Chromebooks as Learning Tools in the Science Classroom

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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 9th -12th 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

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

Conclusion

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Implications to Teaching

Plans to change teaching format to
• Flipped classroom lessons
• Digital submission of homework assignments
• Digital assignment feedback

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