

## Revised Abstract for 2019 SREE Conference

### Integrating Writing and Technology in the Classroom: Lessons from New York City By Emma Alterman, Rekha Balu, and Zeest Haider

#### **Background/Context:**

This paper examines an initiative to integrate writing instruction and technology into a single intervention designed to improve student writing. Some writing interventions provide resources or coaching to teachers on writing instruction and revision, or about how to differentiate assignments for different skill levels (De La Paz And Graham, 2002; Graham and Perin, 2007). Some technology initiatives push tools into the classroom, but without connection to specific content or support (Mishra and Koelher, 2006; Harris, et. al., 2009; Hutchison and Reinking, 2011). Few interventions and little research focus on integration of technology, content and writing, and whether such integration improves teacher instruction and student writing.

This contributes to a growing literature about how technology can improve writing instruction, and what coaching is needed to help teachers integrate more tools into packed lesson plans and overloaded class schedules.

#### **Purpose/Objective/Research Question:**

This study's main question asks: What is the impact of coaching teachers to use digital writing and revision tools on program students' writing ability, as measured by a writing assessment, at the end of one year, compared to control students? The implementation study examined whether and how teachers distributed assignments via Google Classroom and comments via Google Docs, how professional development and coaching was differentiated across teachers, and whether and how teacher use of technology and data tools increased throughout the year. The study team also assessed differences between study groups in the amount of professional development and support that teachers received on technology, writing, and data, and how the type and amount of writing instruction and technology use differed.

#### **Setting:**

This intervention took place in New York City high schools within the New Visions for Public Schools support network, which offers public schools services such as professional development, data infrastructure, and leadership training. The intervention targets ninth grade Global History students, who are scheduled to take the Global History Regents exam at the end of the tenth grade.

#### **Population/Participants/Subjects:**

The study looks at a sample of 23 New Visions-affiliated schools, half of which were assigned to the program; the other half conducted business as usual. The analytic sample is comparable at baseline on student background characteristics.

#### **Intervention/Program/Practice:**

The program's theory of change is to offer teachers professional development to help create a regular feedback and revision cycle on writing assignments that ultimately improves student

writing. To provide constructive feedback, subject teachers needed professional development and coaching to incorporate writing pedagogy and introduce technology (the free Google suite of tools, specifically) to streamline workflows, have more timely and frequent student interactions, and review data on student progress.

New Visions developed the initiative, Drive to Write, for teachers of Global History and deployed coaches to work with teachers to design lessons, differentiate assignments, and provide feedback to students-- all based on reviewing student assignment data to identify student skill gaps.

### **Research Design:**

This impact evaluation is a school-level blocked randomized control trial. The schools were divided into four blocks, defined by past student achievement on the Global History Regents exam. There are 1,542 students in the sample nested within schools.

The implementation study includes fidelity measures for all program schools, including assignment distribution and G Suite usage data. Study teachers and students at all 23 schools in the sample were invited to participate in surveys. A randomly selected subset of four program and four comparison schools (one from each block and study arm, respectively) were chosen for visits with teacher interviews and classroom observations.

### **Data Collection and Analysis:**

The intervention includes four writing assignments for which teachers were asked to administer online, provide digital feedback, and grade students using a standardized rubric. The study used this data to measure whether assignments were distributed digitally, whether the amount of teacher feedback through online comments to students increased from the beginning to the end of the year, and whether the writing skills assessed using the rubric progressed from the beginning to the end of the year.

To capture the continuous improvement throughout the year, the research team attended all monthly professional development sessions throughout the year and observed selected coaching sessions in the spring. The study team analyzed short surveys administered at the start and end of each professional development session and logs filled out by the coaches after each coaching session.

For treatment contrast, teacher and student surveys were administered online at all schools in both fall and spring to capture change in practice and feelings of self-efficacy. School visits to program schools uncovered facilitators and barriers to writing instruction in history classes.

For the impact analysis, all students in the sample completed a baseline writing assignment at the start of the school year, modeled after a writing prompt from a previous Global History Regents exam and graded by non-study teachers in the New Visions network using the 2017 Regents writing rubric. The assessment was administered by New Visions staff in the students' Global History classrooms in September 2017. The outcome measure is student scores on the end-of-year assessment taken in June 2018 and that used a similar format as the baseline assessment.

**Findings/Results:**

The program rolled out as intended throughout the 2017-18 school year. Coaches tailored their feedback for teachers and helped them focus on writing instruction by using technology to support workflow and data to guide their approach to individual students. Overall, teachers' adoption of and satisfaction with the tools and support provided by Drive to Write was high.

Practices related to writing and technology use among the 15 program teachers in the 11 Drive to Write schools were similar to those of the 17 teachers in 12 comparison schools. Teachers in program schools, however, exhibited greater understanding of and proficiency with higher-level writing instruction.

After one academic year of implementation, it is unclear whether the program had an effect too small to detect with the available sample of schools, or whether there is not yet any effect on student writing. The paper includes hypotheses for why this may be the case and suggestions for future work.

**Conclusions:**

Combining new practices in writing pedagogy, data use, and technology -- all while teaching content -- is challenging for teachers to master in one school year. While both program and comparison teachers focused on writing and used technology and data to support their practices, program teachers reported the professional development and coaching allowed them to integrate and implement them in a cohesive, systematic way. Policymakers and district leaders may need to consider the kinds of staffing and support necessary to implement a multi-faceted intervention, and over what duration, in order to see an impact.

## REFERENCES

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