

**Adapting and Implementing a Geospatial High School Course in Career and Technical Education Clusters in Urban Settings**

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Project type:​ Scaling, Expanding, and Iterating Innovations

Project Overview: This project aims to adapt the Geospatial Semester for Career and Technical Education in a large urban district through effective teacher professional development and lesson design.

Curricular change in a large district is challenging, but possible. The key elements developing partnerships with school leaders and adapting curriculum and professional development to meet district needs (and not being in a global pandemic is also helpful!)

**Lessons Learned & Insights Gained**

Professional Development (PD) Structure: Regular PD opportunities focused on teaching lesson-specific GIS skills may be more helpful for teacher confidence and lesson implementation than time-intensive GIS workshops.

Lesson Co-Design: Collaborative work circles made up of teachers, researchers, and GIS experts are important for the successful design and implementation of GIS-infused lessons that are student-driven, culturally responsive, relevant to disciplinary content, and supportive of spatial reasoning.

**Equity**

Through iterative co-design between teachers and researchers, 92% of the GIS-infused lessons implemented in Year 4 were considered culturally responsive.

Our work serves diverse CPS students—in our most recent GIS-infused unit, 33% of students identified as black and 23% identified as Latinx.

Students’ perceptions of equity in their GIS-infused classes predicted expectancy of success in computer science (CS) and interest in taking more CS courses.

**New Challenges & Next Steps**

Changes in CPS leadership made teacher recruitment and lesson implementation challenging over the past year. We built relationships with new CPS leaders and will be conducting teacher professional development workshops and implementing our lessons with the Business and IT clusters in Spring 2023.

We aim to develop an ArcGIS Business Analyst Certificate for students participating in our curriculum.