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CONFERENCE**

**July 11, 2013
Tinley Park, Illinois**

Early Intervention and Success Strategies in Mathematics

Southern Illinois University
Carbondale

Presentation Outline

- Definition of Early Intervention
- How Early is “Early”
- SIU Placement System
- Initial contact with students
- Early Intervention Metric
- Offering Students a Viable Alternative
- Does Early Intervention identify students in trouble?
- Conclusions and next steps

Early Intervention - Definition

- An “Early Intervention System” requires:
 - Collection of student potential and performance data
 - Early enough in a given semester
 - So that various interventions have an optimal chance to significantly improve a student’s probability to succeed.

How Early is “Early”

- Early Intervention must balance two constraints:
 - **Late enough** so that reliable data can be collected on student performance and potential
 - **Early enough** so that student success probability is significantly improved
- At SIU, the Early Intervention system is completed by **Week 4 of the semester.**
 - This leaves 12 weeks of the semester for intervention efforts to work.

SIU Math Placement System

- Three-level test in MyLabPlus (Pearson)
 - Test 1 – Intermediate Algebra
 - Test 2 – College Algebra
 - Test 3 – Pre-calculus and Calculus
- On-line and Unproctored
- ACT scores also permit access

- In-class proctored version also given on Day 2 of class

Initial Letter with Placement Information (Week 1)

MATH PLACEMENT INFORMATION

Dear 108 Student,

Let me welcome you once again to Southern Illinois University Carbondale! We look forward to working with you this Spring as your educational partner as you begin to fulfill your academic goals. One critical element of academic success is beginning your university career in the proper Math class. This is why we have implemented an on-line Math placement system that you may have already encountered.

First, you want to make sure you are enrolled in the appropriate math course for your major. Please use the chart on the reverse side to guide you. **Note that Math 101 is the required Math course for most majors in the Liberal or Fine Arts, or for majors in Mass Communication and many Education majors. In other words, if you plan to study a non-technical major, Math 101 is generally the correct Math course for you to take.**

Next, making sure that you are correctly placed in a Math course that you are **prepared** to take is critical for your success. This is one reason why you took another version of the test in class this Spring, since taking tests in a classroom setting is a different experience.

Below we have provided you with placement information, including your ACT math score, on-line placement score, in-class placement score. In addition, a prerequisite status of "fail" means that some vital information is missing from your record. If this is the case it is essential that you work with your advisor to supply the missing information. Please use all of this important information to make sure you are in the class that offers you with the best chance of success.

If you feel that you need to switch classes, you can contact me at the e-mail address below, or email our Undergraduate Programs Director, Dr. Mary Wright at mwright@math.siu.edu, or call her at 453-6582. Her office is in Neckers 357.

Best wishes for a successful Spring semester!

Sincerely,

Dr. Gregory Budzban
Professor and Chair
gbudzban@siu.edu

Math 108	Student Name	Dawg Tag	
Placement Category	Required	Your Score	Warning
ACT Math Score	24	«A02_High_Score»	«ACTWarning»
On-line Placement Test	12	«MPL2_Score»	«OnlineWarning»
In-Class Placement Test	12	«Inclass_Pretest»	«InclassWarning»
Pre-requisite Status	Completed	«PreReq_Msg»	«PrereqWarning»



Early Intervention Metric

➤ Week 3

➤ For all students in Math 107-108 (Intermediate Algebra/College Algebra)

- A. $25\% * (\text{In-class pretest}) + 25\% * (\text{HW}) + 50\% * (\text{Test 1})$
- B. $25\% * (\text{HW}) + 75\% * (\text{Test 1})$

The larger of (A) and (B) is their “intervention score”

- RED: 0% to 55%
 - ORANGE: 56% to 65%
 - YELLOW: 65% to 75%
 - GREEN: 76% to 100%
-
- Students also receive an intervention score in week 7 and week 11 that is simply their course grade at that time.
 - All of this data is given to the students and to colleges and advising staff.

Offering Students a Viable Alternative Requires Full-Campus Coordination

- Problems to solve:
 - By the time you have adequate evaluation data, the normal two-week drop/add period is over.
 - Students won't move to new classes due to financial issues.
- Solution:
 - Working with the Registrar, Financial Aid, and Student Advising Offices a procedure was developed.
 - Only Math -identified students can utilize procedure to drop 107/108 and add 101 (Liberal Arts Math)

Offering Students a Viable Alternative Requires Full-Campus Coordination

Dates for Spring 2013:

- First (paper) exam for 107/108: Week 3, Wed, 1/30
- **Math evaluates students-collects data:** Week 3, Thursday, 1/31
- Math sends lists (Red/Orange) to **Deans/Colleges:** Week 3 Fri, 2/1

- **Unit Advisors** contact/meet students, fill out Course Request Forms (CRFs), send to Registrar: Friday 2/1-Thursday 2/7

- CRFs due to **Registrar:** Week 4, Thur, 2/7, 2:00 PM
- **Registrar's office process all CRFs:** Week 4, Thur, 2/7, 4:30 PM
- Class lists updated: Week 4, Fri, 2/8, 7:30 AM
- **Math contacts students:** Week 4, Fri, 2/8

- Students start in Math: Week 5, Mon, 2/11

Success statistics in Success course

- Spring 2013 was the first attempt at this procedure
 - Only 38 (out of roughly 300 eligible) students took advantage of the offer.
 - 35 students completed the 12 week course (hybrid: on-line lectures and two lab days a week)
 - $34/35 = 97\%$ received credit (D or better)
 - $21/35 = 60\%$ received C or better.

Does the Early Intervention Metric Correctly Identify Students?

- **Intermediate Algebra** : Success rate of Week 3 metric (C or better)
 - Red/Orange 22/86 (25.6%)
 - Yellow 5/12 (41.6%)
 - Green 54/64 (84.4%)
- **College Algebra** : Success rate of Week 3 metric (C or better)
 - Red/Orange 31/155 (20%)
 - Yellow 18/40 (45%)
 - Green 142/193 (73.6%)

Predictive Value of Week 7 Grade

- **Intermediate Algebra** : Success rate of Week 7 metric (C or better)
 - Red/Orange 14/73 (19.2%)
 - Yellow 26/37 (70.3%)
 - Green 41/43 (95.3%)
- **College Algebra** : Success rate of Week 7 metric (C or better)
 - Red/Orange 20/169 (11.8%)
 - Yellow 49/74 (66.2%)
 - Green 126/135 (93.3%)

Conclusions and Next Steps

- Appropriate early intervention metrics can be extremely useful for identifying students in trouble.
- “Aggressive” advising is needed to convince more students to take advantage of “opportunities for success”.
- Additional pathways to success must be created for STEM majors that include intensive support systems.