; rather, we are only interested in the results of a large group of students, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. Our contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact us and we will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

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References

- Carreker, S.H., Neuhaus, G.F., Swank, P.R., Johnson, P., Monfils, M.J., & Montemayor, M.L. (2007). Teachers with linguistically informed knowledge of reading sub-skills are associated with a matthew effect in reading comprehension for monolingual and bilingual students. *Reading Psychology, 28*, 187-212.
- Hale, A.D., Skinner, C.H., Williams, J., Hawkins, R., Neddenriep, C.E., & Dizer, J. (2007). Comparing comprehension following silent and aloud reading across elementary and secondary students: Implications for curriculum-based measurement. *The Behavior Analyst Today, 8*(1), 9-14.
- Hinchley, J., & Levy, B.A. (1988). Developmental and individual differences in reading comprehension. *Cognition and Instruction, 5*(1), 3-47.
- McCallum, R.S., Sharp, S., Bell, S.M., & George, T. (2004). Silent versus oral reading comprehension and efficiency. *Psychology in the Schools, 41*(2), 241-246.
- Numminen, H. (85/2002). *Working Memory in Adults with Intellectual Disability*. Famr, Research Publications.
- Ping-Ha, C., & Chi-Ting, C. (2000). Evaluating sustained silent reading in reading classes. *The ITESL Journal, 6*(11).