DOES REMEDIATION WORK FOR ALL STUDENTS?

How the Effects Of Postsecondary Remedial And Developmental Courses Vary By Level Of Academic Preparation

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Lack of academic prep is a significant barrier to success

Nationally approx. 40% of 1st year students are placed into college remediation (55-60% at CCs)

Student Aid and Fiscal Responsibility Act of 2009: Emphasis on increasing the number of adults with 2yr degrees → Effective remediation policies are central to this goal

Do remedial and developmental courses help to improve the outcomes of students?

Past studies on the effects of remediation (FL, OH, TX):

- Mixed results, often negative or zero
- Only focus on students on the margin of needing remediation—do not investigate effects of remediation on students who are extremely under-prepared (they don’t have an appropriate control group)

The Tennessee Case

- Multiple cutoffs and changes in placement policy over time → Investigate effects of different levels of remediation using multiple RDs
- Sample: Fulltime students under age 21 who began at a TN public college or university in fall 2000

REMEDIATION IN TENNESSEE

ACT/SAT score determines which placement exam (if any)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>College Level</td>
<td>Take COMPASS Algebra II exam</td>
<td>Take Remedial Arithmetic</td>
<td>Take Remedial Arithmetic</td>
</tr>
<tr>
<td>Take Remedial Arithmetic</td>
<td>Take Developmental Algebra II</td>
<td>Take Developmental Algebra I</td>
<td></td>
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</tbody>
</table>

COMPASS Arithmetic test

Score 0-27

Score 30-100

Score 0-29

Score 28-49

Score 50-100

Score 27-49

Score 0-29

Score 30-100
**RD #1: Effects of Recommendation to DEVELOP. ALGEBRA II –vs– COLLEGE-LEVEL MATH**

<table>
<thead>
<tr>
<th>Level</th>
<th>Total Credits after 3 years</th>
<th>College Credits after 3 years</th>
<th>Completed any Degree or Certif.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assigned to the Lower-level</td>
<td>-1.4753</td>
<td>-6.4105**</td>
<td>-0.2333*</td>
</tr>
<tr>
<td>Observations</td>
<td>(2.6086)</td>
<td>(2.6360)</td>
<td>(0.1297)</td>
</tr>
</tbody>
</table>

**RD #3: REMEDIAL ARITHMETIC –vs– DEVELOP ALGEBRA I**

<table>
<thead>
<tr>
<th>Level</th>
<th>College Credits after 3 years</th>
<th>Devel. Alg I</th>
<th>Remed. Arith.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assigned to the Lower-level</td>
<td>-3.0366*</td>
<td>Score 0-27</td>
<td>Score 0-29</td>
</tr>
<tr>
<td>Observations</td>
<td>(1.5681)</td>
<td></td>
<td></td>
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</tbody>
</table>

**RD #1: Effects of Recommendation to DEVELOP. ALGEBRA II –vs– COLLEGE-LEVEL MATH**

**Credits Accumulated Over Three Years**

Not much Difference in Total Credits

**RD #1: Effects of Recommendation to DEVELOP. ALGEBRA II –vs– COLLEGE-LEVEL MATH**

**RD #3: REMEDIAL ARITHMETIC –vs– DEVELOP ALGEBRA I**

Number of Credits

-5 -4 -3 -2 -1 0 1 2 3 4 5
WRITING – vs – REMEDIAL WRITING

<table>
<thead>
<tr>
<th></th>
<th>College-Level Writing</th>
<th>Remedial Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 28-67</td>
<td>Score 0-27</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Still Enrolled in Year 3</th>
<th>Total Credits after 3 yrs</th>
<th>College Credits after 3 yrs</th>
<th>Completed Degree or Certif.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assigned to the</td>
<td>0.2197+</td>
<td>3.9792+</td>
<td>-0.4107</td>
<td>0.3057*</td>
</tr>
<tr>
<td>Lower-level</td>
<td>(0.1378)</td>
<td>(2.7198)</td>
<td>(2.5282)</td>
<td>(0.1623)</td>
</tr>
<tr>
<td>Observations</td>
<td>898</td>
<td>898</td>
<td>898</td>
<td>898</td>
</tr>
</tbody>
</table>

COMPASS English test

Outcome: GRADE IN FIRST COLLEGE-LEVEL COURSE

Not causal analysis, but interesting estimates...

<table>
<thead>
<tr>
<th></th>
<th>College-Level Writing vs. Develop. Writing (RD #1)</th>
<th>Develop. Writing vs. Remedial Writing (RD #2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assigned to the</td>
<td>0.0342</td>
<td>0.5389***</td>
</tr>
<tr>
<td>Lower-level</td>
<td>(0.0998)</td>
<td>(0.1598)</td>
</tr>
<tr>
<td>Observations</td>
<td>782</td>
<td>522</td>
</tr>
</tbody>
</table>

FOUR-YEAR INSTITUTIONS ONLY

|                  | 0.2791*                                             | 0.1954                                     |
| Assigned to the  | (0.1464)                                           |                                            |
| Lower-level      | (0.0956)                                           |                                            |
| Observations     | 315                                                | 231                                        |

TWO-YEAR INSTITUTIONS ONLY

|                  | -0.1438                                            | 0.8960***                                  |
| Assigned to the  | (0.1356)                                           |                                            |
| Lower-level      | (0.2765)                                           |                                            |
| Observations     | 467                                                | 291                                        |

RD #2: DEVELOPMENTAL WRITING – vs – REMEDIAL WRITING

Total Credits After Three Years

Remedial Writing vs. Developmental Writing

Positive Effect

SUMMARY: TENNESSEE RESULTS

- The results suggest that remedial and developmental courses do differ in their impact by the level of student preparation
- Negative effects for those students on the margins of needing any remediation (similar to other research)
- However, at the other end of the academic spectrum, the negative effects of remediation were much smaller and occasionally positive, especially in Writing
  - Remedial and developmental courses help or hinder students differently depending on their level of academic preparedness
IMPLICATIONS AND ADDITIONAL QUESTIONS

- States and schools need not treat remediation as a singular policy but instead consider it as an intervention that might vary in its impact according to student needs.
  - Why does remediation work for some students and not for others? How can we improve remedial and developmental programs for all?
  - What is the best way to offer remediation?
  - Characteristics of strong remedial programs?

- Found differences by institutional level – Has implications for the effects of limitations on remedial course-taking (e.g., only at CCs)?

- Early Placement Testing – a preventative measure?

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