



Using the Personal Study Plan (PSP) as a Calculus I Preparation Tool

Presentation for WAUG 2011
Jenn Whitfield - Texas A&M University

jwhitfld@math.tamu.edu



These slides are at <http://www.math.tamu.edu/~jwhitfld>

TAMU Math Placement History

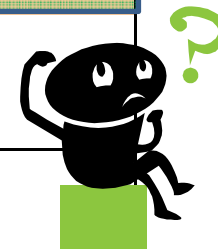
- 2003 – 2008
 - Texas A&M College of Engineering awarded NSF STEP 1A grant (NSF Award #0336591). Goal was to improve first-year retention in engineering by integrating and improving first-year curricula. By the end of that project, first-year retention had improved 6.5% (~ 120 additional engineering graduates).
 - It became clear at the end of this project that efforts to further increase retention of STEM graduates should focus on improving success in mathematics.

How to Increase Success in Math?

- A product of this STEP 1A project was the Calculus Readiness Assessment instrument (now known as Math Placement Exam MPE)
 - 33-question online, timed test that proved to be extremely effective in identifying students who are at risk of doing poorly in Calculus I and II.
- 2009 – all incoming freshmen required to take the MPE and suggestions were given on which math class they should take.

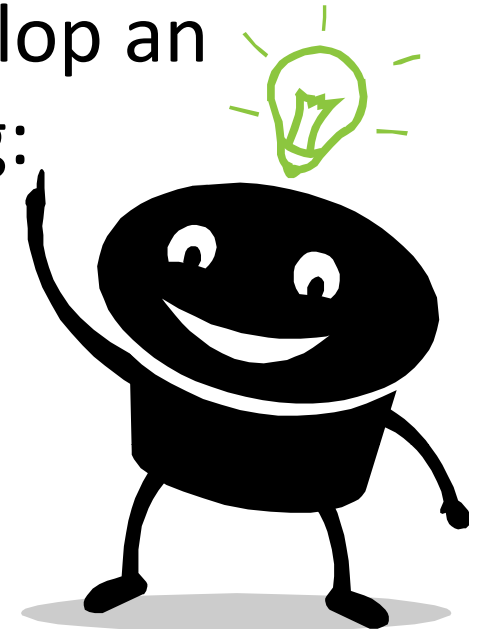
Success* rates for Math 151 students taking the placement test and completing the course - Fall 2007**

Placement test grade	Total successful students with given grade	Probability of success for given grade
33	17	1.000
32	32	0.970
31	48	0.980
30	59	0.952
29	58	0.853
28	84	0.933
27	82	0.845
26	70	0.886
25	76	0.844
24	66	0.767
23	51	0.708
22***	49	0.681
21	34	0.654
20	39	0.672
19	42	0.689
18	19	0.559
17	16	0.410
16	20	0.645
15	14	0.538
14	4	0.364



The Big Idea

- Target the “bubble students” and develop an online program that does the following:
 - Uses MPE to diagnose mathematical weaknesses
 - Delivers students a Personalized Plan that gives students opportunity to improve their individual mathematical weaknesses.
 - Assigns each student a “live” online tutor that offers support, instruction, and motivation.



We Got It!

- Students who score
 - Greater than 21 go to Calc I
 - In the range of 16-21, opportunity to take the online summer program, improve their skills and retake the MPE.
 - Less than 16 go to Precalculus



The idea goes down on paper as a STEP 1B proposal and off to the National Science Foundation.



PROPSAL FUNDED



PI's:

G. Donald Allen, Michael Pilant, Jeffrey Froyd, Sandra Nite, Don Maxwell

Constructing the Project

- STRENGTHS

- Pedagogy

- Know what to teach and how to teach
- Know the tools needed to teach

- Online Tutoring

- Capacity to hire tutors
- TAMU has license with Saba Centra so users can have “free” access to the virtual classroom.

- Creating Content

- Videos, Problems, Feedback, Solutions



Constructing the Project

- WEAKNESSES

- Delivery of Content and Assets

- How will the math questions be delivered?
- How do we handle math syntax?
- How do we link assets to problems?



- Collection and Tracking of Student Data

- Student usage time stamps?
- Recording students scores/grades.
- Displaying student progress

- Collecting money

- Management and Maintenance of Data System

Then the chocolate met the peanut butter



And a partnership began

Web**Assign**.



TEXAS A&M
UNIVERSITY

The Final Product

- WebAssign delivers, manages, and maintains PSP
- TAMU provides content
 - Precalculus text authored by TAMU faculty
 - TAMU created instructional videos
 - TAMU created PowerPoint presentations to accompany videos
 - TAMU authored problems, selected problems from Stitz/Zeigler textbook, and used WebAssign “vocabulary” to select problems.

A Tour of PPP 2e

- TAMU's [Personalized Precalculus Program](#) website.
- Tour the [WebAssign PSP](#).
- Lets view a sample online tutoring session.
 - Sledge Tutoring session 3 at 1:16.



Sample Course To Play In

- **Course Name**
 - **WAUG 2011 PSP Practice**

- **Course Key**
 - **tamu 2540 7713**

Where we want to go from here....

- Create a similar program for TAMU business math classes.
- Get the MPE into WebAssign.
- Make this program transportable, adaptable, and applicable for other institutions.
 - In progress with West Texas A&M, Texas A&M Corpus Christi, and Texas A&M Commerce.

Thank you!
Questions???



Jenn Whitfield
jwhitfld@math.tamu.edu