**A 5$ Solution for Fighting Engineering Stereotypes in Rural Schools**

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**Introduction**

P-12 students tend to hold stereotypical views of engineers (Hammack et al., 2015).

“Because of these stereotypes, students have a narrow view of engineering that becomes unappealing to them. This view of engineering is one that is largely thought to be only related to building/fixing, especially related to construction sites and fixing cars or trains specifically” (Knight & Cunningham, 2004).

Current solutions are expensive

**Methods**

1. Understand student stereotypes about engineering through a “Draw an Engineer Test” (Knight & Cunningham, 2004).
2. Measure engineering awareness, interest, willingness to participate in extracurricular activities
   - Baseline measures
   - Post-activity
3. One-day intervention targeting grades: 3, 4, 5 and 9
4. Analysis: t-tests, Cohen’s d, inductive thematic analysis of drawings

**Interpreting Results**

3rd and 4th grades were extremely interested in field, activities and extracurricular activities.

5th graders more interested in after-school activities than engineering as a field.

9th grade interest in engineering as a field, but “too cool for school”

**Future research**

Exploratory study in one school → Need more studies!

Need to study gender!

Urban v. Rural

STEM exposure study: 3D printer and federal grant

**Conclusion**

Third and fourth grade students may be most receptive to interventions designed to increase awareness and interest in engineering education and work. There is a need to invest human rather than material resources in rural settings such as Lamoni. This project shows the difference that is made when engineering students engage in dialogue with schools in their communities.

**Sources**


http://www.eie.org/engineering-elementary/research/articles/draw-engineer-test-daet-development-tool-investigate


http://dx.doi.org/10.7771/2157-9288.1102