Partnering with PennDOT and SEDA-COG: Advancing Rigor Through Real-World Applications

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This engaged scholarship experience was a part of the Penn State University online course, “Geographic Information Systems for Transportation (GIS-T): Principles, Data and Applications”. This project was conducted with the support of the Pennsylvania Department of Transportation (PennDOT) and the Susquehanna Economic Development Association-Council of Governments (SEDA-COG - a regional Metropolitan Planning Organization (MPO) that covers a portion of central Pennsylvania).

The purpose of this project was to provide students with an opportunity to engage in real-world practical experience that would add rigor to their online class. Many students enrolled in Penn State online geospatial education courses are working adult professionals. As such, they find particular value in learning experiences that are practical, hands-on and relevant to their career path. The partner agencies involved, PennDOT and SEDA-COG, benefitted by having the students provide valuable analysis and recommendations that are currently being evaluated and acted upon by those agencies.

**KEY POINTS**
- Students applied their knowledge of GIS-T principles, data, and applications to a set of real-world GIS-T projects.
- Students utilized GIS-T to address several practical, real-world needs and aspects of inter-agency operations at state and regional levels.
- Students procured, manipulated, and analyzed various data sources using GIS-T tools.
- Students, working collaboratively from a distance, integrated hands-on GIS analysis, produced and summarized results, and compiled written project reviews and recommendations for continuing work.

**BEST PRACTICE**
Our planning and evaluation were guided by the following publication: Avila-Linn, C., Rice, K., & Akin, S. (2012). Designing Community-Based Courses: A guide for instructors to develop community partnerships and create engaged public scholarship courses. Cal Corps Public Service Center.

**APPROACH**

### Three-Pronged Project Analyses:
- Local bridge conditions
- Non-motorized vehicle safety issues
- Road Condition Reporting System (RCRS) road closures

### Collaboration Tools:
- Google documents
- Google hangouts/chats

### Project Outcomes:
- Map outputs that can be utilized by PennDOT and SEDA-COG
- Story map production with real-world recommendations
- Recommendations for improved data quality/usefulness
- Established working relationship between neighboring MPOs
- Meaningful educational experience for all students

**CONFERENCES IMPERATIVES**

### Impact
Students reflected on the value of the experience in a "Digging Deeper" paper. They also provided partner agencies with recommendations via a formal report and story map.

### Reciprocity
Students benefitted from being able to apply GIS-T knowledge in an authentic setting. Partners benefitted by receiving valuable analysis and recommendations.

### Rigor
This experience advanced the rigor of the course by giving students the opportunity to directly apply their learning in a real-world project.

### Diversity
This project brought together adult students with a diverse array of professional backgrounds and expertise from locations all across the U.S.

### Institution-Wide Involvement
This is an example of finding a meaningful way to bring an engaged scholarship experience to Penn State’s World Campus students.

**SUMMARY & CONCLUSIONS**

Students in an online learning environment were able to meaningfully participate in an engaged scholarship experience that advanced the rigor of the regular coursework. Advance planning on the part of the instructor in conjunction with partner agencies was critical. In addition, students needed to find and utilize effective means for asynchronous communication at a distance. Finally, students were able to reflect on their experiences and their relevance to their learning by composing a reflective "Digging Deeper" paper.