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Reading Rainbow: Give Hope to Struggling Readers

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Abstract

For this Senior Capstone Project, the researcher investigated what stakeholders had to say about reading difficulties, the Irlen Method, and how to increase awareness and access to the Irlen Method in schools. Based on analysis of the data and the relevant research literature, the researcher used what she learned to formulate an action that responded to the focus issue. This is important to students and other stakeholders that have reading difficulties.

Keywords, Reading Rainbow, Color Overlays, Irlen Syndrome, Irlen Method, Reading difficulties

Reading Rainbows: Give Hope to Struggling Readers

Once upon a time, there was a young girl named Celia who was forced to read at a young age. She used to love reading, but one day she was reading a book and started to notice that her vision was acting weird as she read the book. The book that she was reading was *Harry Potter and the Half-blood Prince*. This was the only book she actually enjoyed reading out of all the Harry Potter books! Her vision was great as she began to read the book, but as the day went on the words started to fade and she started to get closer and closer to the pages because the words were almost disappearing. When she first noticed this, she would take a break and give her eyes a rest, but that did not work anymore. At one point she tried to distress her eyes by placing a cool damp cloth on them, which helped but did not solve the issue. As the rest of the day went on she started to realize that she was getting headaches every time she picked up something to read whether it was hardcover, paperback, and or on the web.

Ever since that day, Celia hated reading and has hated it since, until one day she got an iPad and could read through the Kindle app. She read many different series that had about ten or more books. This is still her preferred way of reading. She hates paperback and hardcover books. One summer she got into a next reading craze, she could not put the books down. They were not required books to read, they were read just for fun and for some enjoyment. This woman loves to read about fantasy in books. Her favorite books are about dragons and the *Cat Who* books which are stories about two cats and their owner who solve murder mystery cases.

Celia was never diagnosed with Irlen Syndrome, but has some of the symptoms of it. For example, her reading comprehension is poor, she gets distracted easily, especially when reading. Additionally, she loses her place frequently and has to reread sentences and paragraphs because she cannot comprehend what something is about. She also gets reading headaches as well. If she was diagnosed with Irlen Syndrome, maybe, just maybe, she could have had a better focus on reading, and not always feel like giving up. She can read but it takes her a while to read even a short article sometimes. Celia has experimented with different colors, using plastic color overlay sheets and she even went to using highlighted colors while reading books on her iPad. She does notice that the words are easier to read and does not get headaches as frequently, The color that seems to work best for her is green.

Celia has somehow survived high school and graduated from a community college. She is almost done with the University that she has attended for three years. She will be graduating this fall, but will not walk until Spring. Celia is surprised by how she has successfully finished her college courses with this challenge, but grateful to finally learn about Irlen Syndrome and the Irlen Method and perhaps teach and inform other struggling readers on how to improve their reading skills with the use of the Irlen Method and how to use color overlays.

Literature Synthesis & Integration for Irlen Syndrome

In this section, I will answer three questions. What is the problem? Why is it an issue? and What has or should be done about it? I will also define two terms, the two terms are Irlen Syndrome and Irlen Method. In this article “What is Irlen Syndrome?” (Accola,D, 2019), it tells about how Irlen Syndrome is not just a genetic problem. Irlen Syndrome is also a problem with how the brain processes visual information. In the same article, (Accola, 2019) defines what the Irlen Method is as well. Irlen Method is the use of color overlays which help with reading black text on a white background. For this project, I am focusing on students in elementary school who have difficulties with reading. These reading difficulties can affect the students individually, socially, economically and it can affect a students’ education (Gunn, 2018).

What is the Problem and Why is it an issue?

According to Kozol (1985) in *Illiterate America*, “fifteen percent of recent graduates of urban high schools read at less than a sixth-grade level. One million teenage children between twelve and seventeen cannot read above the third-grade level” (p. 4-5). This is surprising because not everybody knows how hard reading is for students. At the elementary level, a student can hide the fact that reading it very difficult for them. But once a student enters high school it can become a little bit more clearer that they struggle with reading, especially with reading comprehension. Gunn (2018) and Mastropieri and Scruggs (2018), talk about how reading difficulties affect students and even adults. I believe that some students may or may not want to let their teachers know that reading it very hard for them. This is

a problem because if students do not feel comfortable telling their teachers that they have issues with reading not only are they struggling with their academics . If struggling students do not tell their teachers that they have issues with reading they may not be able to get the extra help that student needs to be successful.

Not being able to read well or not at all can have a negative impact on the individual, economically, socially and academically. For people who cannot read this issue can affect them individually for example this can lower a student's self-esteem. For example, Turunen, Poskiparta, and Salmivalli (2017) found that students who cannot read can get bullied by their fellow classmates which can put a strain on students socially. As a result, bullying can lead a person to being less social. While getting bullying those students who have difficulty reading may not feel comfortable with make friends because those students may not feel safe around their peers. Some of the negative impacts of reading can affect them economically, meaning they will have a hard time getting a job. Most jobs require people to be able to read and understand applications. Not being able to read does make students have a hard time with their academics.

What has or should be done about it?

For starters, schools have used over the years something called Multi-Tiered Reading instructions. According to (Mastropieri & Scruggs, 2018) RTI means Response-to Intervention. RTI has three to four different levels of intervention to help struggling students with reading mostly, but these levels can also help other students who just need extra help with other academics as well. Another method to correct the issue with reading is something called the Irlen Method. As stated in *Reading Problems, Dyslexia, Learning Difficulties & the Irlen Method* (2019), if struggling students have issues reading beside the basic medical diagnosis for example Dyslexia this can make reading very hard which is a type of reading problem. Students who have been diagnosed with Dyslexia or other learning difficulties some of the symptoms this can actually be a sign of Irlen Syndrome. In the same article some of the symptoms of Irlen Syndrome include, poor reading comprehension, and some people can get headaches due to light sensitivity. Some of these symptoms are also symptoms of dyslexia.

In an article by Uccula, Enna, and Mulatti 2014) the Irlen Method uses plastic color overlays sheets that can go over text on the computer and all kinds of books. Students that have been diagnosed

with Irlen Syndrome can use color overlays glasses which does the same thing as the color overlay plastic sheets. Both options can help with getting rid of the white background that the text is on (Uccula, Enna, & Mulatti, 2014). For example, if a student was diagnosed with Irlen syndrome and green helped them best, then they would use this to get rid of the white background. Instead they would see black text on a green background.

This method helps with reading fluency, it helps them focus on the task at hand, it also helps struggling students increase their reading comprehension after a while. In some cases students eventually grow out of using the glasses or the screens. Family members and even schools can purchase these color overlays through different websites like Irlen and Amazon, and even some stores. In some cases, people would prefer the use of glasses.

Conclusion

I have answered the three questions: What is the problem? why is it a problem? and what has or should be done about it? I also gave evidence on why having reading difficulties can make a student's life miserable whether it be socially, economically, individually, and academically. There is a method in place of the school systems which is the multi-tiered levels of instructions or the use of response-to-intervention. There is also a method that should be included with multi-tiered instruction to and that is the use of color overlays which come in two forms: plastic sheets and glasses.

Method

For this Capstone Project, the researcher investigated what stakeholders said about reading difficulties, how the Irlen Method can be used to increase reading abilities, and how schools can use this method. Based on an analysis of the data and the relevant research literature, the researcher used what she learned to formulate an action that responded to the focus issue.

Context

These interviews happened all around different parts of California. The three interviews I did one live in Monterey Bay, another interview took place over the phone while she was at her house in Chico/Paradise. The last interview took place also over the phone she is in Long Beach California which is

where Irlen Institute headquarters are located.

Participants and Participant Selection

The researcher invited three people to do an interview. I chose each one because they either have reading problems that they had no idea why reading was so hard for them. My other two interviewees are diagnosticians for the Irlen Institution. The Irlen Institute is found in Long Beach California. This is where each diagnostician is trained and then placed throughout the world. One of the two diagnosticians is the founder of the Irlen Method.

Grace¹. Grace graduated from California State University Monterey Bay in December 2017. I chose her because she has had trouble with reading ever since she was a kid. She had absolutely no idea why she had issues reading. Until she went to Monterey Peninsula College which is a public community college and there she was tested for Irlen Syndrome and found out that she does best with a green overlay and she even has the glasses. That is why she was the very first person that I interviewed.

The location of the interview took place in the Student Center by Starbucks at California State University Monterey Bay. It was on Saturday October 19, 2019. The interview took place around 1:30 on that day.

S. H. My second interview was with an Irlen Diagnostician and she is from the Irlen Institute. She lives in Paradise Chico and her office is also in Chico and her office is located at 809 Nancy Lane | Chico, CA 95926. I interviewed her while she was at home over Facetime. The interview with S.H. took place on November 11, 2019 around 10 am. Chico/ Redding is about 1 hour away from Mount Shasta. Chico is about 2 hours away from Mount Shasta.

H. I. . HI is the founder of the Irlen Method and Institute. I interviewed her over the phone while she stayed in Long Beach California. This is where the Irlen Institute headquarters are. H.I. has been doing research and testing people for over thirty years. She is also the founder of the Irlen Syndrome and Irlen Method and she trains a lot of other people for the institution and also for some schools as well this including S.H.

¹ All Proper names will have a Pseudonym

Researcher. This is personal for me because I have seen and witnessed this method through my mom when I was home from school. I believe if people who struggling with reading will most likely struggle throughout their schooling and their daily lives. I have also tried it while I was at one of my service learning classroom at Martin Luther King Jr. Elementary school. I worked in the second grade classroom. There were also a lot of English Language Learnings. Some of those children had issues with reading so I tested them with the use of color overlay plastic sheets. Unfortunately those students who I tested not sure if they used the color overlays or not.

Semi-Structured Interview and Survey Questions

Grace

1. Tell me about your reading challenges.
2. What has helped you to deal with or overcome your challenges?
 - a. Have you heard of or ever used color screening?
3. What do you think should be done to help students overcome reading challenges in schools?
4. Is there anything else that you would like to say about reading struggles or helping kids who struggle with reading?
5. Have you thought about learning how to test?

S.H.

1. Tell me about Meares Irlen Syndrome and use of the Irlen method.
 - a. Where did you learn about color overlay?
 - b. Who taught you how to use the color overlay method?
 - c. What made you want to test this method in the first place?
2. What is currently being done to increase awareness of color overlay - by whom - and how successful are these efforts?
 - a. What do you do during and talk about during your training?
 - b. How aware are schools of this method?
3. What do you think should be done to increase awareness of color overlay?
 - a. How have you told schools about this method?

4. What do you think are the obstacles to increasing awareness of color overlay?
5. Is there anything else that you would like to say about increasing awareness of color screening in schools?

H.I.

1. Tell me about Meares Irlen Syndrome and use of the Irlen method.
 - a. What made you start doing research of Meares Irlen Syndrome? And started putting in place the Irlen Method? What do you see as the benefits of using color overlay?
 - b. What brought you to do this research?
 - c. How has this research affected you personally?
 - d. Why does this research affect you personally?
2. What is currently being done to increase awareness of color overlay - by whom - and how successful are these efforts?
 - a. How aware are schools of this method?
3. What do you think should be done to increase awareness of color overlay?
 - a. How have you told schools about this method?
4. What do you think are the obstacles to increasing awareness of color overlay?
5. Is there anything else that you would like to say about increasing awareness of color overlay in schools?

Procedures

Interviews were all done individually. When it was not possible to interview participants in person, they will be invited to complete a phone interview or paper and pencil survey of the same questions. Face-to-Face interviews will take less than one hour, be audio-recorded (with participant consent), and take place in a mutually agreed upon location . A semi-structured interview formal will be used for face-to-face interviews, to allow for follow-up questions to unclear, interesting or unexpected responses. All interviews/surveys will be scheduled at the convenience of the interviewee and should take approximately 20 minutes to complete.

Data Analysis

After all the interviews were done, I transcribed what they said and found three emergent

themes.

Results

For this Capstone Project, I interviewed two Irlen Diagnosticians who are both from from the Irlen Institute they are S.H and H.L. which is the founder of the Irlen Method. I also interview someone who was actually diagnosed with Irlen Syndrome. I interviewed them to see what their thoughts were on helping struggling students and adults who have reading difficulties. This is important because people who struggle with reading have a hard time in school and even daily life. Based on an analysis of the data and the relevant research literature three themes emerged (see Table 1). Evidence-based decision making required evaluating each potential Action Option by the following criteria: time; cost; and effectiveness. Based on the evaluation of each Action Option an action will be recommended and justified.

Table 1

Evaluation of Action Options

	[Time]	[Cost]	[Effectiveness]
Self- Diagnosis	Medium	Low	Medium
Professional Diagnosis	High	High	Medium
Increase Awareness	Medium	Low	Low/Medium

For all three of these action options I chose to evaluate each one with three criteria. This includes Time Cost, and effectiveness.

Self Diagnosis

For starters, the self diagnosis test which is found on the Irlen Method official website (<https://irlen.com/get-tested/>) is a test that one can take. There are short and long forms of the test and there are other tests on there as well. The short test take about 5-10 minutes, while the long test can take up to twenty or thirty minutes. So, as a result the time of this is medium, because it all depends on which

test a person chooses to do. For the next criteria, evaluation, I put low because it is a free test so the cost is absolutely nothing. For the last criteria the effectiveness of this is pretty low as well because it either tells you that you are at risk of having Irlen Syndrome or not. These self tests may or may not be one hundred percent accurate.

Professional Diagnosis

A professional diagnosis requires people to find a testing center near them. This takes a fair amount of time. In some cases, to get a proper diagnosis may require one or more people to get tested, as well as doing different tests while at the institution. For the second criteria to get a professional diagnosis will cost around two hundred to over five hundred dollars. That is just for the testing and does not include the cost to travel to get to a testing center. It can also cost money to get the things that one would need if they are diagnosed with Irlen Syndrome. For these costs there are scholarships that people can get given, but only by a professional diagnoser which they provide. The effectiveness is medium because people who were diagnosed with Irlen Syndrome may or may not stick with using color overlays or the color overlay glasses.

Increase Awareness

For the last action option, I chose increasing awareness. For time, I picked medium because it will take time to increase awareness in schools and even in families, which can be a slow process. For cost I chose to go low because there are free ways to increase awareness which include word of mouth, podcasts, videos on Youtube and other means of media. According to Media (2018), Irlen Method has many journals and they have used different sources to get awareness and information out nationally and even internationally. Some of the source that the Irlen Institution use are television shows for example “National Geographic, 60 Minutes, Good Morning America, ABC World News, NBC News, the BBC and TV shows in Ireland, Hong Kong, Netherlands, New Zealand, South Korea, and Australia” (Media, 2018). Another thing to consider for increasing awareness of Irlen Syndrome and the Irlen Method would be to print out flyers and distribute them in different places, for example medical offices, public libraries, and school libraries. The effectiveness would be low/medium because there may be some people who will not believe that the use of color overlays will help them get better with reading.

Recommendation

For this section of the paper I will talk about each action option individually including what some of the limitations and some of the potential negative outcomes are. Following that, I will recommend the best option and why. The recommendation will be the call to action.

Action Option One, self diagnosis is a great starting point to identify if a student has Irlen Syndrome. There are a few limitations with self diagnosis. One limitation could be the lack of internet in some areas throughout the world. Another limitation is that the tests may not be one hundred percent accurate. After one completes the test, that person has to type in their email and then confirm their email to get the results. For example, a result could say something like “At risk for Irlen Syndrome. Formal assessment recommended.” Or another result would be, “Not likely to have Irlen Syndrome” (“Irlen Syndrome Short Self Test,” 2019). These results are based on how many “yes” questions you answered. These results may vary if someone chooses to do the longer self test. Some of the potential negative outcomes to this would be that the tests may or may not be one hundred percent reliable. In some cases it is possible for people to feel discouraged and not want to proceed.

For the second action option, professional diagnosis, would be the next step to getting properly diagnosed for Irlen Syndrome and to see if a student and other family members could benefit from the use of Irlen Method. Upon getting tested, people can also get a better idea about Irlen Syndrome and how the Irlen Method can work for them. Getting professional help from the institution is a good idea because they can provide the right equipment for the specific person whether it is the plastic color overlay sheets or the glasses that have the correct color lens that works best for that student.

Some of the biggest limitations for this action option includes the cost of getting the diagnosis done professionally. It can also cost a fair amount to get to one of these testing centers depending on where people are coming from. A positive part of getting professional diagnosis is that there are scholarships that are given to those in need. Some of the negative outcomes include high cost of money for the diagnosis, materials and travel time can discourage people from getting the help they need. Another limitation that could affect a person's ability to get tested would be the time aspect; some people may not have a lot of time to travel to get to a testing facility. This also includes that materials that one can use by choice. For the effectiveness aspect of action option two, once a person gets diagnosed with Irlen Syndrome and they have the materials, they need to use them. This could be difficult if the student

is getting bullied by others because they are different. So, another issue is due to people not using the materials as often as they should. As a result, the student who needs it will choose not to use the materials that can possibly change their life for the better. Some of the positive outcomes with the use of color overlay sheets or the glasses can increase a student's ability to do better academically. A student doesn't have to wear or use the sheets except for the use of reading which can increase a better economic aspect of that student to get a job.

The last action option is to increase awareness within schools and within families that have been affected by the Irlen Syndrome. There are many ways to increase awareness and the best method is by word of mouth, another great way is through listening and watching podcasts and videos, as well as other forms of reliable media sources (Media, 2018). There are some limitations to this action option. Some of the limitations include schools not willing to listen, potential people claiming that the method did not help them. Another reason this could be an issue is due to not using the materials as often as they should, meaning getting into a schedule and sticking with it. Another limitation could be a lack of internet, TV, and in some cases radios.

After analyzing all the action options the one I would recommend would be to increase awareness of how the Irlen Method can help many people. I recommend this because if more people are aware of how many people struggle with reading the more likely things will change for the better. My action that I did was placing flyers throughout CSUMB. I placed some flyers at the Student Disability Resource office I even placed some flyers at the Library, I gave the front desk at the University Center's Ballroom some flyers. I even placed flyers at the Marina Public library by Walmart. In conclusion, the themes that I emerged from my three interviews are as follows: Self-diagnosis, Professional Diagnosis, and lastly increase awareness. I discussed some of the limitations, potential negative outcomes and even some positive things that can happen from each potential action. After analyzing each theme I picked what I would like to recommend and why. Then I engaged in an action.

Action Documentation and Critical Reflection

The focus issue is how can you help struggling readers with the use of color overlays. To understand why students have issues with reading and what could be done to address the issues, I interviewed three different people. Two of the people I interviewed are a part of the Irlen Institute. These two people diagnose people with Irlen Syndrome, and they provide a way to make reading better (Refer to Table 1 in Results Section). The Irlen Method is the use of color overlay sheets and color overlay glasses. Also, one of the people I interviewed is also the founder of the Irlen Method. For my other interview, I interviewed someone who is Irlen Syndrome positive. After interviewing these people, the three emerging themes are Self- Diagnosis, Professional -Diagnosis and increasing awareness (Refer to Table 1 in Results Section. After thoroughly analyzing these three action options, the one I implemented was increasing awareness. I picked this option because if people can increase awareness of reading difficulties then things are more than likely to change for the better with this simple method with using color overlays (refer to Appendix B).

Throughout this project, there were a lot of things that I learned about what Irlen syndrome was and how it can affect people with reading difficulties. I even learned about a method that can work. This method is the Irlen Method which is the use of color overlays. Some examples of color overlays (see Appendix A- flyer) are pictured, along with some links for people to follow. For starters, I was fascinated with color screening from my mom considering she is the one that suggested it. I did not know the exact reason behind the color screening until I started to research my topic. Then it started to come together from there. I have also been struggling with reading ever since I was a kid. I had issues staying focused as I read, and my reading comprehension is poor. As a result, I have to slow way down and ask myself what this sentence or paragraph was about. I found it surprising for those people who have issues with reading whether they have a disability or not the Irlen Method can help make reading easier and more enjoyable in their daily lives and in schools. As I experimented on the Irlen.com official's website I can see better with a green background with black text. I even have a small green color overlay that I use periodically, and it does help with getting better a reading.

Throughout this paper and project, I realize I do better when I have a visual aid. I wrote out the proposal to the best of my knowledge, then I went into the literature synthesizing section and had a good grasp of things. But I was having a huge issue with getting the page limit because I found out that I started with a solution to a problem. So, after I submitted the rough draft I realized that I had to redo the

entire section. The biggest modification I need to change was to start with the problem, not the solution. Then once I figured out the problem, I went on in detail about how to make it the problem better. I even went back through the entire paper and edited and continued to edit it to make it stronger. I also did this in all the other sections that we had to do.

Another change or modification I did was, I originally was going to do interviews with five different people. I changed it to three because my mom was no't that great of a source and I never was able to get a hold of another person that I would have liked to interview. I am grateful I only choose three interviews because I had to transcribe each interview which was very hard to do. One of the great things that came out of my interviews was I got to interview the founder of the Irlen Method. I had great responses to all my interview questions.

Critical Reflection

The Liberal Studies MLOs have helped me get a better understanding of how to write academic papers in all my classes. For the MLOs of my choice I chose to go with MLO 1, MLO 3 and MLO 5. I chose each of these because they have helped me in the long run with getting a higher education and feeling successful or I would not be able to graduate This action project was a lot different than LS 300 Proseminar are class. In that class we had to do a critical analysis paper like we had to do for Senior Capstone, but they are both different. This project helped me be able to connect with personal things to make the paper stronger.

For my first MLO. I chose MLO 1 because this paper has helped make my writing better even though I have trouble with writing. I learned different skills to make a paper better. For my second MLO I chose MLO 3 because I used new forms of technologies that I have never used before. I have used PowerPoint but not for a poster. I have learned how to make and edit posters with great frustration at first but at the same time I liked the poster making because it was new, and this is something that even future educators can do and teach those students who learn better by a visual aid.

For my last MLO, I went with MLO 5 because throughout this project you must become an expert in the subject matter that you chose to write about. It does help if there is a personal aspect of the project that can help others connect with you and why you choose that topic. Also, if you use a personal experience it can make an argument or your work stronger as long as it doesn't override the whole paper or project. This project really opened my eyes to how many people struggle with reading which

everybody needs to have in order to even survive school but also their daily lives as well.

To further my professional development, I need more hands on with everything. I also need more classroom experiences, to see what works for other teachers and what does not work in a classroom setting. For a better classroom experience people should try to connect with people who have trouble reading and to see what works best for them and even include the Irlen Method. I plan on going to some training to be able to learn more about the Irlen Syndrome and to better help struggling students and adults with reading difficulties.

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Appendix A Flyer

Do you have issues with reading? If so, you might have Irlen Syndrome.

Irlen Syndrome definition: is a perceptual processing disorder. It is not an optical problem. It is a problem with the brain's ability to process visual information. This problem tends to run in families and is not currently identified by other standardized educational or medical tests.

Irlen Method definition: is the use of color overlays to help people who have trouble reading black text on a white background.



Short Irlen Self Test

Do you skip words or lines when reading?

- Yes
 No

Do you reread lines?

- Yes
 No

Do you lose your place?

- Yes
 No

Are you easily distracted when reading?

- Yes
 No



Main web page: <https://irlen.com/>

Test yourself: <https://irlen.com/get-tested/>

The Irlen Institute: <https://irlen.com/about-irlen-institute/>

Video about what is Irlen Syndrome and its causes:

<https://www.youtube.com/watch?v=f8e3bWByRSg&t=10s>