Abstract Title Page

Title:

Improving the Quality of and Access to Federally Funded, Digital Out of School Time Tutoring

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Abstract Body

Background / Context:

Under the No Child Left Behind Act of 2002 (NCLB), third party vendors contract with districts and receive public, Title I money to provide out of school time (OST) tutoring to low income students. Since 2009, our research team has partnered with six urban school districts to evaluate the implementation and impact of these federally-funded OST programs on student reading and math achievement. In this paper, we specifically focus on mapping the nature of digital tutoring and examining its impact on student outcomes.

There is considerable variation in how digital OST tutoring providers describe what they do, the actual services they offer, how students access these services, and what is delivered. Yet, there is little evidence to date that digital providers are increasing the quality of OST tutoring or helping historically disadvantaged students to gain ground academically. A report to the WT Grant Foundation by Pam Stevens (2012) recently conveyed that end-users of afterschool research have found the research output in this area lacking in rigor compared to other bodies of study on youth interventions, and the dearth of reliable research that specifically examines digital tutoring effectiveness in the OST context is particularly striking. Therefore, our research draws upon the emerging research base on quality digital instruction (e.g. Cavanaugh, 2004; Means, 2010; Zhao et al, 2005) and digital schooling in the context of underserved students (e.g. Goslee & Conte, 1998), as well as the considerable research base identifying factors that contribute to high-quality OST tutoring in general (Beckett et al., 2009; Elbaum et al., 2000; Farkas & Durham, 2006; Lauer et al., 2006; Little et al., 2008; Vandell et al., 2007).

Purpose / Objective / Research Question / Focus of Study:

This paper will build on our mixed method longitudinal study of OST tutoring to bring intensified focus to the use of online or digital forms of tutoring. To this end, we structure our examination around following core research questions:

1. What are the key characteristics of different program models in digital OST tutoring, and how do they compare or contrast with tutoring implemented without digital tools?
2. What are the impacts of OST tutoring interventions on student reading and mathematics achievement, and what attributes of digital and non-digital programs (and their implementation by providers and management by districts) drive the observed effects?

A "digital" tutoring provider is one that uses a digital platform (software or live tutor via a technological platform, such as a computer, netbook, or handheld device) as an intentional, integral, and consistent part of its instructional delivery strategy. Digital tutoring has become an important component of the private tutoring industry, driven in large part by advances in technology that allow it to compete with features of face-to-face tutoring and offer the promise of scale and low cost implementation. Indeed, digital providers are gaining market share in OST tutoring programs at a faster rate than other providers. In one of our study sites, online tutoring companies reached a student "market share" as high as 88 percent in one year, and in another district, we have observed a single digital provider delivering tutoring to more than 14,000 students. NCLB mandated unfettered choice in tutoring providers and accordingly gave

providers the flexibility to try varied formats for tutoring. However, the implementation and effects of the wide range of approaches and formats that are emerging in digital tutoring are especially difficult for school districts to monitor and assess. We will draw upon our working index for categorizing models of digital tutoring, linking the rich descriptive data on specific digital program characteristics to a range of program outcomes, such as student engagement, content coverage and mastery, and student retention. We will then quantify these data and use them in (large sample size) empirical analyses of digital tutoring effects on student achievement.

Setting:

Both quantitative and qualitative research settings include six urban school districts: Chicago, Milwaukee and Minneapolis Public Schools, Austin and Dallas Independent School District and Los Angeles Unified School District.

Population / Participants / Subjects:

Our quantitative analysis examines student outcomes and participation trends of eligible and enrolled students, with an estimated total sample size (across districts) of 570,000 students. Beyond the baseline criteria of students' eligibility for free and reduced lunch, districts determine additional eligibility criteria, which often includes proficiency levels on standardized assessments. There are 180 providers in the quantitative sample, approximately a quarter of which are "digital providers". Our qualitative sample of five digital providers represents subcategories of digital providers, including: synchronous, asynchronous, all digital and blended. The qualitative sample also includes both local and national providers operating in our sample districts in our study, and in some cases, many other districts across the country.

Intervention / Program / Practice:

School districts across the country are spending millions of Title I dollars on tutoring for economically and academically disadvantaged students. Currently under NCLB, public schools that do not make adequate yearly progress for three consecutive years are required to offer children in low-income families the opportunity to receive extra academic assistance through free, out of school time (OST) tutoring, or "Supplemental Educational Services" (SES). As of the 2012-13 school year, newly-granted federal waivers are allowing two-thirds of the states to opt out of core tenets of NCLB, including SES. Many school districts are continuing to offer extended learning opportunities in the form of OST tutoring interventions to students most in need and/or to launch new or modified interventions. Digital tutoring programs are playing a major role in both the original SES context, as well as post-waiver, district-structured OST programs.

Research Design:

Our longitudinal, mixed-method design integrates rigorous, quasi-experimental analysis of OST tutoring program impacts on student achievement with an in-depth, comprehensive examination of the intervention—provider instructional practice in different program models and settings, the nature and quality of tutoring provided and district-level program administration—in and across

six large, urban school districts. Our analytic process is part of our fully integrated mixed-method research design where the quantitative and qualitative teams coordinate and collaborate at all stages of the study (design, collection, analysis, and dissemination). Specifically, the qualitative and quantitative teams meet to review analytical findings from both study components, direct additional data collection, refine analysis plans, and prepare dissemination of findings to stakeholders.

Data Collection and Analysis:

Our analytic process is part of our fully integrated mixed-method research design where the quantitative and qualitative teams coordinate and collaborate at all stages of the study (design, collection, analysis, and dissemination). Specifically, the qualitative and quantitative teams meet monthly to review analytical findings from both study components, direct additional data collection, refine analysis plans, and prepare dissemination of findings to stakeholders.

The qualitative data are drawn from observations of full tutoring sessions using a standardized instrument developed to capture OST tutoring in practice, including those elements of instruction specific to the digital context. In addition to observations, qualitative data sources include personal interviews with district staff, provider administrators and tutoring staff, focus groups with parents of eligible students, and curriculum analysis. We developed and use common protocols, by role group, and in our observation of tutoring sessions. We use a constant comparative method (both within and across method) to develop and refine our understanding of patterns and dissimilarities in tutoring practices across providers.

Quantitative analysis relies on three econometric strategies in estimating digital and non-digital OST tutoring effects (to address research question #2) include: 1) value-added modeling (following Zimmer et al., 2007 and Heinrich & Nisar, forthcoming), 2) fixed effects models (student and school fixed effects), and 3) generalized propensity score matching methods. Our two comparison groups will consist of students eligible for OST tutoring in each district who: (1) do not receive tutoring, or (2) receive non-digital tutoring services. Our application of multiple quasi-experimental strategies enables us to test the sensitivity of our results to alternative assumptions about student selection into tutoring programs and their selection into different types of providers (e.g., digital or non-digital, and variants of digital tutoring), which are also informed (in specification) by the qualitative research. In addition, administrative data from the school districts' and providers' implementation of tutoring interventions will allow for the construction of measures of student tutoring dosages with specific providers, including number of hours attended and total expenditures.

Findings / Results:

Digital providers are gaining market share at a faster rate than providers of face-to-face private tutoring. Further, online providers tend to charge significantly more per hour ($20 more per hour, on average) and provide students with fewer hours of service than face-to-face tutoring providers (18 hours versus 35 hours). These higher rates could be justified if students and families were getting higher quality services for their money. However, estimates of the comparative effectiveness of digital vs. non-digital providers in our study do not appear to justify their

differential rates. Indeed, by our own estimates, digital tutoring is, on average, negatively correlated with student performance in mathematics and reading (i.e., when comparing students served by digital vs. non-digital providers) (Burch et al, 2011). Coupled with on our in depth qualitative research into the nature of the instructional setting in digital OST, the factors impacting the design of the instructional setting, and its impact on student learning, we identify several characteristics or conditions that we hypothesize are likely to determine digital tutoring effectiveness: access (including hardware and software), the role of the tutor, and the nature of curriculum and assessment. Ultimately, we are capturing how decisions made about hardware, software, the role of the tutor, curriculum and assessment influence instructional quality and ultimately, the impact (or lack thereof) on student learning.

Conclusions:

Because digital tutoring is rapidly expanding, more rigorous, independent evaluations of their effectiveness is critical to inform federal, state and local policy decisions that influence their role and application of technology in educating underserved students. Further, the in-depth observations and vignettes in this paper illustrate the challenges in documenting and measuring technology use and its impact in OST tutoring interventions on student learning. Currently, the limited, self-generated information that is disseminated by providers to parents and students does not usefully guide parent and student choices of OST tutoring providers. In summary, the paper will generate important and generalizable insights on the nature of digital OST instruction, what constitutes and contributes to high-quality, OST tutoring in digital contexts.

Appendix A. References

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