

Effects of Color Presentation on Community College Student Comprehension

An After-Only Experimental Design

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Psychology 211

Research Methods for the Behavioral Sciences

Northern Virginia Community College, Loudoun Campus

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Background-Purpose of the Study

- Help provide information to professors on how to help college students retain more information.
- Provide an insight to which color of font (black or blue) that students can recall the most information from the two stories.
- Help people understand the importance of comprehension when it comes to remembering information that is presented.
- Help the society move on from on using conventional methods of teaching that are not effective anymore, to more creative and innovative ones.



Background-Research Questions

► Major Research Question

Does the presentation of certain colors have an effect on learning comprehension on Community College students' methods of Comprehension?

► Minor Research Questions

- I. Do colors entice better student comprehension?
- II. What color preferences are there that can help students recall more information than others?
- III. What colors are good for digital presentations?
- IV. What are the different techniques that can aid better comprehension in students through color presentation?

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Background-Hypotheses

► Scientific Hypothesis

The presentation of information through bright colors help community college students remember and retain information better than dark colors.

► Null Hypothesis

There will be no association between learning and usage of bright colors rather than dark colors.



Background-Significance of the Study

- The results of this study will help professors analyze whether or not they should distance themselves from the conventional methods of teaching students, specifically using only black and white colors as an aid of presenting new information.
- Through this study teachers and professors could be advised to incorporate bright colors in their mode of teachings and presenting information, in order to help retain given material better.

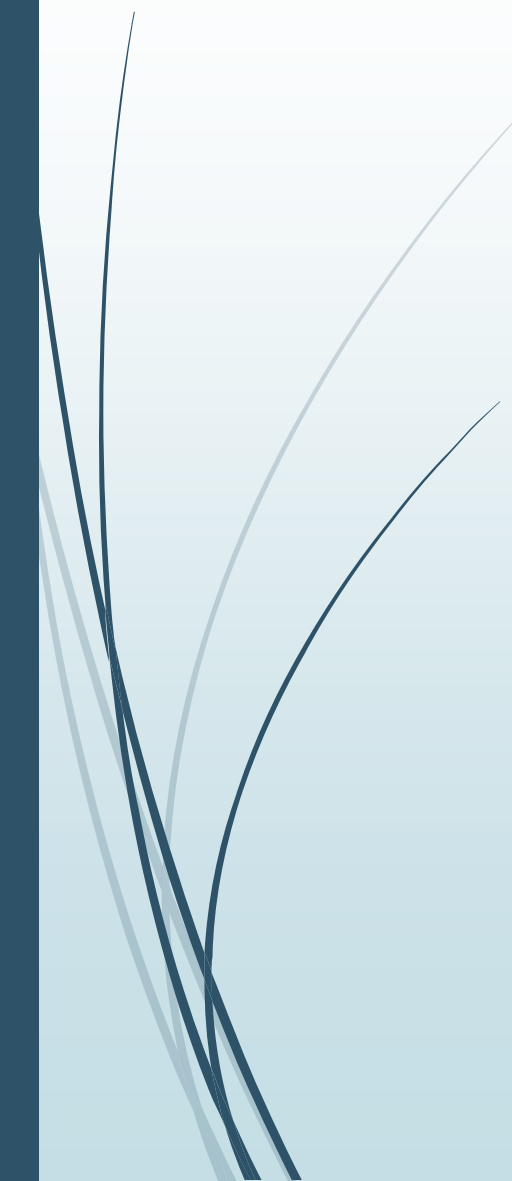
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Background-Theoretical Framework

- ▶ Specific color layout can not only help in absorbing information better, but in fact comprehending it in such a way that it can be grasped better by the students.
- ▶ There are various studies that have been conducted in the past that somewhat relate to the research conducted.
- ▶ Found out that preferred color presentation was color cued, especially during graphic presentation (Sabo and Hagen, 1973).



Background- Limitations

- ▶ Not enough time to use various methods
 - ▶ Number of participants being used
- 



Background- Delimitations

- ▶ The study will be limited to the Community College Students at Northern Virginia Community College, Loudoun Campus.
- ▶ The study will only look into the strategies adopted by teachers regarding color presentation rather than looking at both teachers as well as the students

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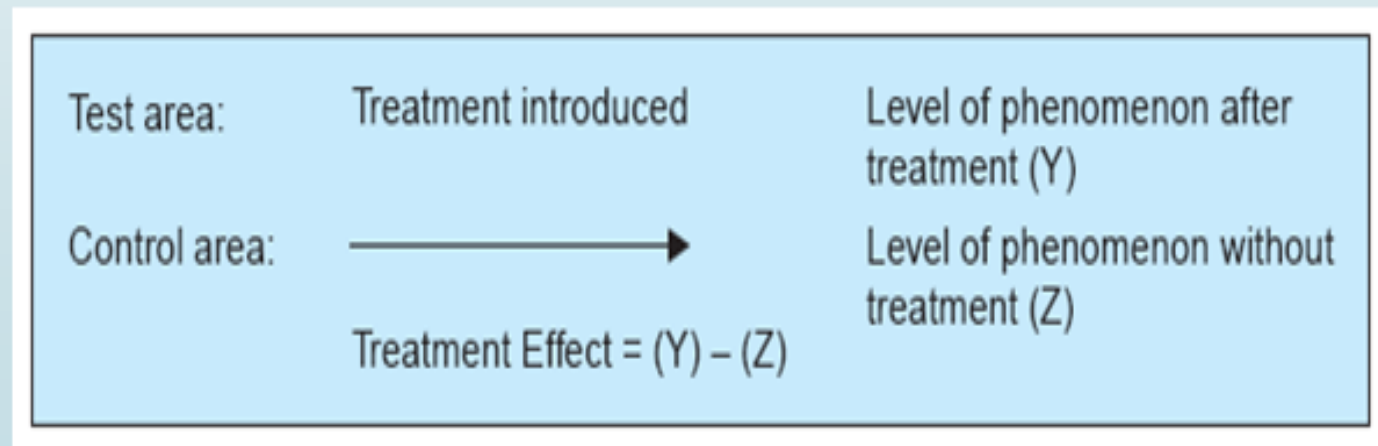
Literature Review

- Color Perception and theory
- Physiological and Psychological responses to Color
- Language and Color Perception

Methodology

► After- Only Experimental Design

The researcher manipulates the independent variable and then it is followed by a post measurement. Two groups are post measured, that is, control and experimental groups. The difference between the groups is mainly attributed to be the effect of independent variable.



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Sampling Design

- Sample design used for the experiment was simple randomized sampling
- The number of participants included in the two groups were:
 - i. Experimental Group: 15
 - ii. Control Group: 10

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Data Collection

- ▶ The instrumentation utilized for the *After-Only Experimental Design* included two passages.
- ▶ The first passage was written in blue font, whereas the second passage was written in black font.
- ▶ All the participants given a consent form to read and sign before being allowed to participate in the experiment.
- ▶ Data was then collected from each group by asking to them to recall the passage that was given to them and then comprehend on a blank paper.

Informed Consent

INFORMED CONSENT AND INSTRUCTIONS

Informed Consent:

The purpose of the current study being conducted is to explore the effects of color presentation on Community College student comprehension. The major research question that will be tried and answered through our research study is: "Do bright colors have an effect on Community College student comprehension?"

The current experimental study will be conducted in two parts. The first part will require the participant to read the passage typed in the colored font for about five to seven minutes, then recall the passage and write it down again on the blank page that is provided.

This second part of the experiment will require the same steps but the participant will be given a passage with black font, then will be asked to recall the passage and write it down again on the blank page that is provided. If you provide us with your email address, you can receive our finished project to see how the collected data was used.

By signing below, you are agreeing that you have read and understand the above statements:

Passage 1: Blue Font

The Difficult Journey

The wagon train departed bright and early this morning. I was disappointed that I had to tell my friends goodbye, but I had chosen to remain here in Denver. By that point, we had already been traveling for several long months. I was sorry to leave St. Louis, but I heard there was gold in California. It was June when we had first left St. Louis and it was October when we got to Denver. I had made the difficult decision that I would not be continuing onward with the rest of the families on the wagon train. When we left St. Louis, we were extremely excited, because we were planning on traveling all the way to the ocean. We would journey to California. But that was not to be for my family. Almost immediately, we stumbled upon the first major problem of our trip. Our very first day on the road, a wheel flew right off of our wagon. The wheel was badly cracked, which meant we were unable to repair the damage ourselves. Since we were not terribly far from St. Louis at that point, John rode all the way back there on his horse. He returned to the wagon train with a brand new wheel; however, that took nearly an entire day while the other families waited. After that, we struggled with yet another problem. There was an awful rainstorm, and with it came so much mud that the oxen pulling our wagons were unable to get the wagons moving again. We had to wait for the rain to stop completely and for the mud to dry before we could continue onward. Because of this, we lost an additional two days. We were unbelievably exhausted and it had been a mere two weeks, but we kept on traveling. Unfortunately, we then had to stop once more because the Brown family fell ill. We waited a few days for them to recover, but they eventually gave up and turned back. Every single day, we faced very difficult work, but we still persevered. Nevertheless, by the time we arrived in Denver it was just too much to handle. We had decided then that we were going to leave the wagon train. That night, we informed the wagon master of our plans. The wagon master asked us to change our minds, and told us, "We've overcome the worst, now." However, I knew our trip would certainly not be getting any easier. The mountains we had just crossed were only the beginning.

It had already been such hard work to get where we were now, and I knew it would be even more difficult to reach the ocean in California. That is when we decided the best option was to remain here in Denver. Today, I have gone off to hunt for a new job. There are several jobs in the mines, and I hope to fill one of the positions. Then, we will be able to get our own home. I am extremely thankful that living in a tent beside the covered wagon is over. Instead, we will have a permanent place where we can live. Although I will greatly miss my friends, I will not miss all the troubles and hardships we endured. I wrote a letter to a friend I made on the trip. I wanted him to know we are doing well although I miss him.

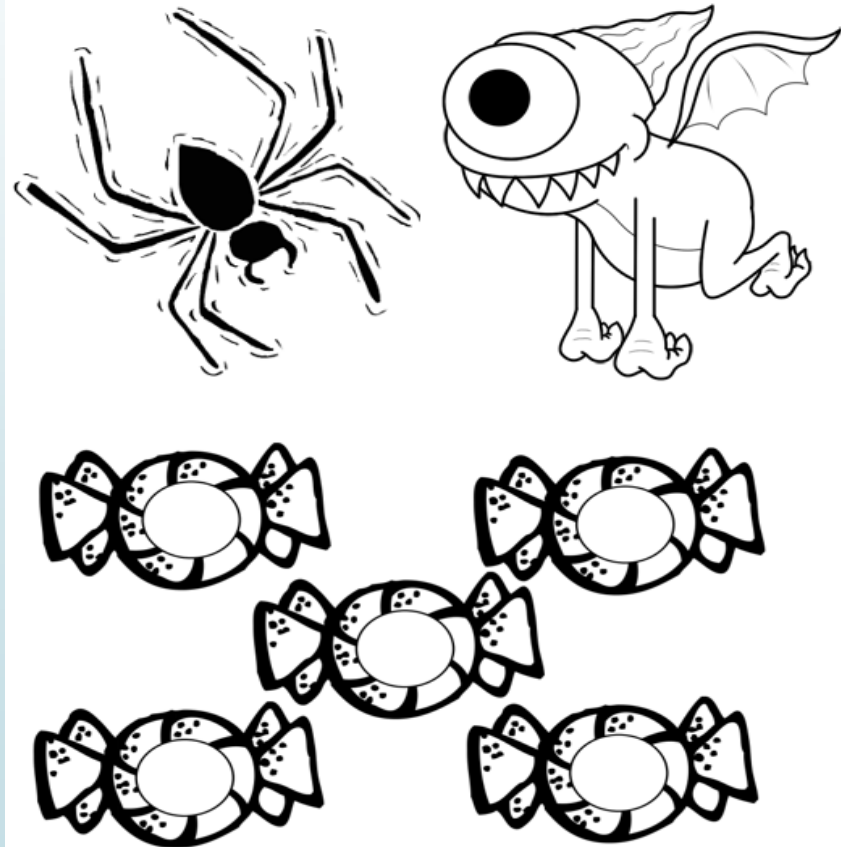


Passage 2: Black Font

The Candy Store

Once upon a time in a small country town there was a little girl named Emily, she is just an ordinary girl, but she has a secret, it all started 2 years ago when she was 8 one morning Emily was getting dressed in the usual red t-shirt with overalls and two pretty plaits, she was going out to play with her friends Sarah and Paige, when she found a small blue bag it was very heavy so she peered inside the bag it was filled with candy she ate a piece and it was the best candy she had ever tasted so she ran back home and hid it in her room, then when she was playing with her friends she was stronger and more courageous than that night she worked out that it was magic candy. So that's her secret she owns magic candy that day at school there was a big hairy spider on her desk she was scared so she pulled a piece of candy from her pocket and ate it she was not scared anymore so she picked the spider up and she put it outside her classroom on the grass. But one day she was in a fight with a boy at her school and she got punched and kicked so she reached into her pocket and shoved 5 pieces of candy in her mouth she instantly grew bigger and stronger and meaner her clothes ripped off her body as she grew and she was a big mean and scary giant everyone ran away from her she ran after them but she squashed all her friends and family Emily sat down and cried she cried all day but then she heard a voice calling her name 'Emily, Emily wake up you will be late for school' she woke up and she was her normal size and all her friends and family are still alive because it was all just a dream and then that day at school she got in a fight with a boy at school and she got punched and kicked she pulled out 5 pieces of candy and as she was about to shove them in her mouth she remembered her dream and how she was a big mean giant so she only ate one but then she popped another in her mouth for extra luck

when she realized that she had turned into a big mean giant only she wasn't big and tall she was just mean she tried to tell her friends that it was the candy but they didn't listen to her and she had no friends. Then one day there was a new kid at school who was also mean and had no friends so Emily became friends with him so they were mean together her mother didn't like who she had become but she was still pleased that Emily had found a friend so as long as Emily was happy her mother was happy.

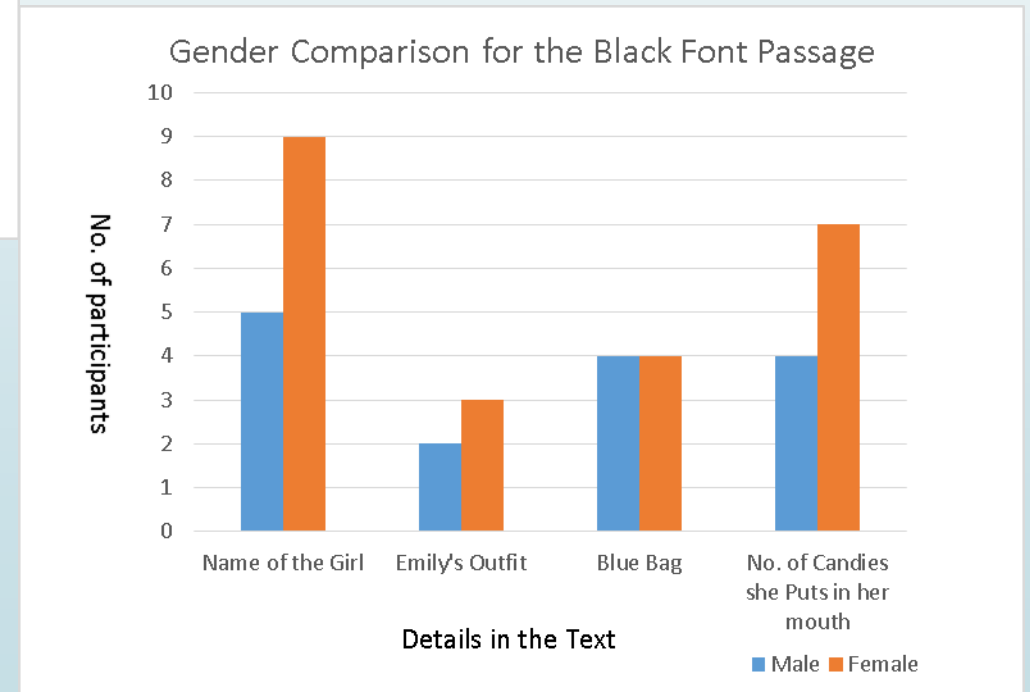
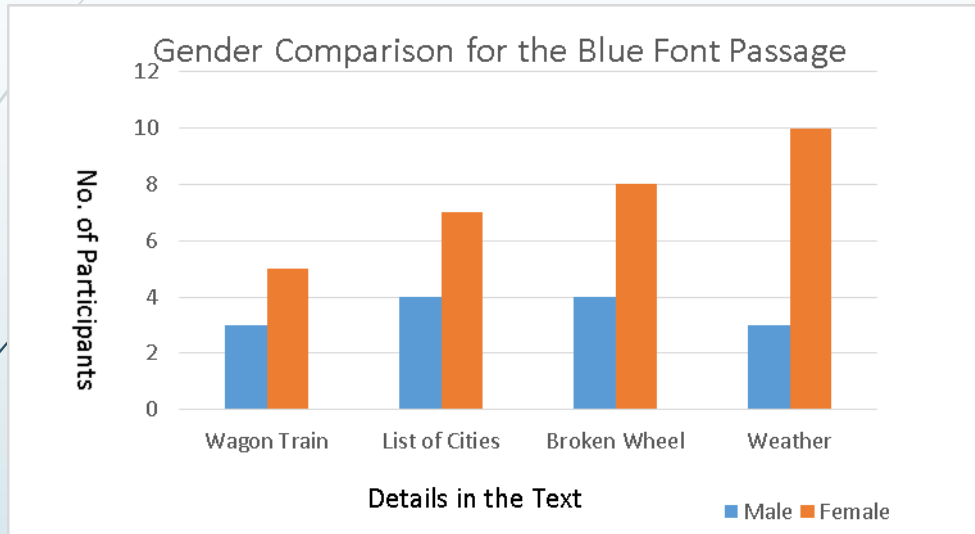


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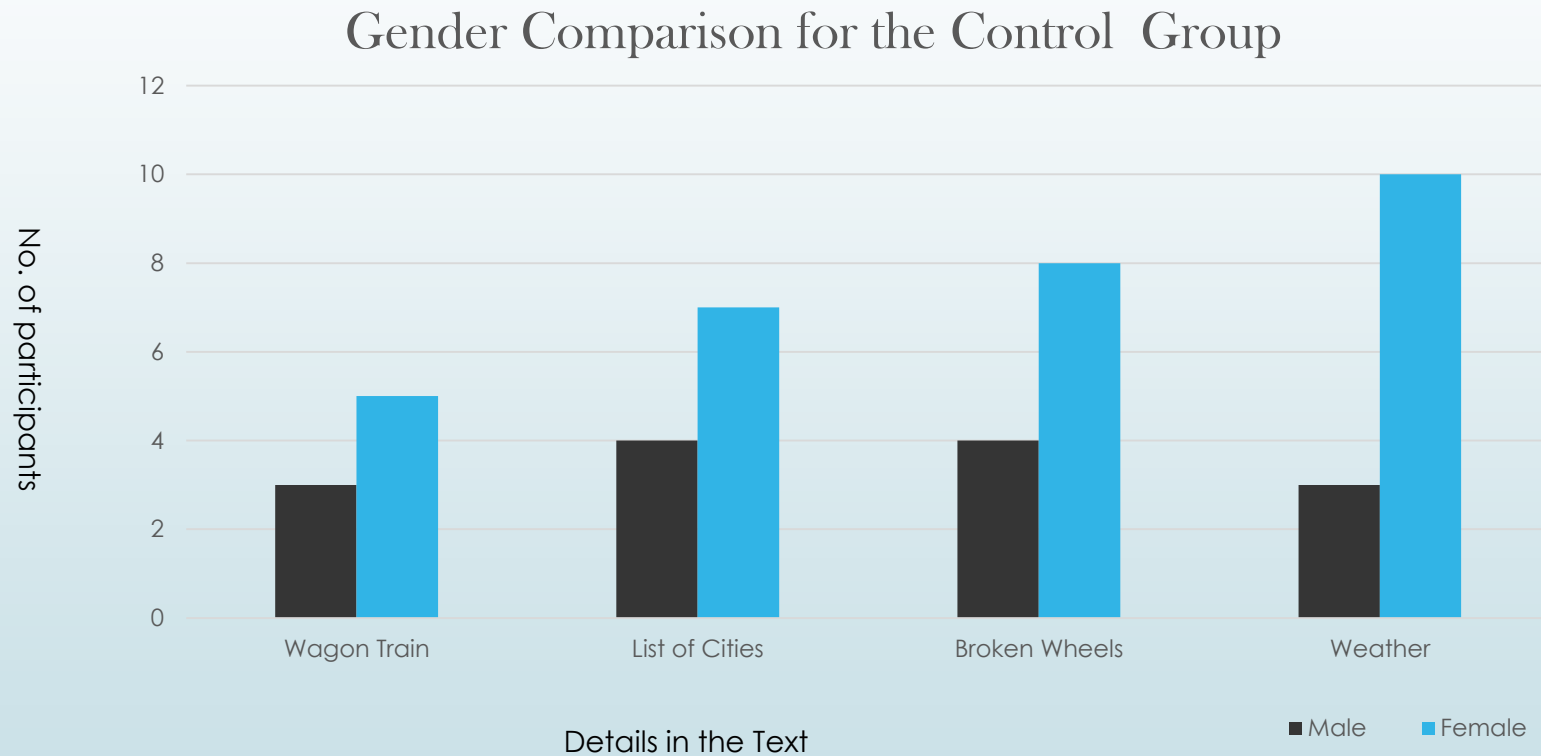
Data Analysis

- ▶ Four major details were selected from each of the two passages, and then compared to see how many participants got either some or all the details from the two passages.
- ▶ The details that were collected from the participants in the experimental group as well as the control group, were then noted down in form of tables in Excel sheet, while keeping in mind the gender differences as well.

Gender Differences in Experimental Group

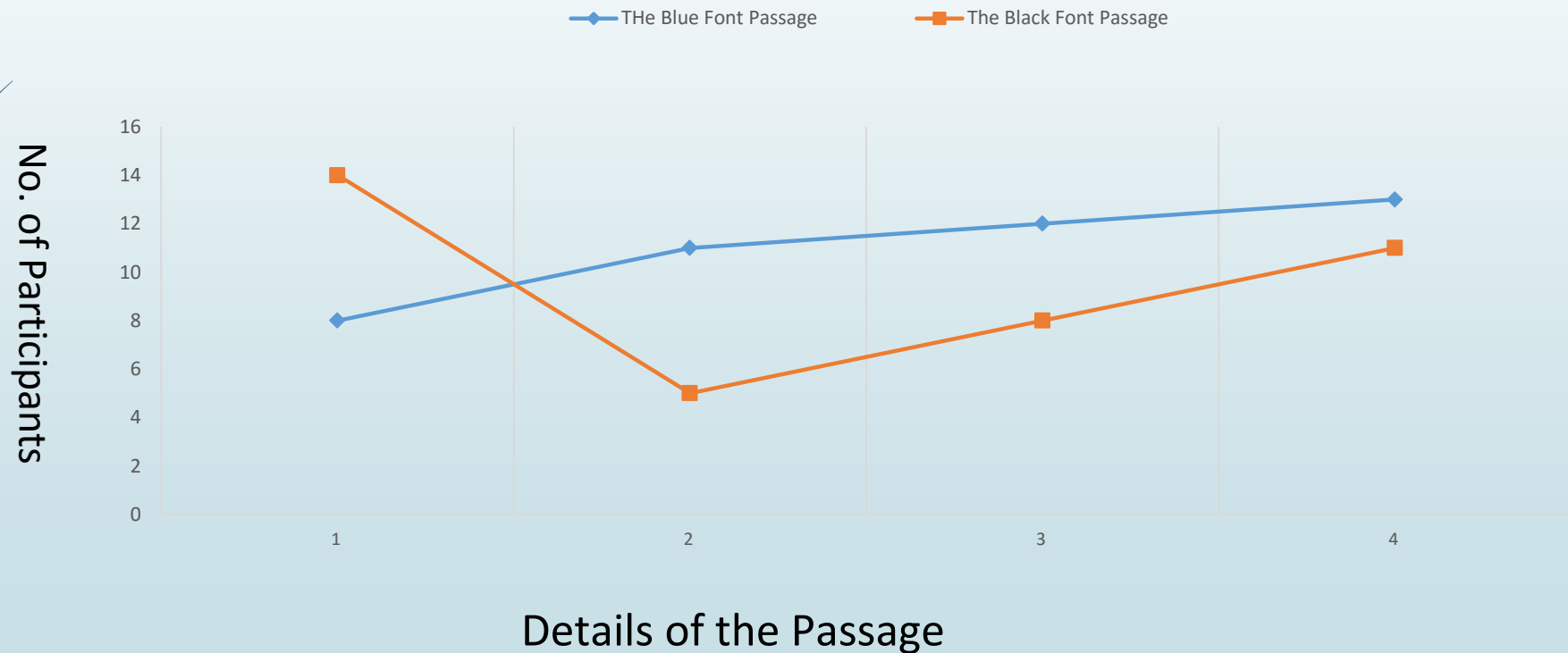


Gender Differences in Control Group



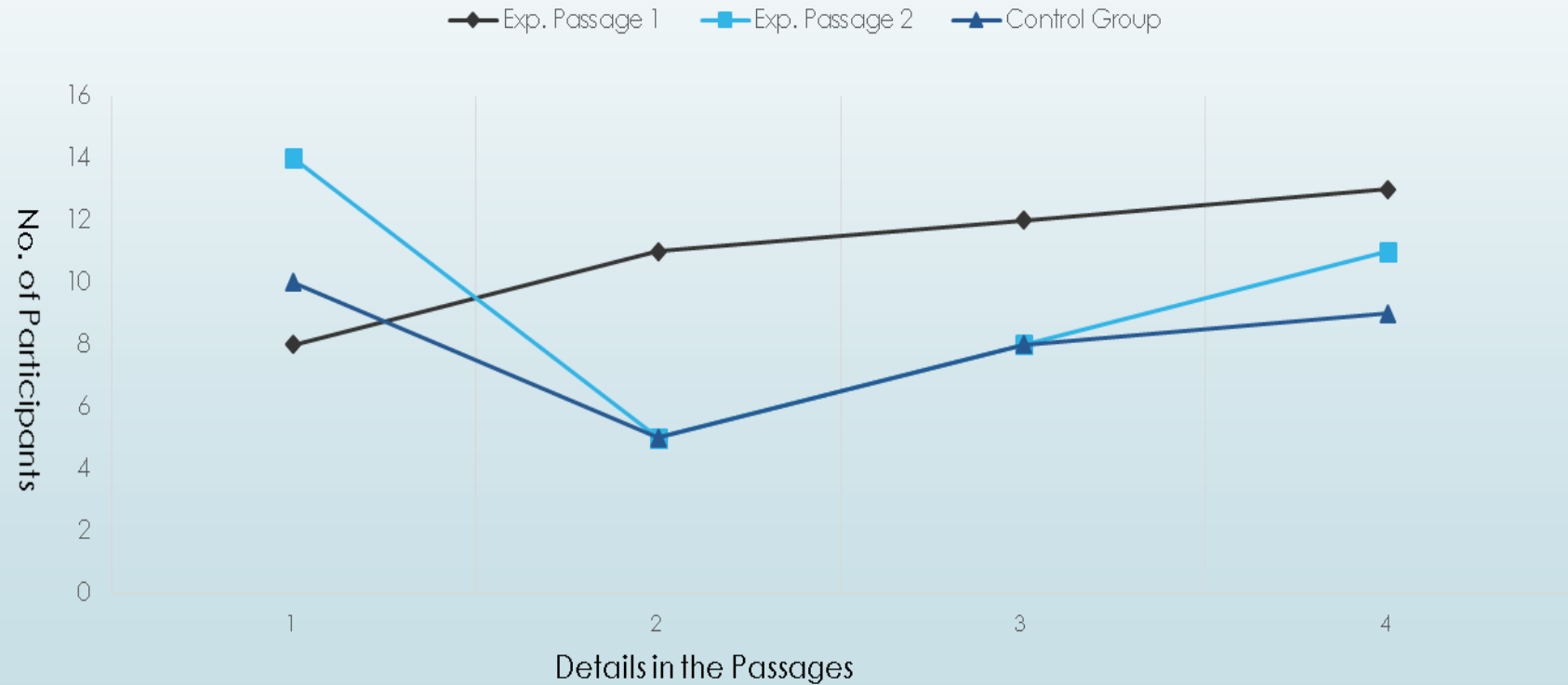
Comparison between the details of the two stories

COMPARISON BETWEEN THE PASSAGES



Comparison between the details of the Experimental Group and Control Group

COMPARISON BETWEEN THE TWO GROUPS



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Conclusion

- The scientific hypothesis of this study stated that “The presentation of information through bright colors help community college students remember and retain information better than dark colors.”
- A factor that was kept in mind was whether or not gender could play a role and effect the results of the experiment.
- The data obtained was successful in supporting the hypothesis and proving that female participants more effectively recalled details in both the groups than the male participants.

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Future Research

- ▶ Larger sample size
- ▶ More diverse sample should be selected
- ▶ Study should be conducted over a longer period of time

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