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The Importance of Reading with Children

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The Importance of Reading with Children

By Olivia M Geisler-Wagner

An Honors Thesis Submitted in Partial Fulfillment of the Requirements for Graduation from the Western Oregon University Honors Program

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Acknowledgments

First, I would like to acknowledge my mother, Deniece, and sister, Koreena, and my father, Pat. They have put up with my shenanigans for 21 years now, and have seen me grow from a little kid who hated quiet time, to who I am today. They always listen to me rant about education and talk about my projects in school. They are both extremely strong women whom I will always look up to and strive to be like. I will be eternally grateful to my parents for reading with me so much as a child; they fostered my love of reading more than I ever thought when I was growing up. They made reading something I looked forward to the most out of every day.

Secondly, I would like to thank my best friend, someone who I have known since we were in the third grade, Rachel Mallen. She reinvigorated my love of learning when I was getting lost in school work. Without her, I would not be as in love with the Percy Jackson universe as I am today. She is yet another strong woman who I will always look up to. I will forever be grateful to her for sticking with me through thick and thin, and always being my main hype-woman.

Third, I would like to thank my wonderful partner, Sean Martinez, for being my rock since freshman year of college. Without him I would have forgotten my head if it weren't attached. He keeps me on track, and helps me to remember things that I don't write down (and some that I do and just forget to look at my planner).

Fourth, I would like to thank Sean Tellvik, my other best friend. Without his help in the Writing Center, I never would have gotten the proposal for this project complete junior year, and never would have made it through the literature review senior year. I

value our friendship more than words can describe, and have learned so much from him without even realising it.

Last, but certainly not least, my teachers. I have been blessed from Kindergarten all through college with the most wonderful, amazing, incredible teachers. Every single one of my teachers has given me something that I will take with me through life, whether that be to always be kind, or to be courteous, or to not take crap from anybody, or many more that will fill up a whole book on their own. I have to thank Mr. Alex Foz for introducing me to the wonderful world of not only Percy Jackson, but the even better real world study of science. Without studying the phases of the moon in 5th grade, I probably wouldn't be a science teacher now. Ms. Jolene Deverall I have to thank for giving me book after book after book in third grade, it really pushed my reading level to the next grade level and beyond. Without the in class library, I would have never gotten as far as I did. And Mr. Ron Stearns I have to thank for giving me the best unit of my life, The Oregon Trail, as well as teaching me to not let anybody bring me down, and even the toughest looking teachers can be the kindest. All of my teachers have provided me with the best possible education, and taught me to love every second I am sitting in a classroom learning about anything. I value my education so much because of every single one of them.

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Abstract

This project looks at how many people are actually reading with their children outside of school and deeply assesses the benefits that reading brings to a child's life that carry into adulthood. Durham's Partnership for Children (2016) conducted a study that shows only 46% of parents are reading with their child every day at home. More than half of families are not receiving the benefits of reading with their child that include decreases in behavioral outbursts, increases in fluency, vocabulary, and comprehension. Researchers have done many in depth studies that isolate and look for specific variables that show the benefits of reading, such as brain scans while viewing books or animations, or measuring the amount of words children know by the time they get to kindergarten, or analysing how intervention with good reading and parenting practices helps children thrive in the aforementioned areas. This project synthesized information from multiple sources and research projects into a brochure for parents to gain a more holistic view of the benefits of reading at home with their children. Taking multiple research papers and translating them from scientific language into everyday language helps parents to quickly read and understand the plethora of benefits their child would receive from being read to and with throughout their adolescence.

Introduction

Purpose, why I chose it, what the project is about what I did

The main goal of this project was to research, synthesise information, and share the importance of reading with children outside of school by means of a pamphlet. This project started by reading scientific research papers that discussed the various benefits of reading with children under age 8. It began as just the most discussed benefits - vocabulary and fluency boosts in children. As research progressed, many other less well known benefits surfaced such as the connectivity between sections of a child's brain during different conditions.

Once research was finished, and benefits were identified for the project to highlight in the pamphlet, graphs needed to be made to show the information synthesized from the research projects. The results from studies showing evidence for vocabulary increases, the data about how many parents read to their children at home, and how many parents read for longer than 15 minutes. Graphs help to show the data in a more "user friendly" manner. One sub goal of this project was to make scientific research more accessible to parents who do not necessarily have the time to read lengthy scientific research papers.

After figures were completed the pamphlet was created. It paired the graphs with captions and other factoids about reading with children at home. Together the pamphlet came together as a very easy to read and informative.

The original plan for the project was to get copies printed and post them in various family friend owned businesses, such as a combination child and senior daycare

center, and a doctors office. However due to the Covid-19 pandemic, these places were closed most of the year, and when they did reopen there was not an opportunity for a pamphlet to be given out for people to read because of the potential for spreading germs and the overall reluctance to grab things from new places.

Now that things are returning to normal, I could still try to place them in those locations, and once I get my own classroom I can place them there and see about getting them posted in the office.

This project was important on multiple levels. To me it was important because reading has been a part of my life for as long as I can remember. My parents read with me, and made sure I had books to read on my own, which turned into a lifelong love of reading, as well as excelling in school. The larger importance of reading ties into excelling in school. Children who are read to outside of school, and who later start reading on their own more frequently, tend to do better in school. Yet there is still a large percentage of parents who do not read to their children. That percentage of parents is the main reason I decided to generate this project as my senior thesis. My draw to becoming an educator is to help children and teens learn. This project helps me to understand more about younger children's minds, and how to help them become good learners before they reach the level where I will be teaching them.

Literature Review

This literature review is designed to synthesize a series of research studies on the benefits of reading with children. Rather than being organized thematically, it is organized by study. I synthesize each study then discuss what I took from each study for my own project and brochure.

Clarke-Stewart

Alison Clarke-Stewart (1998) studied the impact of shared reading on young students' fluency. This study was done in order to show that reading and being read to are the most important in terms of developing literacy (Clarke-Stewart, 1998). Third grade students were provided with books to read with their parents that were at a 4th grade reading level. Some parts of the texts were simplified for the 3rd graders to read and some parts were left alone for the parents to read to the children. This study used a tactic called 'shared reading' where parents and children are reading the same book together. Parents read the more complex passages and the children read the passages at their independent reading level. This shared reading strategy helps the child to be able to read things above their current reading level so they can develop their fluency and comprehension.

The results of the study showed that students who read the adapted 4th grade texts had increased fluency and comprehension after shared reading with parents. It is not a new idea that children need help outside of just school to improve their literacy skills. This study further proved that children who took turns reading with their parents had improved abilities and motivations when it came to reading (). The study also

acknowledges that how much parents are listening to their child read has positive correlations to accuracy and comprehension ().

One thing this study failed to take into account was how many books were being read at home and the frequency at which they were being read. Some parents could have made it through many more books than others if they read with their child more often. It would be interesting to look into the impact of reading one book over a set time period versus five books over the same time period. This could highlight if a child would have increased fluency from reading more books in a set time, or if it would be too much and cause a decrease in fluency.

This study addressed one of the biggest impacts of reading with children. It quantifies the benefit of increasing fluency, since putting a solid value on it helps to visualize the benefits to help persuade parents to read with their students outside of school. This study helped me to gain a deeper understanding of benefits children receive from being read with, so when I am formatting and choosing information to put in my pamphlet, I have concise benefits to choose from.

Fletcher and Reese

Kathryn Fletcher and Elaine Reese (2005) completed a meta- analysis of different studies on reading with children. They looked for commonalities across different studies to see what has and has not been assessed. It was found that many studies focus on parental behaviors and the parents' role in reading with their child, and few studies focus on literacy skills and child interactions with the text. Such studies focusing on

parents found that parents usually stick to attention grabbers when reading with younger children. Instead of just reading the text, they also discuss pictures and what is happening currently in the story/pictures. Once children get a little older, around age three, then reading transitions to being more about vocabulary acquisition and conversations.

One pattern Fletcher and Reese discussed was that almost every study they reviewed was centered on white middle class families, and those studies don't take into account the diversity of families in the world. Furthermore, Fletcher and Reese noted that the studies they analyzed focused mainly on mothers reading with their children, which doesn't take into account families with stay at home fathers, single fathers, or families where fathers read with their children.

One of the shortcomings of this paper is that they could only include a set amount of studies in their analysis. They could have found a larger sample size to draw from, but that would have made the analysis a lot more unmanageable to compress and draw patterns from. This study had interesting conclusions which guided my choice in other texts to research for this project. I tried to find studies that focused on the children more than the parents' behaviors, such as the article Clarke-Stewart (2005) wrote about increasing children's fluency through reading. I did this in order to hone my research, so I can focus on how children are benefiting and really get to the root of my thesis question: why reading with children is important.

Evans, Fox, Cremaso and McKinnon

Evans, Fox, Cremaso and McKinnon (2004) conducted a survey of parents and teachers on how they felt towards reading with children in order to show possible discrepancies between school and home reading. They asked questions regarding graphophonics and constructivism in terms of reading. Graphophonic views are centered around decoding letters on the page, accurate oral reading, and learning letter-sound correspondences. This tactic focuses more on learning the words on the page and knowing how to pronounce them and form sentences with them. This is often described as decoding. Whereas constructivism views are drawing on a more broad knowledge and interest base in order to construct the meaning of texts. This view will utilize high interest materials with natural language so that children can predict things from pictures and language in the text.

The results of the survey found that parents and teachers conflict on their views of reading. Parents tended to be more in the graphophonic viewpoint, and teachers leaned more towards the constructivist viewpoint. This means that teachers are placing a higher value on context clues and learning through context, while parents are placing more value on phonics and word acquisition, which creates a disconnect between reading at school and reading at home. Phonics and context understanding cannot be built upon without the other. If parents are not asking context questions at home while reading, then children will only build context learning at school. If teachers are not focusing on phonics and oral acquisition at school then students will fall behind in that aspect of reading. Phonics and context go hand in hand, they are the two most

important parts of reading and children cannot build reading skills by focusing on just one or the other.

One of the ideals that this study should have focused on more is the fact that phonics and context go together so well. It is possible to do both in the classroom and at home. Teachers and parents shouldn't have to choose which one is more important because they are both very important to being able to advance as readers. This is often described as a balanced literacy approach. One of the most important takeaways from this study is that there is way more to reading than just looking at context or just learning words. Parents and teachers should understand that they can't just focus on one or the other. They should be helping students with building language and word acquisition and helping them to understand context as well. This helped me to understand where the disconnect between home and school lies in terms of reading with children, so I can better point out to those reading my pamphlet how they can help bridge the gap and how reading with their child helps them grow.

Rettner

Rettner (2012) discusses the importance of having books around children through a long term study where researchers analysed the home environments of participants when they were young children, either at ages four or eight. Researchers were looking for things that would stimulate a child, such as books and toys for learning. Twenty years later, the children from the study had brain scans to look at the thickness of their cortices. Cortex thinness or thickness, however one looks at it, matters because

as one gets older, the cortex naturally thins out as it loses general brain cells and develops cells for specialized tasks.

It was found that if there was a stimulating environment for children around age four, their cortices were thinner than those that had less stimulating home environments. This proves a correlation between the level of stimulation and the thinness of a cortex. More stimulation means a thinner cortex, average stimulation will produce a more average cortex, and less stimulation will yield a thicker cortex. While cortices fluctuate as humans progress through their teenage and young adult years it is easy to see patterns such as these through scans and analysing trends that date back to participants' early years. The interesting thing the study found was that the amount of stimulation at home around age eight had little effect on the thinness of the cortex in young adulthood. This highlights the importance of beneficial stimulation before children are school aged and thus spending less time at home. There is a window of optimum opportunity for stimulating children for thinner cornices as adults, much like there is a prime window for language acquisition, and if the window is missed it takes a lot more time and effort to obtain.

One thing this article focuses on is Intelligence Quotient (IQ) scores, which have been proven to be unreliable. IQ tests have been funded on racist principles and are therefore an inaccurate way to measure intelligence. Parents and sometimes educators place a high value on a person's IQ score when there are more equitable ways to measure an individual's intelligence. While this study does place a high focus on IQ

scores, the results of the study are still valuable knowledge to take into account when looking at why it is important to stimulate children with books.

Parents should understand from this article that the more beneficial stimulation they provide their children, like books and learning games/toys, the more specialized cells there will be in their brains. It is incredibly important that parents understand that the real impact of stimulation comes before their children go to school. I used this article to get information easily accessible to parents and families already and refine it to a greater extent for my pamphlet to make it even easier to access. I also included it to provide a contrast to the more academic leaning sources I included, which can oftentimes seem intimidating to parents if they haven't had prior experience with them.

Ohio State University

Researchers at Ohio State University (2019) talk about the 'word gap' between children who were read to and those that were not read to by the time they reached kindergarten. The 'word gap' refers to the difference in the number of words a child has heard based on whether or not they were read to. To find the word gap, Logan and her team analysed the top 30 most circulated books in two categories - board books for infants, and picture books for toddlers. They counted how many words were in each book and used the data to calculate how many words a child would theoretically hear by the time they were five years old accounting for multiple levels of being read to.

They found that by the time a child was five years old they would have been exposed to: 4,662 words if they weren't read to; 63,570 words if they were read to 1-2

times a week; 169,520 words if they were read to 3-5 times per week; 296,660 words if they were read one book daily, and 1,483,300 words if they were read 5 books daily (Ohio State University 2019). These results show a dramatic increase in vocabulary and reading development between each category. Children that go into school already knowing that many words have a much easier time learning to read on their own and out loud themselves. It is also important to note that learning words from books is different from learning words through conversation. Book words are usually more complex than conversational words; they are built into the story to increase vocabulary building in children.

Something this study could have researched more is the jump between daily reading and reading 5 books. It is the largest jump between categories with daily reading providing almost 300,000 words but 5 books daily providing almost 1,500,000 words. It would have been interesting to see what two books a day, or three or four would have provided a child with word-wise as a means of bridging the gap between one book and five books a day.

This study provided another quantifiable statistic that is eye-grabbing and shocking to parents that I can use in a table in my pamphlet. It also provided a slightly different benefit than discussed in my other sources which talked about oral acquisition and the importance of reading outside of school. While the other sources covered the importance of reading at home and general benefits, this study puts formal data with the claims to help drive the point home. Parents should be able to take away the impact

of just reading once or twice a week with their child, as well as understand how much bigger of a difference reading multiple books a day with their child can make.

NPR

Dr. John Hutton (2018) led a research project that looked at FMRI images of children's brains while they were being read to in different conditions to see which parts of the brain were active during the story. The different conditions were: the children only got the audio of a story, they got the audio and pictures of a story, and they got an animated cartoon. Researchers used 27 children in the study. While children were in an MRI machine, an audio would play a story and the scans would reveal which sections of the child's brain were active while listening to the story. The same was done with the other conditions, scanning while reading and looking at pictures, and scanning while watching a cartoon.

After the MRI scans were collected and reviewed, a definite pattern arose. Hutton deemed it the "Goldilocks Effect." Children who just got the audio had brain scans that showed language networks being active, but not connecting to other areas such as visual perception and visual imagery. This was deemed to be "too cold." On the other end of the spectrum was the cartoon which was deemed "too hot" because scans showed a lot of activity in the two visual areas, imagery and perception, as well as the audial language area, but they weren't connecting at all. In other words, children's brains were working overtime but not forming connections to allow for comprehension of the story. The condition deemed just right was that of reading and following along

with pictures. This showed moderate activity in the three regions of children's brains being looked at as well as adequate connections between those areas showing that children were comprehending the story better than in the other two conditions.

Hutton (2019) further explained that the reason audio and pictures create an ideal zone for comprehension is because the images give children a starting point, but they have to use the audio to fully piece the story together. Whereas with the cartoon it is all done for them and is a flood of information they can't fully comprehend.

One of the biggest limitations in this study is the relatively small sample size.

While the pattern in the data was clear it would have been interesting to see how the pattern showed up in a larger set of children. With a sample size of 27 it is hard to tell if a clear pattern would be as clear in a large set or as a generalization for all children. With a larger sample the outliers would be more clear. Each child is unique and while generalizations can be made it is also important to acknowledge the needs and abilities of the outliers in generalized statements.

This research guided my thesis project by addressing the effect of technology on children's brains. While technology is a good tool for developing minds and life skills, "iPad babies" have become a distinct group with behavior issues stemming from technology being used as a distraction. Many children are given a tablet of some sort to play games and entertain themselves with videos or shows for various reasons.

Occasionally, it goes beyond that and becomes the child's primary source of activity which is detrimental, as shown through the results in this study. Children who are spending more time on iPads may get overwhelmed with information and therefore

won't develop connections between visual and audio centers of their brain. Parents who do not read with their children and instead give them a tablet to entertain themselves are setting their children up to not develop at the rate they are supposed to. This can be easily remedied by taking some time to read picture books with toddlers.

Klass

A team of researchers and doctors noticed a trend in young children that were read to were more well behaved and those that weren't read to tended to have more attitude and behaviour problems. In order to see if there was a true pattern to their hypothesis, they gathered over 600 families and videotaped interactions between parents and their children. Afterwards parents met with a parenting coach who analysed the reactions in the video. Parents were given toys and books as well as positive parent training from the coach. The researchers expanded upon a previous study by starting with younger children, and following them later on into school. In the expansion later on - when children were around five years old - they went back in and were videotaped again and then got re-coached and obtained new materials like books and toys, almost like a booster shot of a vaccine. Showing parents videos allowed them to not only reflect on the practices they saw in the video but also how to change their parent practices to help their children. The expansion research showed that not only did later intervention help decrease aggression and hyperactivity, but earlier intervention actually helped prevent it from coming up in the first place.

This study was adapted from an earlier study that followed a similar method with low income families to help with behavior in children. The previous study found that intervention with toys and books helped decrease aggression and hyperactivity in children when they became school aged. The biggest takeaway from this study is the impact that positive interactions with a child through reading and playing can have on their behavior. In the last few years, teachers have noticed the increase in classroom outbursts through anger and hyperactivity and that can easily be combated and taken down by parents having positive interactions with their children.

One big limitation with this study is that researchers mention the intervention of reading shows more behavior improvements the younger the child is, but don't get into details on how they were able to make that claim. The study followed children until the age of five, so the big limitation centers around the idea of reading intervention later in elementary school, around age 10 or so. It would be beneficial to research how that would compare to reading intervention with children at younger ages, if it really makes a substantial difference what age the child is, or how much they are reading. Another possibility is that it's not just reading that would have behavioral effects on children, it could be that they need to be stimulated in a different way and they don't know what way that is yet, and acting out is how they show they aren't doing well in the current environment.

Despite these drawbacks, I decided to use this article to help show the less academically focused benefits of reading with children at home. Many people get caught up in the vocabulary and fluency boosts, and the ways reading boosts abilities in other

subjects, but they don't think about behavior improvement which not only benefits school, but also benefits behavior at home and eventually in the workplace. This will help my pamphlet by appealing to parents who aren't as concerned with academic achievement by providing researched based claims for other benefits of reading with their child.

Kris

This article follows one mother's anecdotal research and experiences with parenting and understanding her children. She describes how books and reading with her children have helped them develop socially and emotionally, allowing them to find a way to share things they do not have the words for on their own yet.

She continues to describe the benefits she has noticed with her own children through reading with them from a young age. These include things such as increasing vocabulary, noticing they read on their own earlier than classmates, creating routines, building their emotional toolkits, prediction skills, and using context clues to build empathy. This shows that the benefits of reading are seen in many contexts and many areas. Children who are reading on their own earlier than classmates will be more advanced in other subjects as well. Being able to create routines on their own shows maturity and will lean them into self sufficiency and away from procrastination and a need for constant supervision. Building up emotional toolkits allows children to empathize with other people, and the ability to use context clues to empathize helps

them develop even more to create meaningful connections with others and be kind, caring, compassionate individuals.

One of the big limitations of this article is that it is a mom blog and there is no scientific evidence to back it up. This means that it isn't as widely applicable as studies done by professionals who have studied specific hypotheses about benefits of reading and how it affects larger numbers of children from different families, backgrounds, religions, etc. This is one mom's experience with her own children, and it most likely won't be the same experience as a different mom with different children in a different part of the country or world.

I still like this article and included it in my thesis because it provided a parent's view on how reading affects their children. All the other sources look at it from a more empirical standpoint and are science and data driven which is important because it is hard proof that reading benefits children immensely. The goal of my thesis project is to reach parents, and while I can decode scientific papers and get the important information out of them, I am not a parent yet and therefore can't speak to the changes they are going to see in their own child if they read with them consistently. I think it is important to have that parental perspective included in the project to help parents relate to it more and be more open to reading with their children more frequently.

Reflection

Why I chose this project, why it is important to me

I came about this topic because I saw a Facebook post from my cousin, a mom of two and a teacher, that was about parents reading with their children. I was a little taken aback at first, because I have always thought reading with your child was very commonplace and everyone did it. Then I started looking into it more, and found that less than half of parents read to their children. This shocked me because my dad read to me and my sister every night before bed, from as early as I can remember, until I was in high school. We got through so many book series by reading with my dad. For me, we got through Junie B. Jones, The Boxcar Children, the Beverly Cleary books (like Ramona and Beezus), Marley and Me, Nancy Drew, countless ballet books (like the Nutcracker at least 5 times), and my personal favorite series - to this day- Percy Jackson and the Olympians.

I was first introduced to Percy Jackson by my 5th and 6th grade teacher, Mr. Foz, by him reading the first book aloud to my class for reading time, which we had every day. Additionally, reading was very important for my whole elementary school. We had a 'Read Across America' challenge every year, where we tracked our reading at home every week for a month or so and it was a school wide competition, the class/grade with the most minutes got a party at the end. There was a big display near the cafeteria of the school that was a map of the United States with a chart across it which was filled in with the minutes we had all read. It was really great to see my work be filled in and further the progress of the whole school. Also in elementary school, we were taken to

the library for 30 minutes a week in order to pick out one or two new books to take home and read.

Another fond memory about books from my childhood was the Scholastic Book
Fair that my elementary school hosted each year. Hundreds of books came for all ages of
kids; it was truly wonderful, I was like a kid in a candy store whenever it came. My mom
would volunteer at them, so I got to go with her and sit quietly while she worked. Of
course I would go peruse the shelves and sit down somewhere and read one of the
books there. This is how I came to find my favorite book of all time, *The Splendor Falls*. It
was right up my alley, it was about a ballerina who got injured and went down south to
her deceased father's estate, where she fell in love and discovered that she possessed a
type of natural magic. It combined so many of my favorite things, and has been my
favorite book for many years now.

My elementary school did a lot in order to further the interest in reading, but what helped even more was that my parents valued reading very much.

Even before I got to elementary school, my sister, mom, and I had 30 minutes of quiet time every day that was designated for reading. Since I was so young, I would get a stack of ten or twelve books and sit there and go through all of them. They were mostly things like Dr. Seuss, and Disney Princesses, that were for kids in preschool and before.

My mom also put my sister and I in summer reading programs through the public library in Oregon City, this really kept me on track over summers when a lot of school learning can be lost. I got through a lot of books by myself once I got into second and third grade. I read so much that my reading level was three to four grades past my grade

level. My wonderful family and teachers just kept feeding me books, and I just kept devouring them. My third grade teacher, Ms. Deverall, introduced me to the Little House on the Prairie book series that was about Laura Ingalls Wilder, and her family's travels on the Oregon Trail. I was obsessed, so much so that my family took me on a road trip that included some of the main attractions from the Oregon Trail days.

I was extremely fortunate to have such a supportive childhood, in general terms and in terms of reading a lot. It really helped that I was introduced to books that really sparked interest in me from my teachers as well as my parents, it showed me that my teachers really cared about me and my education. I will forever be thankful for my parents and teachers for giving me such a wonderful and enriching childhood, without them I would not be who I am today. I really hope that one day, every child will be able to have as enriching a childhood as myself. I recognize that this is not possible right now, but I will do everything in my power to change that. Reading is something I have always, and will always, feel extremely strong about.

In middle school and high school, things changed. There was no more 'library time' even though they both had massive libraries that I would have loved to pick through. My reading was now just a me thing that I needed to do on my own time. I had seven classes a day in middle school, and five in high school, which left just about no time for free reading when accounting for homework. I still made it work though, I have my best friend to thank for that. She and I bonded over our love for the ever expanding universe of Rick Riordan, the author of the Percy Jackson series, the Heroes of Olympus series, the Kane Chronicles, the Magnus Chase series, and the Trials of Apollo series. Our

shared love of these books made me finish my homework faster, just so I could read the next book until I couldn't keep my eyes open.

As time went by, and adulthood came, I slowly had less and less time for reading as I focused more on my studies in order to achieve my dream of becoming a teacher. As a future teacher, and a current student, and a past child, I have come to understand the dire importance of reading. Reading is one of the most important parts of a child's development and education, yet it is not done enough. Even though I want to be a high school teacher, I recognize the importance of reading intervention in early adolescence, and feel extremely passionate about it.

There are no downsides to reading with children, only more and more benefits. As a scientist, I recognize that patterns arise very easily, and once they are done enough they become common practice. If parents read to their children, their children will grow up and read to their children, who will then read to their own children. As the cycle continues, there will be more and more reading done, which will not only help individuals, but the whole country one day.

I knew that I wanted my Honors Thesis project to encompass my two greatest joys in life, education and science. I came up with this project because it involved a lot of research of scientific studies that had been done, as well as being filled with educational tones. While I historically dread reading scientific papers for class, and writing them, I knew this would be different because it is about a topic which I hold very near and dear to my heart.

What I would change if I did it again

If I were to do this project over again, with more time, resources, and credibility, I would want to do a long term study of lower socioeconomic families since that hasn't been done yet. I would first survey them to get a starting basis for how much they read at home, how they read with their child (child reads and parent listens, questions being asked or not, etc.), and more. Then I would give a random sampling of those families tools and time to read with their child effectively. Effectively reading with a child differs in parental behaviors based on the age of the child. Younger children should have labeling and talk about pictures and words they might not know, whereas older children should be having conversations about the messages behind the text, and the plot, and so forth. After the children have grown a few years with the reading intervention, I would continue to follow them throughout their educations to see what test scores they receive, what grades they get, how much they read on their own, what kinds of careers they pursue, and more, in order to see what affects the reading intervention had on them as children.

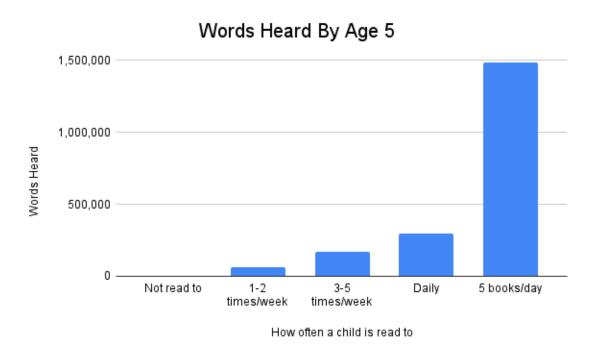
If I had to do the exact same project again, I would make a couple changes as well. I would make myself self pace better when it came to research. I let myself get behind in this project a couple times because I put my concentration biology classes ahead of my thesis and allowed them to take up more of my time, as well as procrastination in general. I would give myself about a month to really read and delve deep into each of my main sources, some of which are very lengthy and difficult to

understand. It would help me to know the material that well, and would give me an easier time later when trying to complete the literature review and pamphlet.

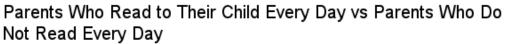
In regards to the pamphlet, I would change the places I put it, I would think more deeply, and get over my anxiety about reaching out to locations to place it earlier in the planning stages. I would have reached out to public libraries and other doctor's offices, and any place I could think of in order to get the pamphlet out to as many places as possible because the more people that see it, the more are likely to change their ways and begin reading with their child.

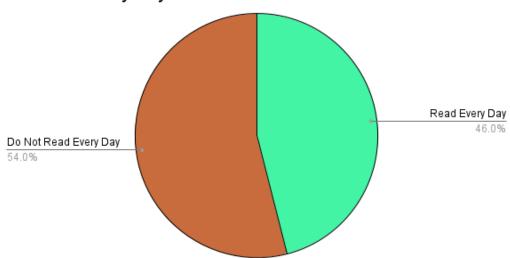
Appendix

Figures used in the pamphlet:

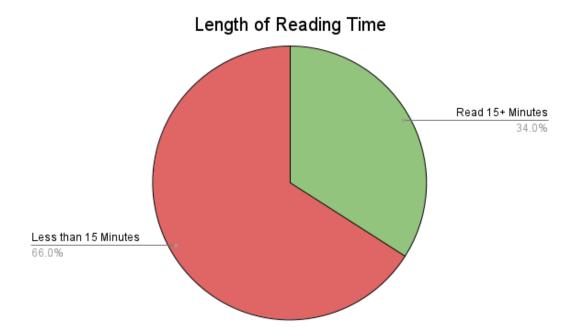


A graph representing the number of words a child is heard organized by how often they are read to/with at home.





The percentage of parents who read to their child every day compared to the percentage that do not read to their child every day.



A comparison of parents who read to their child for 15 or more minutes versus parents who read to their child for less than 15 minutes.



Outside cover of the pamphlet.



WHAT DOES YOUR BRAIN'S **CORTEX HAVE TO** RFADING?

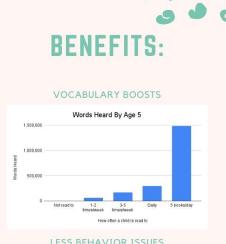
The cortex naturally thins as we age, because we lose general brain cells and keep brain cells for specialised tasks.

However, children who were in stimulated environments, children who were read to at home, before age 8 showed thinner cortices than their peers who were in less stimulating envrionments.

The prime window for benefits of a stimulating environment is before age 8. After children reach age 8, the window decreases and benefits don't show up as well.







LESS BEHAVIOR ISSUES

Intervention with books and educational toys at home helped to reduce hyperactivity and aggression in children during school. Behavior is becoming a more and more important topic for education, and a bigger problem in classrooms. It can easily be combated by intervention with reading.

INCREASED FLUENCY AND COMPREHENSION

Children who are read to at home have shown proficiency in fluency and comprehension quicker than classmates who are not read to at home. Additionally, brain scans have shown that more 'cross brain' connections are made when being read to than when watching a



Inside of the pamphlet

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