

# Chromebooks as Learning Tools in the Science Classroom



Lenora Bostic  
 River Valley High School - Bidwell, Ohio - July 2017

## Background

- One to One Chromebook program announced Spring 2015
- Teachers received training and devices Summer 2015
- Seniors only 2015-2016 school year
- District wide implementation 2016-2017 school year
- High school students received individual devices

## Research Questions

How will a One to One Chromebook program impact student learning, skills and attitudes towards school and science?

- How can implementing a flipped class using Google Classroom in Science course improve Science learning?
- How will student adherence to due dates be effected when assignments are submitted digitally vs. on paper?
- How will using Google Classroom and applications for assignments impact the teacher's ability to provide adequate feedback on assignments?
- How often will using the Chromebooks in class provide a distraction from learning, if students also have access to the internet during class?

## Sample

Students at RVHS in 9<sup>th</sup> -12<sup>th</sup> grades including:

- Surveys: >200 RVHS students
- Treatment: 48 Chemistry students
- Observations: 48 students
- Interviews: 6 students

## Treatment

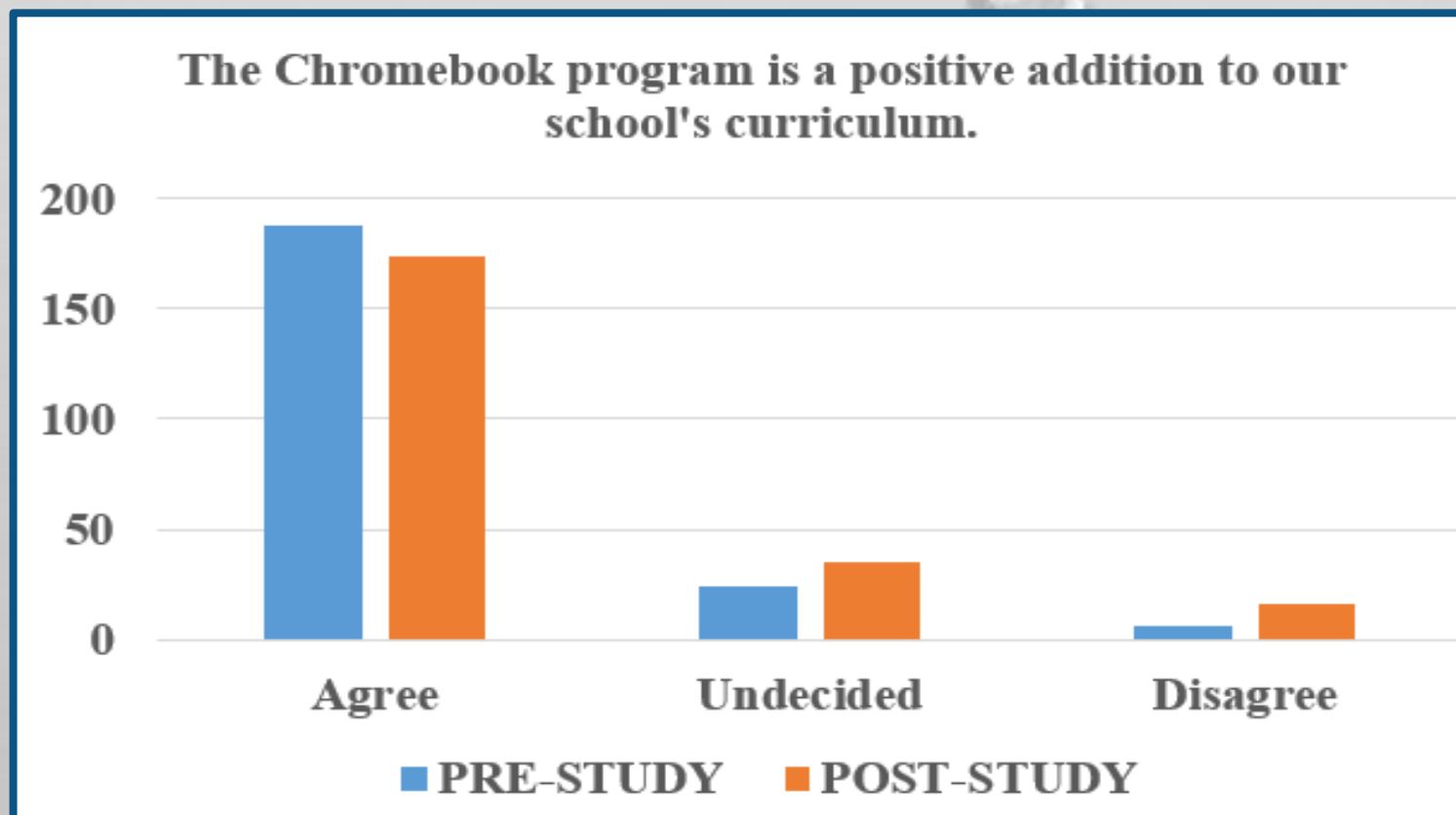
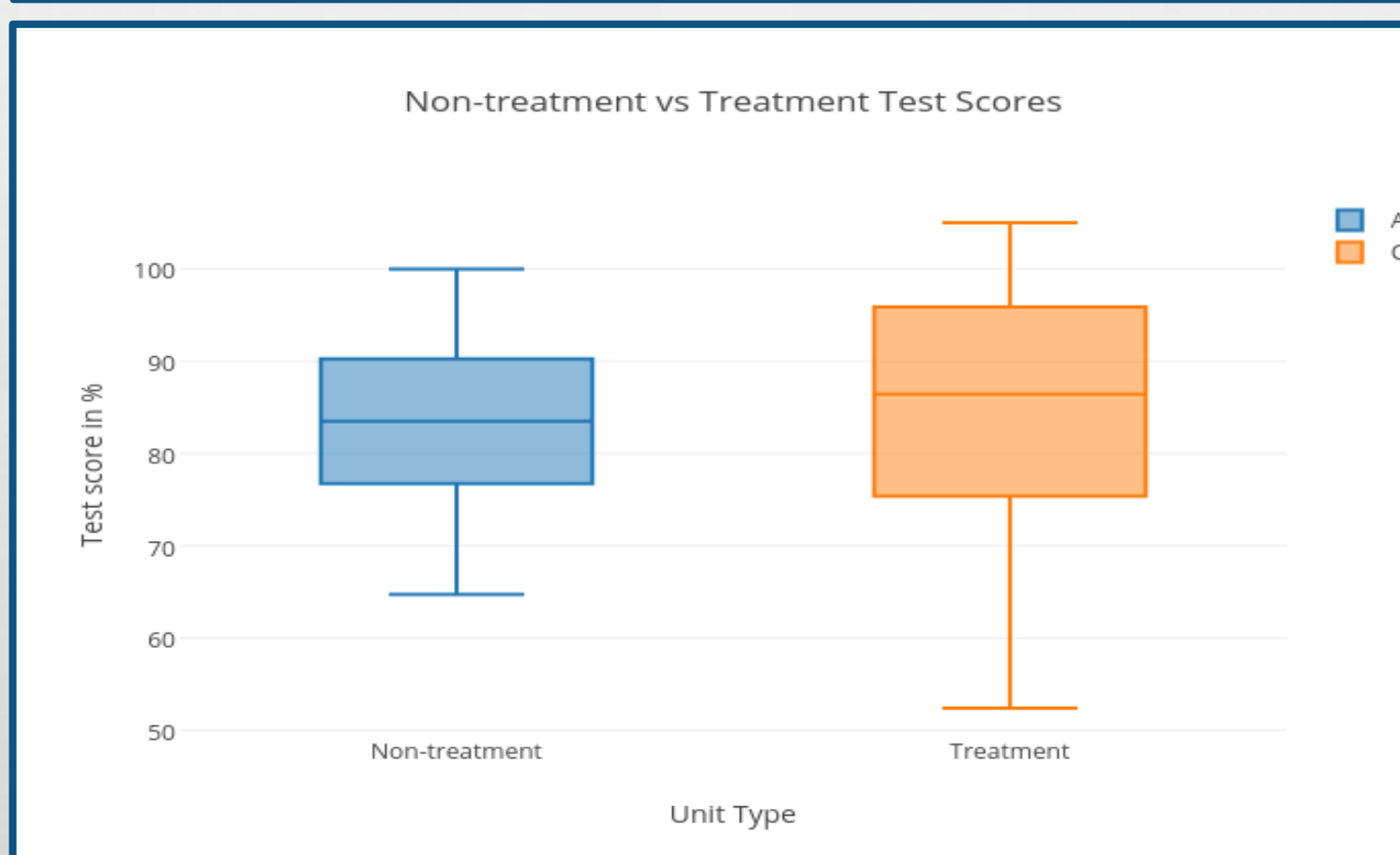
48 students were taught a chemistry unit traditionally, then taught a second unit using the flipped classroom technique. Test scores were statistically analyzed for effectiveness.

## Methodologies

Mixed method action research including:

- Treatment/Non-treatment groups
- Surveys
- Interviews
- Data Analysis
- Observations

## Data Analysis



## Conclusion

The study showed mixed results such as:

- Overall positive response from students
- Minimal learning gains in treatment group
- Decreased submission of assignments by due dates
- Minimal to moderate distraction levels
- Increased teacher satisfaction with changed processes

## Implications to Teaching

Plans to change teaching format to

- Flipped classroom lessons
- Digital submission of homework assignments
- Digital assignment feedback



[Photos of RVHS 2017 Chemistry Students. (2017). Lori Bostic, Personal Archives, Thurman, OH.]