

Western Washington University

Mathematics Preparation of

- A) Incoming Students
- B) Teacher Education Candidates
- C) Recent Initiatives



Incoming Students

- * Success rate is falling **in all subjects** for incoming freshmen
- * Increasing rate of academic probation increased from 10% to 12% in last several years
- * Science departments (especially Chemistry) report that the lack of adequate mathematical preparation of their students is their most serious challenge – students take longer time to degree or change majors

Math Preparation

- * Students who pass AP Calculus and get credit often test into lower level algebra on the math placement exam
- * Math faculty wish that students had a better conceptual grasp of mathematics, especially algebra
- * Students enter having memorized algorithms without understanding of how to apply them

Frequently, for example

Students will complain that

$$a + b = c$$

is different from

$$a = c - b$$

“That is not the way I learned it.”

We are not kidding

* At Western math exam questions often look entirely different than the practice set questions. We always get complaints about this as students complain this is unfair and "not like high school math." Our math department reports that they have to ask exam questions that are different from the homework questions in order to determine if the students can apply the concepts they have learned to novel problems. Hence, math text books that help students understand the math concepts and processes they are using are desirable. (Steven VanderStaay, Vice Provost for Undergraduate Education)

In summary...

- * Western is dissatisfied with the mathematical preparation of incoming students
- * Even advanced students (incoming freshmen with AP credit) are unable to apply math that they should know

The Better News : Elementary Teacher Preparation

- * Elementary, Early Childhood and Special Education/Elementary successfully complete or pass out of Math 112
- * Three quarter sequence of math methods required of all
- * Elementary Education students must also take another math course in their internship as well as complete the TPA in mathematics
- * Our students do spectacularly well on TPA – two standard deviations above national average

Elementary Math Majors

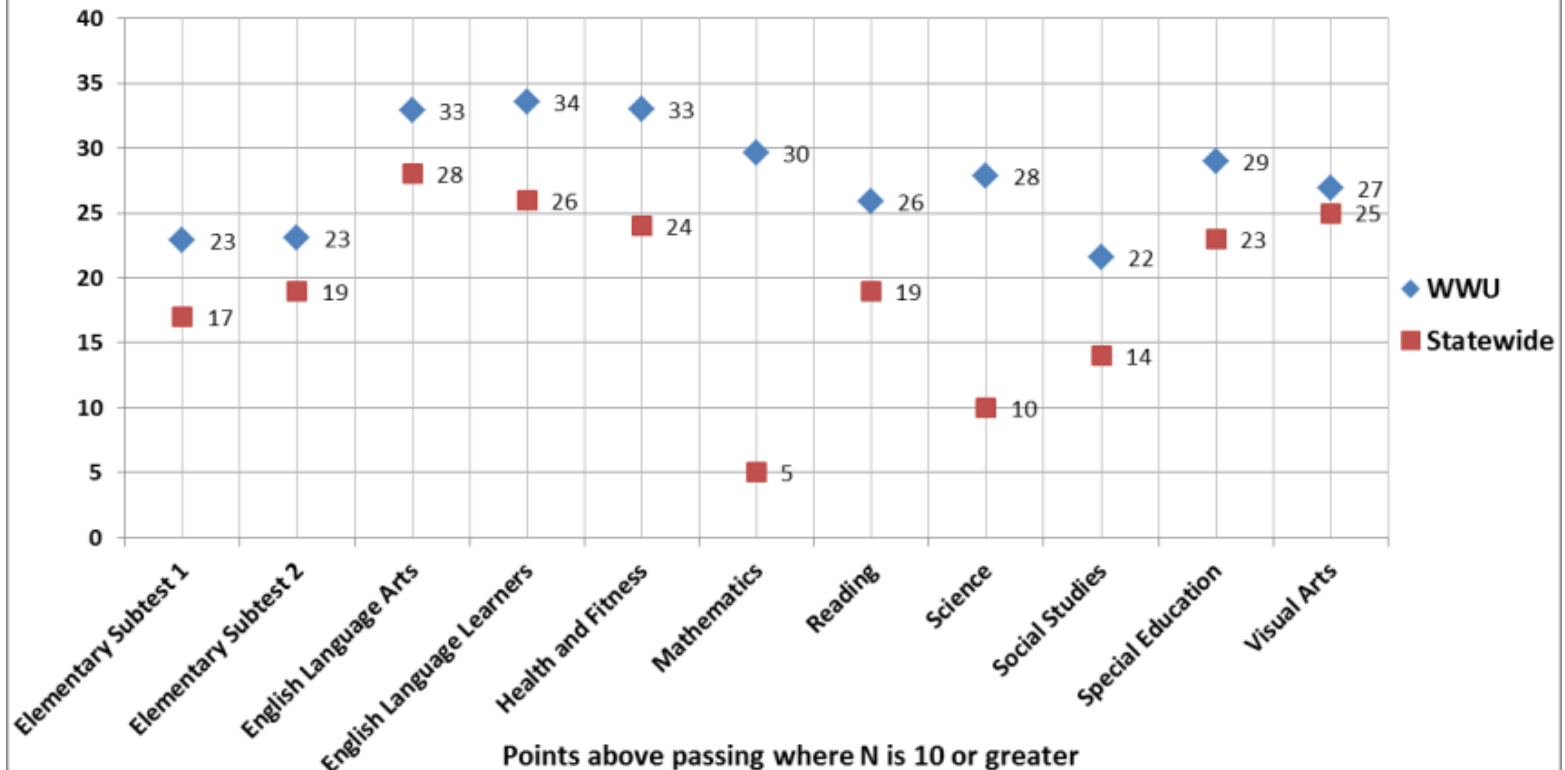
- * WWU has about 14 pre-service elementary teachers who are majoring in mathematics and another 12-15 who major in general science (and have completed advanced math sequence)
- * ELED math majors are often so well-prepared content-wise that they also earn a secondary math endorsement
- * Shameless promotional plug: Hire them.

Secondary Math

- * WWU prepares more secondary math majors than any other accredited institution in the state
- * These students are off the scale
- * Shameless plug: Hire them

Secondary WEST E Mathematics Preparation

**2009-2010 WWU Graduates WEST E Mean Scores
Points Above Passing Compared with Statewide 2010 WEST E**



Other WWU Initiatives

- * Viking Launch to help students who are entering calculus series
- * Decision Package – State Legislature
- * Professional Development – Whole School
- * Math – Science Specialist grant

QUESTIONS ?