Education Level Workshop: Community College

Research Update on ESL and AB 705
from the RP Group

Craig Hayward, Bakersfield College + the RP Group
Kathy Wada, Cypress College
Outline

• History of the Multiple Measures Assessment Project (MMAP)
  – Early evaluation results
  – Pivot to AB 705 Default Placement Rules
• New research
• Guidance
• Discussion
Multiple Measures Assessment Project

- Ongoing, multiple year collaborative effort of CCCCO, Common Assessment Initiative (CAI), RP Group, Cal-PASS Plus (Educational Results Partnership & San Joaquin Delta College), and now >90 CCC pilot colleges

- Original, “MMAP Classic” focus: Identify, analyze, & validate multiple measures data (including HS transcript data, non cognitive variable data, & self-report HS transcript data)

- Focus on predictive validity (success in course) using classification and regression tree models (robust to missing data, non-linear effects, and interactions)
  - Conservative approach: target ≥70% success rate in college level course

- Engage pilot colleges to conduct local replications, test models and pilot use in placement, and provide feedback

bit.ly/MMAP2017
Why high school grades?

• AB 705 requires colleges to use one or more of the following when placing students into courses in math and English:
  – High School GPA
  – High School Coursework (which courses, how far you’ve gotten)
  – High School Grades

• If official grades are unavailable, colleges may use self reported grades or guided placement.

• Why is the use of high school grades required?
  – Everyplace anyone looks they are the strongest, most reliable predictor of college performance, including students’ first courses in English and math
Early Evaluation Results
Access to transfer-level courses has expanded more rapidly in English than in math

![Chart showing percent of first-time English and math students, respectively, starting directly in transfer-level English and math courses from 2009-10 to 2016-17.]

FIGURE 2
Increased access to transfer-level math is strongly linked to increases in throughput

FIGURE 3
Increased access to transfer-level English lead to increases in throughput

The Models
Data Set for the Models

- CCC students enrolled in an English, Math, Reading or ESL class with matching high school data in Cal-PASS Plus
  - ≈1 M cases for Math & English; ≈200k for Reading & ESL
- Bulk of first CCC enrollments from 2008 through 2014
- Rules used students with 4 years of high school data (≈25% of sample)
- Used rpart, a machine learning algorithm, to create decision trees
- Local researchers trained to replicate models locally
- MMAP code
  - http://rpgroup.org/Portals/0/Documents/Projects/MultipleMeasures/DecisionRule
- R4IR Tutorial https://drive.google.com/drive/folders/0Bz-jqwGzLQjJajA5YUlxUjdETzA?usp=sharing
Who is an ESL Student?

• High school ELL designation or ELD course history AND taking community college ESL (included in MMAP ESL analysis)
• High school ELL designation or ELD course history but NOT taking community college ESL (included in MMAP English analysis)
• Non-native speakers with no high school information available AND taking community college ESL (not included in MMAP)
• Non-native speakers with no high school information available but NOT taking community college ESL (not included in MMAP)
<table>
<thead>
<tr>
<th>Description</th>
<th>High Schools</th>
<th>Colleges</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total ESL file</td>
<td>1,492</td>
<td>107</td>
<td>185,033</td>
</tr>
<tr>
<td>Top level transfer complete high school transcripts</td>
<td>485</td>
<td>41</td>
<td>4,901</td>
</tr>
<tr>
<td>Top level 1 level below transfer complete high school transcripts</td>
<td>289</td>
<td>30</td>
<td>2,768</td>
</tr>
<tr>
<td>Top level 2+ levels below transfer complete high school transcripts</td>
<td>253</td>
<td>27</td>
<td>1,026</td>
</tr>
</tbody>
</table>

- About 25% of students had 4 years of high school transcripts and were used for building the decision rules
High School to Community College
ESL Transition in MMAP Data

- 50,851 ESL students with complete high school transcripts:
  - 5,026 (10%) took an ESL class as their last high school language arts course.
  - 3,682 (13%) took an ESL class as their first college language arts course.
  - 465 (1%) had a record of taking any non-credit ESL course at a community college.
Variables Explored in the Models

- High School Unweighted Cumulative GPA
- Grades in high school courses
- CST scores
- Advanced Placement course taking
- Taking higher level courses (math)
- Delay between HS and CCC (math)
- HS English types (expository, remedial, ESL)
- HS Math level (Elem Algebra, Integrated Algebra, Pre-Calculus)
How to Read an ESL Decision Tree

Figure 1. Interpreting One-Level Below Transfer Level ESL - L1 DM Decision Tree

Root Node

hs_11_gpa >= 2.7

no

0.54
61%

yes

0.74
39%

Node 1

Terminal node/leaf

Probability of success

Percent of students in leaf
## Criteria for Decision Trees

<table>
<thead>
<tr>
<th>Level Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer-Level (L0) criterion</td>
<td>0.70</td>
</tr>
<tr>
<td>One-Level Below Transfer (L1) criterion</td>
<td>0.65</td>
</tr>
<tr>
<td>Two-Levels Below Transfer Level (L2) criterion</td>
<td>0.60</td>
</tr>
<tr>
<td>Three-Levels Below Transfer Level (L3) criterion</td>
<td>0.55</td>
</tr>
</tbody>
</table>
## ESL Rule Set Examples

<table>
<thead>
<tr>
<th>Top Level Course</th>
<th>Direct Matriculant</th>
<th>Non-Direct Matriculant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer Level</td>
<td>HS 11 GPA ≥ 2.5</td>
<td>HS 12 GPA ≥ 2.4</td>
</tr>
<tr>
<td>One Level Below Transfer</td>
<td>HS 11 GPA ≥ 2.7</td>
<td>HS 12 GPA ≥ 2.6</td>
</tr>
<tr>
<td>Two Levels + Below Transfer</td>
<td>HS 11 GPA ≥ 2.8</td>
<td>HS 12 GPA ≥ 2.9 OR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>English CST ≥ 292</td>
</tr>
<tr>
<td>Transfer Level English</td>
<td>HS 11 GPA ≥ 2.6</td>
<td>HS 12 GPA ≥ 2.6</td>
</tr>
<tr>
<td>Level</td>
<td>Direct Matriculants (Through 11th grade)</td>
<td>Non-Direct Matriculants</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Transfer level</td>
<td>High school 11th grade cumulative GPA of 2.5 or better</td>
<td>High school 12th grade cumulative GPA of 2.4 or better</td>
</tr>
<tr>
<td>One-level below</td>
<td>High school 11th grade cumulative GPA of 1.5 or better</td>
<td>High school 12th grade cumulative GPA of 2.0 or better</td>
</tr>
<tr>
<td>Two-levels below</td>
<td>High school 11th grade cumulative GPA of 1.3 or better</td>
<td>High school 12th grade cumulative GPA of 1.8 or better</td>
</tr>
<tr>
<td>Three-levels below</td>
<td>Placement via test or other locally determined measure</td>
<td>Placement via test or other locally determined measure</td>
</tr>
<tr>
<td>Four-levels below</td>
<td>Placement via test or other locally determined measure</td>
<td>Placement via test or other locally determined measure</td>
</tr>
<tr>
<td>Five-levels below</td>
<td>Everyone else</td>
<td>Everyone else</td>
</tr>
<tr>
<td>Colleges</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td>Students</td>
<td>4,914</td>
<td>4,914</td>
</tr>
<tr>
<td>Level</td>
<td>Direct Matriculants (Through 11th grade)</td>
<td>Non-Direct Matriculants</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>One-level below</td>
<td>High school 11th grade cumulative GPA of 2.7 or better</td>
<td>High school 12th grade cumulative GPA of 2.6 or better</td>
</tr>
<tr>
<td>Two-levels below</td>
<td>High school 11th grade cumulative GPA of 2.2 or better</td>
<td>High school 12th grade cumulative GPA of 2.4 or better</td>
</tr>
<tr>
<td>Three-levels below</td>
<td>Remedial or Non-remedial English course in 9th, 10th, or 11th grade with a C+ or better</td>
<td>High school 12th grade cumulative GPA of 1.5 or better</td>
</tr>
<tr>
<td>Four-levels below</td>
<td>Placement via test or other locally determined measure</td>
<td>Placement via test or other locally determined measure</td>
</tr>
<tr>
<td>Five-levels below</td>
<td>Everyone else</td>
<td>Everyone else</td>
</tr>
<tr>
<td>Colleges</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Students</td>
<td>2,752</td>
<td>2,752</td>
</tr>
</tbody>
</table>

Note: placement via test or other locally determined measure = too few cases available to grow decision trees or rules.

¹ Criterion = 0.59
<table>
<thead>
<tr>
<th>Level</th>
<th>Direct Matriculants (Through 11th grade)</th>
<th>Non-Direct Matriculants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-levels below</td>
<td>High school 11th grade cumulative GPA of 2.8 or better</td>
<td>High school 12th grade cumulative GPA of 2.9 or better OR English CST score of 292 or higher</td>
</tr>
<tr>
<td>Three-levels below</td>
<td>High school 11th grade cumulative GPA of 2.3 or better</td>
<td>Placement via test or other locally determined measure*</td>
</tr>
<tr>
<td>Four-levels below</td>
<td>High school 11th grade cumulative GPA of 1.8 or better</td>
<td>Placement via test or other locally determined measure**</td>
</tr>
<tr>
<td>Five-levels below</td>
<td>Everyone else</td>
<td>Everyone else</td>
</tr>
<tr>
<td>Colleges</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Students</td>
<td>1,014</td>
<td>1,014</td>
</tr>
</tbody>
</table>

* L2 C ESL NDM rule that was previously listed was removed due to inability to replicate in later iteration.  
** L2 D ESL NDM rule that was previously listed was removed due to inability to replicate in later iteration.
ESL Findings

• Most HS ESL go into CC English (86%)
• Most Credit ESL students do not come from Non-Credit (1%)
• High School origin does not generally relate to college outcomes
• 70% of those with declared Ed Goals want to attain a Bachelor’s degree
## Placement/Support Recommendations: English

<table>
<thead>
<tr>
<th>High School Performance Metrics</th>
<th>Recommended AB 705 Placement for English</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSGPA ≥ 2.6</td>
<td><strong>Transfer-Level English Composition</strong></td>
</tr>
<tr>
<td></td>
<td>No additional academic or concurrent support required</td>
</tr>
<tr>
<td>HSGPA 1.9 to 2.6</td>
<td><strong>Transfer-Level English Composition</strong></td>
</tr>
<tr>
<td></td>
<td>Additional academic and concurrent support recommended</td>
</tr>
<tr>
<td>HSGPA &lt; 1.9</td>
<td><strong>Transfer-Level English Composition</strong></td>
</tr>
<tr>
<td></td>
<td>Additional academic and concurrent support strongly recommended</td>
</tr>
</tbody>
</table>

For more information, see the July, 2018 AB705 Implementation Memo at [https://assessment.cccco.edu/resources/](https://assessment.cccco.edu/resources/)
When students who are ESL in high school go into mainstream English at the community college, where do they start?

High School ESL students' starting English level

- Transfer-level: 15%
- One-level below: 31%
- Two levels below: 35%
- Three levels below: 15%
- Four levels below: 4%

The RP Group
Pivot to AB 705

Developing compliant default placement rules
A Brief History of AB 705’s Origins and Development

- STEPS started with 14 colleges
- MMAP – started in 2014-15 with the 14 STEPS colleges
- CAI and Multiple Measures Work Group formed
- MMAP decision rules guidance released – over 90 colleges eventually join pilot
- AB 705 passed (October, 2017)
- AB 705 Implementation Committee formed and an ESL subcommittee formed
- Selection bias question: Are students with a certain GPA who were placed into a course representative of all students with that GPA, including those not so placed?
- RP Group adjusted predicted pass rates for the AB 705 Implementation Committee
- RP Group recommendations incorporated into CCCC O guidance memos on English and math
- AB 705 Implementation Committee and ESL subcommittees continue to meet to provide additional guidance
Adapting MMAP to AB 705

• MMAP decision trees were based on identifying students who were highly likely to be successful
  – At least 70% probability of success in transfer-level

• Now, students can only be placed below transfer-level if:
  – They are highly unlikely to succeed at the transfer-level class
  – AND
  – Developmental education maximizes probability of successful completion of transfer-level coursework in one year.
What about everyone else who isn’t 70%+ likely to succeed in transfer-level?
What maximizes their transfer-level throughput?

• Can we identify any students more likely to complete transfer-level English or Math if they start in developmental education?
  —Let’s look at the students least likely to succeed based on their HS performance
Guidance
Instruction in English as a second language (ESL) is distinct from remediation in English. Students enrolled in ESL credit coursework are foreign language learners who require additional language training in English, require support to successfully complete degree and transfer requirements in English, or require both of the above.

Colleges shall use evidence-based multiple measures for placing students into ESL coursework. For those students placed into credit ESL coursework, their placement should maximize the probability that they will complete degree and transfer requirements in English within three years.

Under AB 705, a student enrolled in ESL instruction will maximize the probability that the student will enter and complete degree and transfer requirements in English within three years.

Expanded FAQ document in December 2018

AB 1805

• AB 1805 (Irwin)
  – “(a) (1) Inform students of their rights to access transfer-level coursework and academic credit English as a second language (ESL) coursework, and of the multiple measures placement policies developed by the community college, as provided in Section 78213.”
ESL Research Projects
Entering the Sequence from High School

Throughput of HS ESL students by path into Language Arts

- Mainstream English: 18.1%
- English first, then ESL: 17.5%
- ESL first: 15.9%
MMAP Research

Average ESL placement depth and TLE throughput

\[ y = 3.9905x - 3.3114 \]

\[ R^2 = 0.1911 \]
What did MMAP disaggregation of the student body show?

• There were no identifiable groups of students within the timeframe of this study who completed a transfer-level course at a higher rate when placed into developmental education than if placed directly into transfer-level.
  – This pattern holds by ethnicity, gender, EOPS and DSPS status, ELL status in high school, and Pell-eligible students as well
A Cavalcade of Research

• The RP Group
  – Interviews with high and low throughput colleges

• The Public Policy Institute of California
  – Students 3x more likely to enroll in transfer level English if they start 1, 2 or 3 levels below vs. 4, 5, or 6 levels below

• New MMAP research
  – Identify high and low TLE throughput colleges
  – Updated data, expanded focus on non-credit and students without high school data
Guidance
Per the July ESL Guidance

- Align your ESL curriculum to feed into TLE
- Integrate your ESL curriculum
- Develop CSU GE Area C2 articulation
- Consider developing TLE for ESL students
  - Could be an ESL-specific corequisite
AB 705 CREDIT ESL IMPLEMENTATION TIMELINE

Spring 2018
- Review the legal requirements of AB 705
- Identify stakeholders among credit ESL teaching and counseling faculty, assessment, and institutional research
- Examine CalPSS data for English proficiency status indicators
- Collaborate with English Composition and/or Reading faculty to ensure smooth transition from credit ESL to Freshman Composition
- Collaborate with Research (if possible) to determine baseline percentages of successful transition into and through Freshman Composition

Fall 2018
- Engage credit ESL teaching and counseling faculty, assessment, and institutional research
- ESL faculty should review credit ESL and/or noncredit ESL (as applicable) curriculum to determine sequence aligned to AB 705 requirements
- Review MMAP placement results for credit ESL (if available)
- Share best-practices gathered by the RP group, CATESOL, CAP, and other partners

Spring 2019
- Begin exploring an integrated credit ESL curriculum with successful completion of the highest credit academic ESL course placing students directly into Freshman Composition
- Continue to collaborate with English Composition and/or Reading faculty
- Begin exploring co-requisite credit ESL courses paired with Freshman Composition for ELLs with most advanced language proficiency
- Submit/approve locally developed credit ESL curriculum changes for approval as needed
- Engage in professional learning to support integration of credit ESL curriculum and direct pathway from credit ESL to Freshman Composition

Fall 2019
- Revise local assessment and placement practices to use multiple measures, including high school information when available to identify students in need of credit academic ESL
- Submit/approve locally developed credit ESL curriculum changes for approval as needed

Spring 2020
- Submit/Approve locally developed credit ESL curriculum
- Connect assessment and new placement rules with curriculum
- Publish relevant information in college materials

Fall 2020
Full compliance with AB 705 requirements for credit ESL

Guided Self-Placement
Guided Self-Placement (GSP)

- One of the areas of most pressing interest and fervid development.
- We’ll take a look at some of the work that is being done in this area.
# Who needs GSP? ESL Student Typologies

<table>
<thead>
<tr>
<th>Students</th>
<th>Definitions</th>
</tr>
</thead>
</table>
| High School Graduates | • Many immigrate during high school  
                        • May or may not have been born in the U.S.  
                        • May or may not have studied English before U.S. arrival  
                        • Often orally proficient – “ear learners”  
                        • May have various HS years of experience  |
| International Students | • Born and raised outside the U.S.  
                          • Studied English in EFL settings  
                          • Come to U.S. on a foreign student visa for studying purposes  
                          • Some return to their country once they have completed their studies  
                          • Often grammar learners/low oral skills  |
| Adult Learners    | • Includes recent and long-time residents or non-residents  
                    • Some have advanced degrees, whereas others are illiterate in their native language  
                    • Usually have plans to stay in the U.S.  
                    • Various educational goals  |
Did you attend a high school in the United States for 3 or more years?

Is English your native (primary) language?

I sometimes have trouble expressing myself in English.

Did your high school experience include any English as a Second Language (ESL) or English Language Development (ELD) coursework?

3 out of 4 randomized ESL collocation questions correct (see separate sheet)

English Placement
Test-out options

ESL Placement
Test-out options
<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficient</td>
<td>Ability to speak and write English <em>with ease and fluency</em> similar to your</td>
</tr>
<tr>
<td></td>
<td>native or mother tongue</td>
</tr>
<tr>
<td>Advanced</td>
<td>Ability to speak and write in English about a range of topics with a <em>wide</em></td>
</tr>
<tr>
<td></td>
<td>range of vocabulary in social and academic settings</td>
</tr>
<tr>
<td>Low Advanced</td>
<td>Ability to speak and write in English about a range of topics with <em>limited</em></td>
</tr>
<tr>
<td></td>
<td>vocabulary in social and academic settings</td>
</tr>
<tr>
<td>High Intermediate</td>
<td>Ability to speak and write English about a <em>limited range of topics</em> with</td>
</tr>
<tr>
<td></td>
<td>limited vocabulary in social and travel settings</td>
</tr>
<tr>
<td>Low Intermediate</td>
<td>Ability to speak and write <em>basic English</em> to communicate in practical</td>
</tr>
<tr>
<td></td>
<td>everyday situations</td>
</tr>
<tr>
<td>High Beginner</td>
<td>Ability to speak and understand English to <em>meet basic needs</em></td>
</tr>
<tr>
<td>Low Beginner</td>
<td>Ability to speak and understand <em>basic greetings and simple words in English</em></td>
</tr>
</tbody>
</table>
Questions for GSP

IVC’s decision tree research found the following four questions to be most potent:

• Age started learning English
• Used a translation sheet
• Frequency of reading a book in English
• Self-Placement via rubric

Contact Loris Fagioli (lfagioli@ivc.edu) to learn more about participating in the ESL GSP survey.
Further Research Questions

• What placement maximizes TLE throughput for ESL students within three years?
• Which students should be directed to TLE and which to ESL coursework?
• What is an effective Guided Self-Placement process?
Checking for what would maximize likelihood of successful completion of transfer-level course

Compare:

A. The success rate of students with similar backgrounds (e.g., HS GPA) if placed directly into transfer-level course

Vs.

B. Rate of successful completion of transfer-level course within three years (AB705 ESL) for students who begin at other levels (e.g., one, two, or three levels below transfer)
   
   Note: When assessing success from levels below, include in your group (i.e., in the denominator) all those who begin the sequence at that level below, not just those who actually attempt transfer-level.
MMAP Research Team

Craig Hayward  
The RP Group  
chayward@rpgroup.org

Terrence Willett  
The RP Group  
twillett@rpgroup.org

Mallory Newell  
The RP Group  
newellmallory@deanza.edu

Kristen Fong  
The RP Group  
kfong@rpgroup.org

Rachel Baker  
UC Irvine  
rachelbb@uci.edu

Nathan Pellegrin  
The RP Group  
nathan.pellegrin@gmail.com

Peter Bahr  
University of Michigan  
prbahr@umich.edu

Loris Fagioli (Phase II researcher)  
IVC  
lfagioli@ivc.edu

John Hetts  
Educational Results Partnership  
jhetts@edresults.org

Ken Sorey  
Educational Results Partnership  
ken@edresults.org

Daniel Lamoree  
Educational Results Partnership  
dlamoree@edresults.org