Lessons Learned from Five Years of Developmental Education Acceleration

The Community College of Baltimore County

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Session Overview

- Introductions
- Why We Need Acceleration
- Acceleration Models and Outcomes in English and math
- Lessons Learned
<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>CCBC Students</td>
<td></td>
</tr>
<tr>
<td>Average age</td>
<td>29</td>
</tr>
<tr>
<td>Female/male</td>
<td>59/41%</td>
</tr>
<tr>
<td>Students of color</td>
<td>44%</td>
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<tr>
<td>Full/part-time</td>
<td>34/66%</td>
</tr>
<tr>
<td>Developmental</td>
<td>81%</td>
</tr>
<tr>
<td>Community College of Baltimore County</td>
<td>35,522 credit</td>
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CCBC’s Developmental Education Courses

- MATH 081-3 hrs
- MATH 082-3 hrs
- MATH 083-3 hrs
- MATH 111, 125, 128, 131, 132, 133, 135, 153, 163
- RDNG 051-5 hrs
- RDNG 052-4 hrs
- ENGL 101; many other courses
- ENGL 051-4 hrs
- ENGL 052-3 hrs
- ENGL 101; many other courses
CCBC’s Developmental Education Program in 2006

- Certified by National Association for Developmental Education at the Distinguished Level
- Winner of the MetLife Community College Excellence Award
- Featured in books by Hunter Boylan and Bob McCabe
Students who took ENGL 052 for the first time in 1988/1989

- took 052 1988/1989 863
- S in 052 490 57%
- took 101 355 41%
- A, B, or C in 101 287 33%
- never passed 052 373 43%
- took no more writing courses 135 16%
- D, F, or W in 101 68 8%
<table>
<thead>
<tr>
<th>Step</th>
<th>Percentage</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. New students enrolled in Math 081</td>
<td>1168</td>
<td>69% Passed Math 081</td>
</tr>
<tr>
<td>2. Enrolled in Math 082</td>
<td>53%</td>
<td></td>
</tr>
<tr>
<td>3. Pass Math 082</td>
<td>36% Enrolled in Math 083</td>
<td></td>
</tr>
<tr>
<td>4. Pass Math 083</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>5. Enrolled in College level Math</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>6. 200 Enrolled in College level Math</td>
<td>17%</td>
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</tr>
</tbody>
</table>

Students new to CCBC in Fall 2002 and Spring 2003 - tracked for 4 years
New students in MATH 082

1555 students

67% Passed Math 082

55% Enrolled in Math 083

39% Passed Math 083

29% Enrolled in College level Math

21% Pass college level--325

Students new to CCBC in Fall 2002 and Spring 2003 - tracked for 4 years
New students in Math 083: 2102
Passed Math 083: 72%
Enrolled in college level Math: 42%
Passed college level Math: 31%

Students new to CCBC in Fall 2002 and Spring 2003 - tracked for 4 years
Challenges and Solutions

• **Challenge:** The number of opportunities for students to exit developmental sequences

• **Solution:** To compress developmental sequences into single semesters so students can experience credit courses earlier
Accelerated Learning Program in English: ALP

- reduces stigma
- improves attachment
- provides stronger role models
- encourages cohort effect
- changes attitude toward developmental course
- allows individual attention
- allows time for non-cog issues
- allows coordination of the two courses

ENG 101

ENG 052
What do we do in the ALP 052 class?

Everything possible to maximize the ALP students’ likelihood of success in the 101 class.

- The class is conducted as a writing workshop supporting the students as they also take ENG 101
- answering questions left over from the 101 class
- lots of writing, mostly of short papers that reinforce what has been discussed in the 101 class or prepare for what will be discussed in the 101 class
- discussing ideas for the next essay in 101
- reviewing drafts of essays the students are working on for 101
- working on reducing the frequency and severity of error in the students’ writing
- discussing how to succeed as a college student
- discussing problems interfering with the students’ progress in 101
traditional developmental students: fall 2007 – fall 2010

ALP students: fall 2007 – fall 2010

data from Cho, Kopko, & Jenkins, 2012 (CCRC)
traditional developmental students: fall 2007 – fall 2010

- took ENG 052 Fa07-Fa10 5545 100%
- passed ENG 052 3604 65%
- did not pass ENG 052 1941 35%
- took no more writing courses 943 17%
- didn’t pass ENG 051 1829 33%

ALP students: fall 2007 – fall 2010

- took ENG 052 Fa07-Fa10 592 100%
- passed ENG 052 485 82%
- didn’t pass ENG 052 107 18%
- took no more writing courses 0 0%
- didn’t pass ENG 051 154 26%
- passed ENG 051 438 74%
- took ENG 101 592 100%
- passed ENG 101 1829 33%
- didn’t pass ENG 051 832 15%

data from Cho, Kopko, & Jenkins, 2012 (CCRC)
traditional developmental students: fall 2007 – fall 2010

ALP students: fall 2007 – fall 2010

data from Cho, Kopko, & Jenkins, 2012 (CCRC)
Scaling up ALP

Fall 2012: 133 sections, 1,064 ALP students
Is ALP Linked to Better Outcomes?

New Findings on the Accelerated Learning Program

Sung-Woo Cho, Ph.D.
Achieving the Dream 2013 Conference
ALP targets students who were referred to the highest level of developmental writing (English 052)

These students can enroll in English 052 and the college-level course, English 101, in the same term

Share English 101 classroom with college-ready students, with a companion class immediately following 101

What are ALP students’ outcomes, compared to students who took English 052 by itself?

- Compare accelerated students to “regular” developmental writing students
Overview of Data

• Fall 2007 to Fall 2010 cohorts (total of 10 cohorts, including summer terms)

• One-year outcomes for all cohorts: followed the year after taking English 052

  Outcomes include:
  • English 101/102 attempt, completion, and grade
  • Persistence to next term and year
  • Number of college credits attempted and completed
  • Four-year transfer
  • Certificate and associate degree completion
Sample Size

- In the Fall 2007 through Fall 2010 cohorts:
  - 592 ALP students
  - 5,545 non-ALP students (students who enrolled in English 052 independently)

- In the matched sample analysis:
  - 592 ALP students
  - 592 non-ALP students, matched on characteristics
Methods

- Descriptive analysis to look at outcome differences between ALP and non-ALP students
- Regression analysis to control for student characteristics, and determine association between ALP and outcomes
- Contrast outcomes of oldest cohorts to newest cohorts
- Examine outcomes by racial demographics and income
- Classroom composition analysis
English 101/102 Completion: One-Year Outcomes

- English 101 Completion
  - ALP: 80%
  - Non-ALP: 30%

- English 102 Completion
  - ALP: 50%
  - Non-ALP: 20%
Next-Term and Next-Year Persistence

- **Persist to Next Term**
  - ALP: 80%
  - Non-ALP: 70%

- **Persist to Next Year**
  - ALP: 60%
  - Non-ALP: 50%
College Credits Attempted/Completed After English 052

![Bar chart showing college credits attempted and completed after ENGL052 for ALP and Non-ALP groups.](image)
How do these differences in outcome differ by race? By income?

We used interaction terms to determine if there were significant “ALP vs. non-ALP” differences between White and Black students.

- Same with low vs. medium and high-income students

Analysis reveals that ALP appeared to be more effective for White and high-income students on some outcomes.
Up to this point, we have a group of ALP students who may look different from non-ALP students, in terms of student characteristics.

What if the differences in outcomes are driven by these differences in characteristics?

We can use propensity score matching to create a balanced sample of very similar ALP and non-ALP students.
## Matched Groups

<table>
<thead>
<tr>
<th></th>
<th>Original Sample</th>
<th>Balanced Sample</th>
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<tbody>
<tr>
<td></td>
<td>ALP</td>
<td>Non-ALP</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>60.1%</td>
<td>55.2%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>21.3</td>
<td>21.8</td>
</tr>
<tr>
<td><strong>African-American</strong></td>
<td>49.8%</td>
<td>57.0%</td>
</tr>
<tr>
<td><strong>Median Income</strong></td>
<td>$59,794</td>
<td>$58,633</td>
</tr>
<tr>
<td><strong>CPT: English</strong></td>
<td>72.5</td>
<td>70.9</td>
</tr>
<tr>
<td><strong>CPT: Reading</strong></td>
<td>68.7</td>
<td>64.5</td>
</tr>
<tr>
<td><strong>CPT: Math</strong></td>
<td>44.4</td>
<td>39.4</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>592</td>
<td>5,545</td>
</tr>
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English 101/102 Completion and Persistence Through Fall 2011: Balanced Matched Sample

- **English 101 Completion**: ALP significantly higher than Non-ALP.
- **English 102 Completion**: ALP still higher, but the difference is smaller.
- **Persistence to Next Year**: Both ALP and Non-ALP show significant improvements from English 101 to 102.

The chart illustrates the percentage completion rates and persistence rates for ALP and Non-ALP students in English 101 and 102.
Are college-ready English 101 students negatively impacted by ALP students in the same classroom?

Using classroom information, we find whether college-ready 101 students sitting with ALP students do better or worse than regular 101 students.

Results indicate that ALP-101 students were equal in English 101 performance, but had slightly lower college course enrollment and completion.

- However, this is in comparison to the large advantages for ALP students.
ALP students outperformed their non-ALP counterparts in most outcomes.

ALP students have higher overall completion rates for English 101/102 and persistence to next term/year.

Subgroup analysis suggests that ALP was more effective for White and high-income students.

Balanced match regressions showed increase in the likelihood of ALP students achieving outcomes.

English 101 students who were in same classroom as ALP students fared slightly worse in credit accumulation.
Stand Alone Developmental Math Courses

- **MATH 081**: Basic Mathematics; 3 billable/contact hours; 0 credits
- **MATH 082**: Introductory Algebra; 3 billable/contact hours; 0 credits
- **MATH 083**: Intermediate Algebra; 3 billable/contact hours; 0 credits
Accelerated Math Program (AMP)

Fast-Track Courses

- Allows student to take two courses within one semester
- Student takes course twice as often per week for half of the semester
- Successful students in first seven weeks are eligible for second seven week course
- Many students take one fast-track course per semester so it does not accelerate them through the sequence
- Courses available:
  - Developmental: MATH 081, 082, 083 (MATH 073 in Spring 2013)
  - Credit: MATH 111, 135, 163
Accelerated Math Program (AMP)

Combined Courses

- Allows student to take two courses within one semester
- Student takes course twice as often per week for the entire semester
- Same 23 students and instructor are in six hours of math class per week
- Content has been structured take one topic from lower level through upper level course before proceeding to the next topic.

Course Pairs available:

- MATH 081/082
- MATH 083/135
- MATH 082/083
- MATH 083/163
AMP Eligibility

- Students placing into MATH 081, can register for:
  - Stand alone MATH 081 section
  - Fast track MATH 081 and MATH 082 within one semester
  - MATH 081/082 Combined Course Pair

- Students placing into MATH 082, can register for:
  - Stand alone MATH 082 section
  - Fast track MATH 082 and MATH 083 within one semester
  - MATH 082/083 Combined Course Pair
Students placing into MATH 083, can register for:

- Stand alone MATH 083 section
- Fast track MATH 083 and MATH 111 within one semester
- Fast track MATH 083 and MATH 135 within one semester
- Fast track MATH 083 and MATH 163 within one semester
- MATH 083/135 Combined Course Pair
- MATH 083/163 Combined Course Pair

MATH 111: Ideas in Mathematics
MATH 135: Applied Algebra and Trigonometry
MATH 163: College Algebra
Students enrolled in MATH 081 for Fall 2010 semester

1619 students registered for MATH 081

954 (59%) passed MATH 081

665 (41%) did not complete MATH 081

847 (52%) enrolled in a MATH 082

107 (7%) did not enroll in MATH 082

369 (23%) successfully completed MATH 082

107 (7%) did not complete MATH 081

847 (52%) enrolled in MATH 082

369 (23%) successfully completed MATH 082

107 (7%) did not enroll in MATH 082

Students enrolled in MATH 081/082 Combined Course Pair sections

328 students registered for MATH 081

225 (69%) passed MATH 081

103 (31%) did not complete MATH 081

225 (69%) enrolled in a MATH 082

0 (0%) did not enroll in MATH 082

151 (46%) successfully completed MATH 082

74 (23%) did not complete MATH 082
Students enrolled in MATH 082 for Fall 2010 semester

- 2196 students registered for MATH 082
  - 1059 (48\%) passed MATH 082
  - 1137 (52\%) did not complete MATH 082
- 894 (41\%) enrolled in MATH 083
- 396 (18\%) successfully completed MATH 083
- 498 (23\%) did not complete MATH 083

Students enrolled in MATH 082/083 Combined Course Pair sections

- 445 students registered for MATH 082
  - 281 (63\%) passed MATH 082
  - 164 (37\%) did not complete MATH 082
- 281 (63\%) enrolled in MATH 083
- 281 (63\%) successfully completed MATH 083
- 107 (24\%) did not complete MATH 083
Students enrolled in MATH 083 for Spring 2010 semester (any credit course)

- 1871 students registered for MATH 083
  - 934 (50%) passed MATH 083
  - 937 (50%) did not complete MATH 083
- 620 (33%) enrolled in a credit course
  - 314 (17%) did not enroll in a credit course
- 512 (27%) successfully completed credit course
  - 108 (6%) did not complete a credit course

Students enrolled in MATH 083/163 Combined Course Pair section

- 520 students registered for MATH 083
  - 323 (62%) passed MATH 083
    - 197 (38%) did not complete MATH 083
- 323 (62%) enrolled in a credit course
  - 0 (0%) did not enroll in a credit course
- 262 (50%) successfully completed credit course
  - 61 (12%) did not complete a credit course
Fall 2012:
MATH 083: 53.3%
MATH 135: 65.3%
083/135: 78.9%
The New Accelerated Developmental Education

Business as usual
- “Work your way up”
- Minimal expectations
- Complex with many levels
- Addresses discipline skills
- No discrete cohorts
- Teacher-based
- Remedial course completion is goal

Acceleration Mode
- Start at the top
- High expectations
- Simple path to credit courses
- Addresses whole learner
- Cohort - based
- Student-based
- Credit and degree attainment goal
Six Lessons

1. Find a cheerleader(s); then develop a coalition
2. Design should encompass scalability
3. Start small, plan large
4. Don’t shortchange faculty development
5. Standardize with creativity
6. Let your research show your story
Your Comments and Questions?
Thank You!

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- Sung-Woo Cho: sc2536@columbia.edu