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Background

Agora Cyber Charter School is a virtual public charter school that offers K-12 education for students across Pennsylvania. At Agora, students must attend live-instruction online classes offered by certified instructors on a daily basis. One of the greatest concerns about this model is how exactly the students are engaging with the information provided in the lesson. This is important as the literature has generally shown that students should have higher academic achievement when they take notes.¹



Study Group

The focus students for this study attended Agora's Learning Center in Philadelphia. The students attend the Learning Center for extra, in-person support. Students selected were in 6th to 8th grade. While not part of criteria for selection, the majority of the group was consider in need of math support by the intervention department. All 13 students involved were African American; seven female and six male.

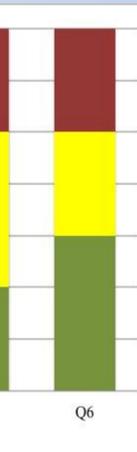
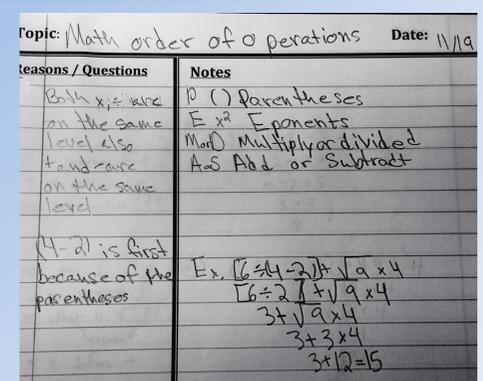
Data Collection

Table 1
Data Triangulation Matrix

Focus Questions	Data Source 1	Data Source 2	Data Source 3
1. What are the effects of a structured note-taking strategy on a cyber student's math performance?	STAR Math Assessment Percentile Rank and Scaled Scores (from November to January)	STAR Math Student Growth Percentile	Student Math report card grades in Quarter 1 and Quarter 2
2. What are the effects of a structured note-taking strategy on a cyber student's perception of note-taking?	Comparison between Learning Center Math Survey (pre) and Post Treatment Google Survey	Post-Treatment Student Interviews (based on survey questions)	Researcher observations throughout treatment period

Treatment / Design

The treatment occurred over six weeks during the second quarter of 2015-2016 school year. This involved two formal in-person workshops that modeled an adapted Cornell Note strategy for virtual classes. Beyond the initial workshops, the Learning Center staff followed up with students each week of the treatment period to check that students continued to utilize the strategy and supported student note-taking when necessary.



Results

Student math performance after completion of the treatment showed little to no significant change especially when compared to non-treatment students. Meanwhile, student perceptions of note-taking showed growth based on student survey responses.

Conclusion and Reflection

Although the focus on Cornell Notes did not effect student math performance, the workshops seemed to have had a positive affect on student perception on note-taking in their virtual math classes. As a result of this research, future note-taking workshops will be considered in upcoming school years at Agora and my continuing work in education at different schools.

Figure 1. Frequency of Individual Changes of Agreement in Survey Responses (N=7)

¹Titsworth, B.S. (2001). The effects of teacher immediacy, use of organizational lecture cues, and students' notetaking on cognitive learning. *Communication Education*. 50(4), 283-297. doi 10.1080/03634520109379256