2017-2018 Winter NWEA Class Size vs. Growth Analysis

Office of Teaching and Learning
Class Size and Research

● Smaller class sizes...
  ○ Make it easier for teachers to build relationships
  ○ Provide more of an opportunity to get personalized attention
  ○ Support environments where students are more likely to be engaged/participate
  ○ Provide teachers with more flexibility to use different instructional approaches
  ○ Reduce the workload of teachers

● What about the impact on academics?
  ○ Primary - more of an impact
  ○ Intermediate and middle level - mixed bag
  ○ High School - no impact at all
Correlation

- Correlation describes the relationship between two variables.
- Correlation $\neq$ Causation!
Correlation
Grades 3-8

2017-2018 Winter NWEA Class Size vs Growth - Grades 3-8

\[ y = -0.0033x + 0.6743 \]

\[ R^2 = 0.0133 \]
Grades 3-5

2017-2018 Winter NWEA Class Size vs. Growth
All Elementary

y = -0.0038x + 0.7241
R² = 0.019
2017-2018 Winter NWEA Class Size vs. Growth
All Middle School

Percent of Students Who Met or Exceeded Growth

Number of Students

y = 0.0023x + 0.4967
R^2 = 0.0065

Grades 6-8
Grades 3-8 - Class Size > 25

2017-2018 Winter NWEA Class Size vs. Growth
Class Size > 25 in Grades 3-8

\[ y = 0.0017x + 0.5395 \]
\[ R^2 = 0.0008 \]
Grades 3-5 - Class Size > 25

2017-2018 Winter NWEA Class Size vs. Growth
Class Size > 25 in Grades 3-5

\[ y = 0.0072x + 0.447 \]
\[ R^2 = 0.026 \]
Grades 6-8 - Class Size > 25

2017-2018 Winter NWEA Class Size vs. Growth
Class Size > 25 in Grades 6-8

\[ y = -0.0046x + 0.6825 \]

\[ R^2 = 0.005 \]
## Sub-Group Correlations

<table>
<thead>
<tr>
<th>Sub-Group</th>
<th>Correlation</th>
<th>Sub-Group</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-8 ELA</td>
<td>0.010</td>
<td>6-8 Honors</td>
<td>0.145</td>
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<tr>
<td>3-8 Class Size &gt;25</td>
<td>0.028</td>
<td>3-5 Class Size &gt; 25</td>
<td>0.161</td>
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<tr>
<td>3-8 ELA Honors/Plus</td>
<td>0.049</td>
<td>6-8 On Grade Level Math</td>
<td>0.189</td>
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<tr>
<td>3-8 On Grade Level ELA/Reading</td>
<td>0.071</td>
<td>3-8 Honors/Plus</td>
<td>0.200</td>
</tr>
<tr>
<td>6-8 Class Size &gt; 25</td>
<td>0.071</td>
<td>3-8 Math Honors/Plus</td>
<td>0.200</td>
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<tr>
<td>3-8 On Grade Level</td>
<td>0.073</td>
<td>6-8 On Grade Level ELA/Reading</td>
<td>0.212</td>
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<tr>
<td>6-8 All</td>
<td>0.135</td>
<td>3-5 On Grade Level ELA</td>
<td>0.212</td>
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<tr>
<td>3-5 Plus</td>
<td>0.081</td>
<td>3-5 On Grade Level</td>
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<tr>
<td>3-8 All</td>
<td>0.115</td>
<td>3-8 Math</td>
<td>0.271</td>
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<tr>
<td>6-8 On Grade Level</td>
<td>0.135</td>
<td>3-8 On Grade Level Math</td>
<td>0.276</td>
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<tr>
<td>3-5 All</td>
<td>0.138</td>
<td>3-5 On Grade Level Math</td>
<td>0.317</td>
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</tbody>
</table>
Analysis

- The impact of class size on student growth is directly in line with what the research suggests:
  - Mixed results at the intermediate and middle level
Questions to Further Investigate

- How do teachers with a similar class size (large and small) and student population have significantly different results?
- What impact does larger class sizes have on the social-emotional well-being of our students in Quakertown?
Grades 3-8

2017-2018 Winter NWEA Class Size vs Growth - Grades 3-8

\[ y = -0.0033x + 0.6743 \]
\[ R^2 = 0.0133 \]
Questions to Further Investigate

- How do teachers with a similar class size (large and small) and student population have significantly different results?
- What impact does larger class sizes have on the social-emotional well-being of our students in Quakertown?
- What supports can the building administrator, instructional coaches, or district level supervisors offer to those teachers who may be struggling to get students to meet expected growth?