Teaching Social Justice Issues Through Mathematics Curriculum

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Incarceration lesson: Exploring incarceration rates among different races in the United States

**Main Claim** – High School Students: High school students showed growth in their understanding and perspectives of social justice issues through exploration with math.

**Results**

<table>
<thead>
<tr>
<th>Race/Hierarchy</th>
<th>Percentage of Population Imprisoned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>3%</td>
</tr>
<tr>
<td>Asian</td>
<td>1%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1%</td>
</tr>
<tr>
<td>Latino</td>
<td>3%</td>
</tr>
<tr>
<td>White</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
</tr>
</tbody>
</table>

Sub-claim: After the lesson, 66% (6/11) students stated that discrimination/racism is prevalent in American society.

**Mathematical classification of a food desert:**

“areas where greater than 30% of houses are more than 10 miles away from an affordable grocery store would be considered a food desert.”

**Conclusions**

- Policy changes students implied over all lessons: do more with housing, eliminate ACT test, reform law system, and use mathematics to analyze gerrymandering.
- Overall perspective changes: Students realized there are structural issues within society which make aspects of life unfair for minorities and/or working-class individuals, such as redlining and gerrymandering.
- Deviate ACT test because scores may depend on external factors rather than intelligence, as they found a positive linear correlation with median household income and ACT score, and a negative linear correlation with FRL % and ACT score.
- Maybe by looking at overall GPA instead of ACT score this wouldn’t exclude marginalized students from gaining bachelor’s degrees and beyond as much as it does. This is a research question for another time.
- There was not a significant change in students’ social perspectives based on the pre and post survey from the multicultural index. In order to conclude if students’ overall social/multicultural perspective changed, more research needs to be done, over a longer time frame.
- Overall, students became more knowledgeable of social injustices using mathematics and were able to use mathematics in a way which was different from traditional methods to explore those injustices.
- Given the activities students explored, they were all able to make broad claims about the specific social justice issues explored, while the preservice teachers analyzed solutions to these social injustices and sought after breaking the status quo.

**Acknowledgments:**