Relationship Between Basic Skills Success and Performance in Transfer Level Courses

Preliminary Results
(May 25, 2010)

Gregory M. Stoup
Director of Planning & Research
Cañada College
Research Framework

1. Objective: Examine the performance of students in transfer level courses broken out by degree of basic skills remediation.

2. Approach: Select a set of introductory transfer level courses having sufficient sample sizes of students in each basic skills category examined over the study period (2000/01 – 2008/09).

3. Research Goal: Determine if performance in the transfer course cohort is a function of the placement level of basic skills remediation.
Methodology

• Pulled the placement records of all students taking the placements test over the period Fall 2000 – Spring 2009.

• Identified all *introductory transfer level courses* taken by these students after taking their placement test (no retakes included).

• Determined the level of basic skill remediation for each student at the time of enrollment in each introductory transfer level course.

• Calculated the performance of students in these transfer courses segmented by their degree of basic skills remediation.

• Made adjustments to isolate the relationship between a specific basic skill domain (Reading, English or Math) and performance in transfer course.
## Courses in the Selection Pool

<table>
<thead>
<tr>
<th>Transfer Level Introductory Course</th>
<th>Reading</th>
<th>English</th>
<th>Math</th>
<th>Transferability</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Psychology (PSYC 100)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>IGETC</td>
</tr>
<tr>
<td>Intro to Sociology (SOCI 100)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>IGETC</td>
</tr>
<tr>
<td>Principles of Macro Economics (ECON 100)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>IGETC</td>
</tr>
<tr>
<td>Principles of Micro Economics (ECON 102)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>IGETC</td>
</tr>
<tr>
<td>History of Western Civilization I (HIST 100)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>IGETC</td>
</tr>
<tr>
<td>Cultural Anthropology (ANTH 110)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>IGETC</td>
</tr>
<tr>
<td>Art of the Western World (ART 100)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>CSU</td>
</tr>
<tr>
<td>Survey of Business (BUS 100)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>CSU; UC</td>
</tr>
<tr>
<td>Intro to Astronomy (ASTR 100)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>IGETC</td>
</tr>
<tr>
<td>Principles of Biology (BIO 110)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>IGETC</td>
</tr>
<tr>
<td>Intro to Philosophy (PHIL 100)</td>
<td></td>
<td></td>
<td></td>
<td>IGETC</td>
</tr>
<tr>
<td>Intro to Interior Design (INTD 115)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>CSU</td>
</tr>
<tr>
<td>American Politics (PLSC 210)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>IGETC</td>
</tr>
<tr>
<td>Beginning Clothing Construction (FASH 110)</td>
<td>Read 836</td>
<td>Engl 836</td>
<td></td>
<td>CSU</td>
</tr>
</tbody>
</table>
Placement patterns have remained fairly stable over the decade.

### Placement of Canada Students

<table>
<thead>
<tr>
<th>Group Placement</th>
<th>2000/01</th>
<th>2004/05</th>
<th>2008/09</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MATH</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Algebra</td>
<td>37.8%</td>
<td>36.1%</td>
<td>41.5%</td>
</tr>
<tr>
<td>Elem Algebra</td>
<td>37.1%</td>
<td>34.3%</td>
<td>32.1%</td>
</tr>
<tr>
<td>Intermediate Algebra</td>
<td>14.6%</td>
<td>15.9%</td>
<td>13.9%</td>
</tr>
<tr>
<td>Transfer Level Math</td>
<td>10.5%</td>
<td>13.7%</td>
<td>12.6%</td>
</tr>
<tr>
<td><strong>READING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developmental Reading</td>
<td>49.1%</td>
<td>45.4%</td>
<td>47.5%</td>
</tr>
<tr>
<td>Acad Reading Strategies</td>
<td>25.2%</td>
<td>28.4%</td>
<td>29.2%</td>
</tr>
<tr>
<td>No Reading Required</td>
<td>25.7%</td>
<td>26.1%</td>
<td>23.3%</td>
</tr>
<tr>
<td><strong>ENGLISH</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic Composition</td>
<td>49.7%</td>
<td>48.2%</td>
<td>48.3%</td>
</tr>
<tr>
<td>Writing Development</td>
<td>31.7%</td>
<td>32.1%</td>
<td>32.8%</td>
</tr>
<tr>
<td>Transfer Level English</td>
<td>18.5%</td>
<td>19.8%</td>
<td>19.0%</td>
</tr>
</tbody>
</table>
Basic Skills Math
Sequence
Profile of our Mathematics Course Sequence

Algebra Curriculum Sequence

- **PRE ALGEBRA**: Course Pass % = 55%
- **ELEMENTARY ALGEBRA**: Course Pass % = 50%
- **INTERMEDIATE ALGEBRA**: Course Pass % = 55%
- **TRANSFER LEVEL MATH**: Course Pass % = 75%

Placement Patterns (2006/07 – 2008/09)

- Pre-Algebra: 39%
- Elementary Algebra: 34%
- Intermediate Algebra: 15%
- Transfer Level: 12%
Performance in Transfer Courses based on the degree of Math remediation

Success Rates of students in Selected Transfer Courses* as they completed each step in the Basic Skills Algebra Sequence
(Summer 2000 – Spring 2009)

Average College Success Rate in Transfer Courses = 75.2%

- Placed into but Did not complete Pre-Algebra: 44.9%
- After Passing Pre-Algebra: 56.8%
- After Passing Elementary Algebra: 70.1%
- After Passing Intermediary Algebra: 84.1%
Sequence Completion Rates by Initial Course Placement

### Basic Skills Curriculum Sequence

- **PRE ALGEBRA**
  - Course Pass % = 55%

- **ELEMENTARY ALGEBRA**
  - Course Pass % = 50%

- **INTERMEDIATE ALGEBRA**
  - Course Pass % = 55%

- **TRANSFER LEVEL MATH**
  - Course Pass % = 75%

Percent of Students Completing the Algebra Sequence within 2 to 5 Years

<table>
<thead>
<tr>
<th>Initial Placement</th>
<th>2 years</th>
<th>3 years</th>
<th>4 years</th>
<th>5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE ALGEBRA</td>
<td>2.3%</td>
<td>3.6%</td>
<td>5.4%</td>
<td>6.1%</td>
</tr>
<tr>
<td>ELEMENTARY ALGEBRA</td>
<td>15.5%</td>
<td>19.1%</td>
<td>20.6%</td>
<td>22.4%</td>
</tr>
<tr>
<td>INTERMEDIATE ALGEBRA</td>
<td>43.4%</td>
<td>47.6%</td>
<td>49.2%</td>
<td>49.2%</td>
</tr>
</tbody>
</table>
Basic Skills
Reading & English Sequences
Profile of Developmental English & Reading

Basic Composition
Course Pass % = 58%

Developmental Reading
Course Pass % = 58%

Writing Development
Course Pass % = 64%

Reading Strategies
Course Pass % = 67%

TRANSFER LEVEL ENGLISH
Course Pass % = 69%

Placement Patterns
(2006/07 – 2008/09)

English

Transfer Level English 19%
Basic Comp 49%
Writing Dev 32%

Reading

No Reading Required 25%
Dev Reading 47%
Reading Strategies 28%
Basic Comp Required 25%

Performance in Transfer Courses based on the degree of Reading remediation

Success Rates of students in Selected Transfer Courses as they move through each step in the Basic Skills Reading Sequence

(Summer 2000 – Spring 2009)

Average College Success Rate in Transfer Courses = 75.2%

Placed into but did not complete Read 826

After Passing 826 or placed into 836

After Passing 836 or placed into 100

- Placed into but did not complete Read 826: 47.9%
- After Passing 826 or placed into 836: 56.9%
- After Passing 836 or placed into 100: 77.5%

Average College Success Rate in Transfer Courses = 75.2%
Performance in Transfer Courses based on the degree of English remediation

Success Rates of students in Selected Transfer Courses* as they move through each step in the Basic Skills English Sequence
(Summer 2000–Spring 2009)

Average College Success Rate in Transfer Courses = 75.2%

- Placed into but did not complete English 826: 52.5%
- After Passing 826 or placed into 836: 64.7%
- After Passing 836 or placed into 100: 75.8%

Average College Success Rate in Transfer Courses = 75.2%
Profile of Developmental English & Reading

### Basic Composition
Course Pass % = 58%

### Developmental Reading
Course Pass % = 58%

### Writing Development
Course Pass % = 64%

### Reading Strategies
Course Pass % = 67%

### Transfer Level English
Course Pass % = 69%

#### Percent of Students Completing the Basic Skills Sequence within 2 to 5 Years

<table>
<thead>
<tr>
<th>Initial Placement</th>
<th>2 years</th>
<th>3 years</th>
<th>4 years</th>
<th>5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 826</td>
<td>20.3%</td>
<td>23.9%</td>
<td>27.2%</td>
<td>27.7%</td>
</tr>
<tr>
<td>READ 826</td>
<td>22.1%</td>
<td>24.8%</td>
<td>29.9%</td>
<td>30.1%</td>
</tr>
</tbody>
</table>
Performance in Transfer Level Course as a function of degree of remediation in Math and Reading
Success rates of students in select transfer level courses
(Summer 2000 – Spring 2009)

**Psychology**
- Placed; not passed: 37.5%
- Placed; passed: 73.4%
- Improvement: +35.9%

**Sociology**
- Placed; not passed: 37.1%
- Placed; passed: 83.3%
- Improvement: +46.2%

**Economics**
- Placed; not passed: 39.5%
- Placed; passed: 76.6%
- Improvement: +37.1%

**Philosophy**
- Placed; not passed: 45.5%
- Placed; passed: 82.4%
- Improvement: +36.9%

Placed into Pre-Algebra & Did Not Pass the Course

Placed into Transfer Level math or Completed the BS Algebra Sequence

N = 182

N = 216

N = 149

N = 151
Success rates of students in select transfer level courses
(Summer 2000 – Spring 2009)

- **Psychology**
  - Placed; not passed: 55.2%
  - Placed; passed: 77.4%
  - Change: +22.2%
  - N = 315

- **Sociology**
  - Placed; not passed: 48.6%
  - Placed; passed: 75.6%
  - Change: +27.0%
  - N = 281

- **Economics**
  - Placed; not passed: 50.1%
  - Placed; passed: 64.9%
  - Change: +14.8%
  - N = 88

- **Philosophy**
  - Placed; not passed: 49.1%
  - Placed; passed: 74.9%
  - Change: +25.8%
  - N = 184

Legend:
- Placed into Reading 826 & Did Not Pass the Course
- Placed into Transfer Level Reading or Completed the Basic Skills Reading Sequence
Now for the kicker!

Just when you thought you had it all figured out...
Question to consider: what are the most valuable skills being developed in our remedial programs?

Success rates of students taking Yoga (Summer 2000 – Spring 2009)

Placed into Pre-Algebra & Did Not Pass the Course

Placed into Transfer Level math or Completed the BS Algebra Sequence

Placed into Reading 826 & Did Not Pass the Course

Placed into Transfer Level Reading or Completed the Basic Skills Reading Sequence

<table>
<thead>
<tr>
<th>Placed; not passed</th>
<th>Placed; passed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yoga</strong></td>
<td></td>
</tr>
<tr>
<td>N = 115</td>
<td></td>
</tr>
<tr>
<td>61.5%</td>
<td>86.6%</td>
</tr>
<tr>
<td>+ 25.1%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Placed; not passed</th>
<th>Placed; passed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yoga</strong></td>
<td></td>
</tr>
<tr>
<td>N = 121</td>
<td></td>
</tr>
<tr>
<td>65.1%</td>
<td>84.9%</td>
</tr>
<tr>
<td>+ 19.8%</td>
<td></td>
</tr>
</tbody>
</table>
At this risk of overloading you with information...
We’ve just looked at student achievement as defined by success rates

Recall the evidence we collected that indicated a Mastery Effect in basic skill sequence completion
# Sequence Completion Rates by Initial Course Placement

## Cañada Curriculum Sequence

<table>
<thead>
<tr>
<th>Initial Placement</th>
<th>2 years</th>
<th>3 years</th>
<th>4 years</th>
<th>5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Received an “A” in Pre-Algebra*</td>
<td>8.8%</td>
<td>13.8%</td>
<td>15.3%</td>
<td>17.8%</td>
</tr>
<tr>
<td>Did not Receive an “A” in Pre-Algebra</td>
<td>0.8%</td>
<td>1.7%</td>
<td>2.5%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Mastery is key! Preliminary findings suggest that students receiving an A grade in Pre-Algebra are 8 or 9 times more likely to complete the algebra sequence.

**Important Finding:** For students receiving an A in Pre-Algebra there is no disproportional impact by ethnicity in algebra sequence completion.

* Math 811 is a self-paced course. Cohort is restricted students receiving an A grade and completing the course in one semester (3.0 units).
What are the two measures most widely used by CCCs to assess progress?

- Success Rate
- Retention Rate

Consider the multitude of changes over this period:

- faculty/staff turnover
- program successes/failures
- changing student demographics
- budget contractions/expansion
- leadership turnover

and yet these performance metrics remained relatively stable.
Looking solely at success rates can mask important features of student performance.

Evidence from a course on Writing Development (ENGL 836)

- **Fall 2008**: Success Rate = 73%
- **Fall 2009**: Success Rate = 74%

**How similar are the learning environments of these two classrooms?**

Research tells us that the English sequence completion rate for this group is likely to be much higher.
Likewise, two courses with identical retention rates can be very different classrooms and foreshadow different futures for students.

Evidence from a course on Intermediate Algebra (MATH 110)

Fall 2008

Spring 2009

Research tells us that those withdrawing from this class are more likely to pass a retake of the course.

There are ten fewer students in the classroom during the period between the two midterms

Retention Rate: 75%
Okay, that’s a lot to digest

Let's Discuss