Renewable Energy Education:
Does it impact Students’ perception of climate change?
Does environmental education alter students’ attitudes towards environment?

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Preliminary Research Findings:

1. Students when measured on their subjective norms on learning about renewable energy place greater emphasis on *their teachers* than they do on their *parents or friends*.

2. Students’ extrinsic motivations (*test and curriculum*) are strongly correlated in affecting their behavioral intent to learn renewable energy.

3. Students’ intrinsic motivation (*personal preference*) is also extremely high to learn or continue to learn about renewable energy.
(1) Self-sufficiency in Energy needs
(2) Environmental implications in meeting the energy needs
Three Fixes:

Heberlein (2012) proposes three fixes to our environmental problems

1. **Structural fix** (changing human behavior contextually)

2. **Technological fix** (retrofitting buildings or changing the environment directly—carbon sequestration)

3. **Cognitive fix** (presenting information or educating people and then relying on them to change).
Research Study Sites

Fig 1: Location of participating schools during 2012-13
Surprisingly, we found that a considerable majority (~58%) of students’ grade 8-12 have an incorrect understanding of what STEM stands for.
We find that the relative importance of renewable energy to be lowest (28.5%) when compared with other societal issues such as hunger (64.6%).
Climate change vs. Energy Security

The comparative evaluation (fig 4) of using renewable energy (RE) as a means to address climate change vs. using RE to solve energy problem indicates a relative lower agreement (25.6%) in using RE to address climate change.
We find this disparity existing across regions (fig 5) with Ohio and Delaware having the least divergence (7.7% and 8.9% respectively).
Preliminary Results

Fig 6: Students’ willingness (%) to learn about renewable energy if the topic was included on tests (pre-survey: n=1549; post-survey: n=1439).
Fig 7: Response of students (%) to learn about renewable energy if asked by their teachers (pre-survey: n=1549; post-survey: n=1439).
Fig 8: Response of students (%) to learn about renewable energy if asked by their parents (pre-survey: n=1549; post-survey: n=1439).
Preliminary Results

Fig 9: Response of students (%) to learn about renewable energy if their friends wanted to (pre-survey: n=1549; post-survey: n=1439).

<table>
<thead>
<tr>
<th>Group</th>
<th>Strongly Disagree/Disagree</th>
<th>Neutral</th>
<th>Strongly Agree/Agree</th>
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<tr>
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<tr>
<td>Pre-Control</td>
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<td>14</td>
<td>20</td>
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</tbody>
</table>
Fig 10: Students (%) expectations on learning about renewable energy in the future (pre-survey: n=1549; post-survey: n=1439).
Fig 11: Students (%) personal preference on learning about renewable energy in the future (pre-survey: n=1549; post-survey: n=1439).
Conclusions....

1. The students across sites place direct emphasis on systemic educational drivers
   - Tests
   - Teachers

2. Societal norms (hunger, obesity vs. renewable energy) and subjective norms (parents and friends) have little traction on students’learning.
Conclusions....

3. A directed policy on enhancing student education could generate increased renewable energy literacy (REL) within students only through an interdisciplinary curricula adoption of renewable energy topics.
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Questions and/or Comments

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