Improving Mathematics Vocabulary Instruction

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GPS: Ignorance is Not Bliss

Problem
• Third grade students struggle with mathematics vocabulary
• Words with multiple meanings cause confusion

Background
• 33% of third grade students scored below proficient on the math MCAS
• Deficiency is partially caused by confusion about vocabulary used in test
• The focus of our project is on words with multiple meanings (Common Use vs. Math)

Conclusion
• Students were engaged and performed well
• The gap between the pre-test and post-tests is large, indicating a sharp increase in knowledge
• The gap between the immediate and delayed post-test results is very small, indicating substantial retention
• The data infers the pilot program was a success

Assessment Plan

Pre-Test
• 10 Question Vocabulary Matching Worksheet

Activity
• Each student is given one word to draw/explain (Math OR English definition)
• Students find the person with the same word

Presentation
• Partners create a poster to present
  • a drawing/example
  • mathematical definition (in own words)

Immediate Post-Test
• Same words/definitions as Pre-Test (different order)
• Directly after presentations

Delayed Post-Test
• Same words/definitions as previous two tests (different order)
• 5 Days Later

Statistical Analysis:

<table>
<thead>
<tr>
<th></th>
<th>Average Score</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test</td>
<td>3.7 ± 1.0</td>
<td></td>
</tr>
<tr>
<td>Immediate Post-Test</td>
<td>5.8 ± 1.2</td>
<td>P &lt; 0.00006 vs. Pre-Test</td>
</tr>
<tr>
<td>Delayed Post-Test</td>
<td>5.3 ± 1.3</td>
<td>P &lt; 0.01151 vs. Pre-Test</td>
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</tbody>
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Acknowledgments:
Ellen Day, Jessica Kowalik, Martha Cyr, Shari Weaver, WPI IRB, Vishal Rathi (PLA)