



THE USE OF CASE STUDY STYLE QUESTIONS AS A MEANS OF IMPROVING ACADEMIC ACHIEVEMENT AND ATTITUDE



Christopher Collins
R.L. Patton High School
Morganton, NC

BACKGROUND

I teach at R.L. Patton High School in Morganton, North Carolina. Morganton is a small town of 16,807 residents with a per capita income of \$18,830, leaving 14% of the population living below the poverty line. Patton High School is one of four high schools in Burke County, serving about 1,000 students.

Students at Patton High struggle with understanding the application of science content learned in the classroom to real-world scenarios, ultimately resulting in a poor retention of concepts. For my research I used short case study style questions as a daily treatment to improve academic achievement, student attitude towards science, and the familiarity with real world applications of science content.

METHODOLOGY

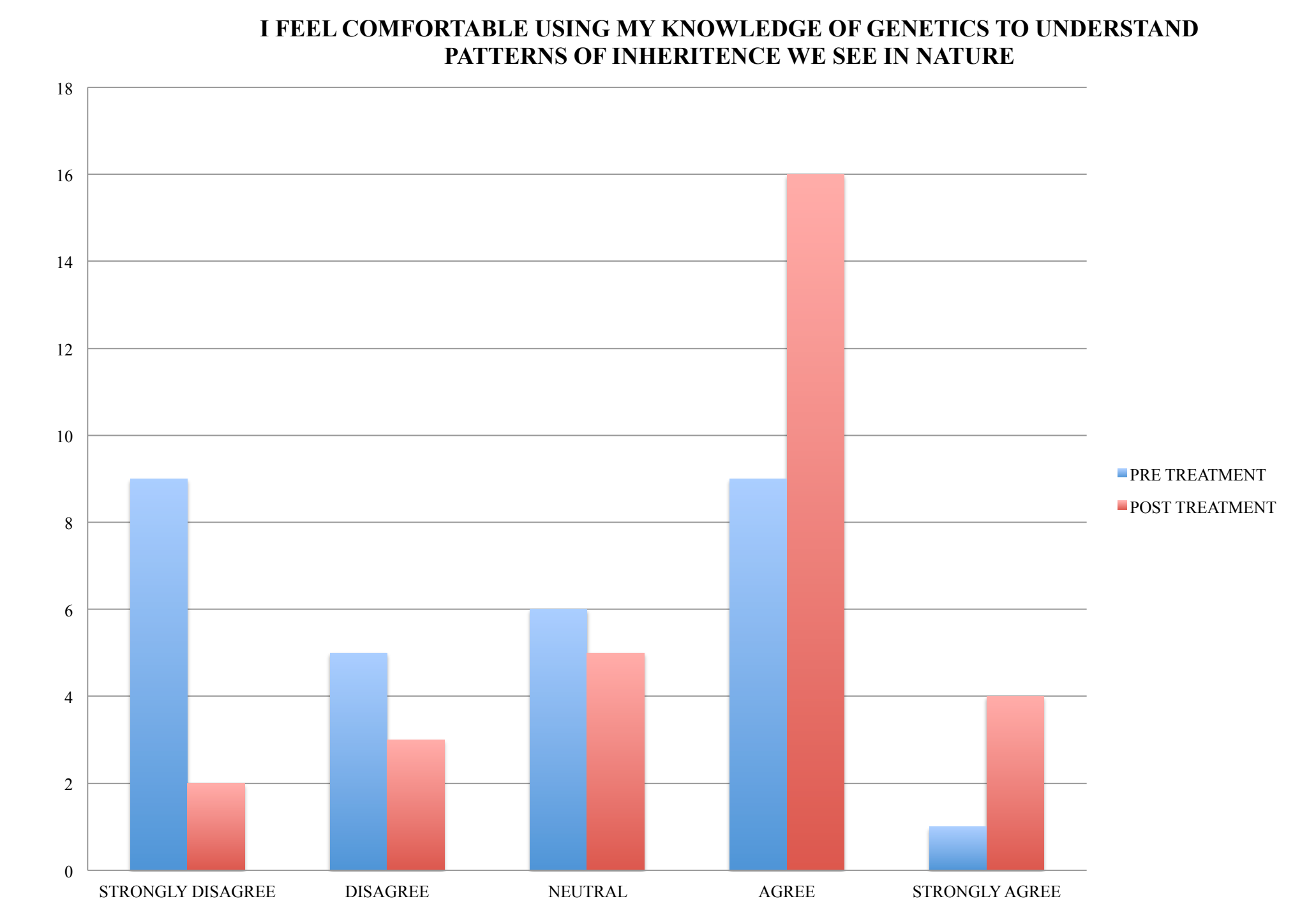
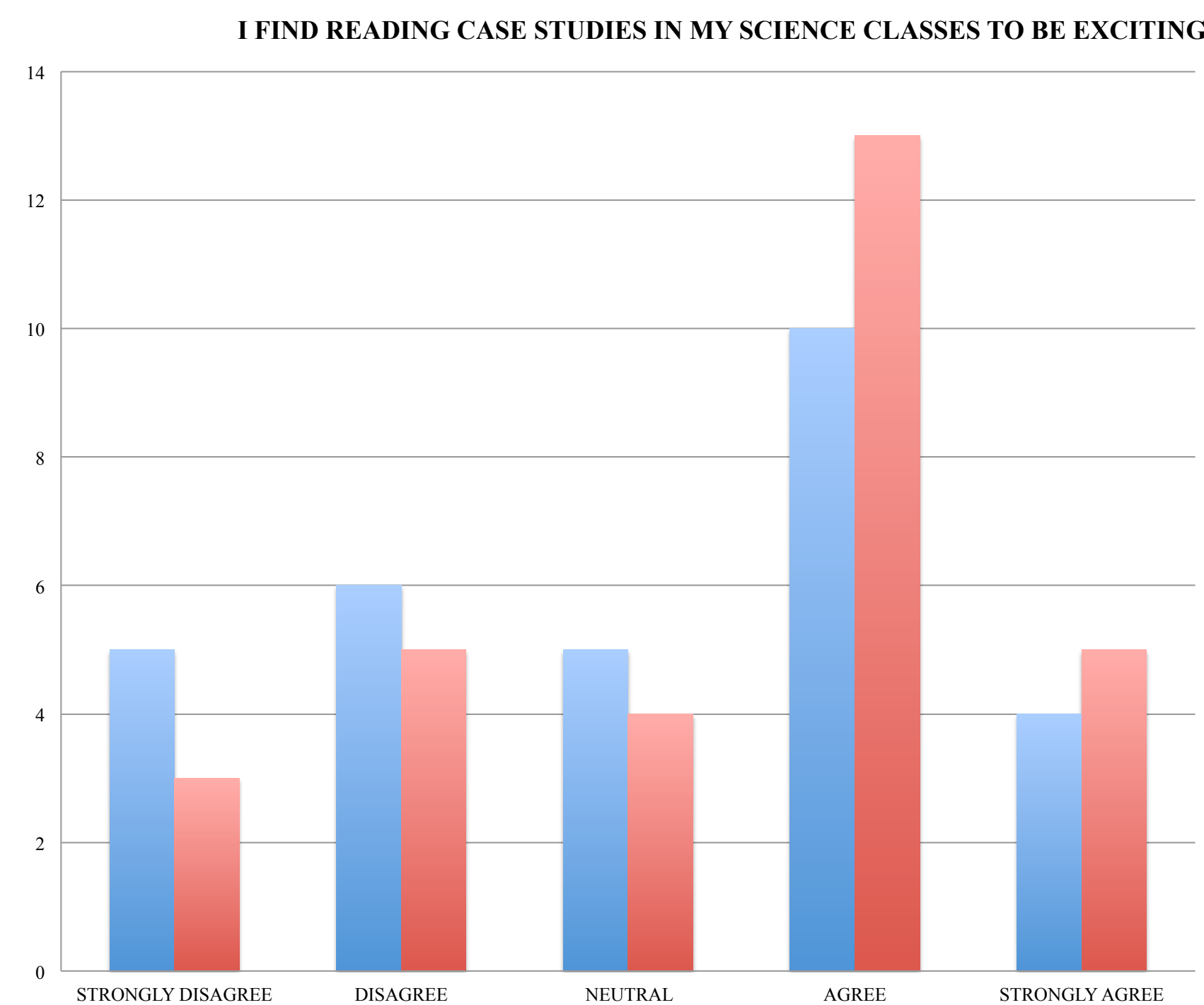
The intervention used content relevant case study style questions as a daily warm up activity for the experimental section for the duration of a unit on Genetics. The case study style questions focused on the various patterns of inheritance discussed in the unit requiring students to identify significant information, assign alleles, construct and perform a successful cross, and interpret the results.

The treatment's success was measured by comparing one section of Biology that would receive the treatment with a section that did not during the duration of the Fall semester of 2016. Data was collected using pre and post treatment assessments, observations, attitude surveys, and interviews.

FOCUS QUESTIONS

FOCUS QUESTIONS	COLLECTION INSTRUMENTS		
DO CASE STUDIES INCREASE ACADEMIC ACHIEVEMENT?	MULTIPLE CHOICE PRE/POST TREATMENT TEST	TIME SPENT ON TESTS AND CASE STUDY TREATMENTS	OBSERVATIONS DURING THE CASE STUDY TREATMENT
DO CASE STUDIES INCREASE OR IMPROVE STUDENT ATTITUDE?	PRE/POST TREATMENT SURVEYS	OBSERVATIONS DURING TREATMENTS	EXIT INTERVIEWS
DO CASE STUDIES HELP STUDENTS CONNECT CONTENT TO THE REAL WORLD?	PRE/POST TREATMENT SURVEYS	OBSERVATIONS DURING TREATMENTS	EXIT INTERVIEWS

DATA



CONCLUSION

According to the averages and normalized gains no major claims could be made about the effectiveness of case studies as a means of increasing academic achievement. However, when you consider the survey and interview responses one cannot simply ignore the increase in confidence towards case studies, genetics, and science. Student responses such as, "I think it is really cool that we can look at our grandparents and family to determine what our kids might look like. I showed my parents our work from class and taught them about it.", clearly demonstrates student confidence and real world application skills with the student sharing and teaching the skills to others.