

UNM Foundational Math

OIA/IDI Colloquium Series

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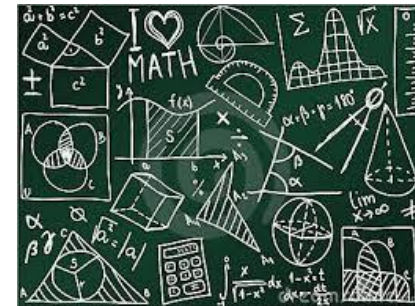
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PROGRAM GOALS

QR: *Quantitative Literacy & Self-Directed Learning (SDL)*

Quantitative Literacy

A "habit of mind," competency, and comfort in working with numerical data.



SELF-DIRECTED LEARNING

Self-Directed Learning

Academic responsibility where an individual can **recognize** one's own learning values including **maturing** in educational experiences by **expanding** a knowledge base or skills, by **pursuing** opportunities relevant to continual learning, by **initiating** curiosity, by formulating learning **goals**, and by **evaluating** one's own individual learning process.



SELF-DIRECTED LEARNING

1.Process of learning

–Able to define what to learn, plan for, conduct the learning, evaluate resources, and assess own learning

2.Learning strategies

–how students study and process information

3.Performance outcomes

–independent learning behaviors that persist and become life long .

HOW IS THE EMPORIUM MODEL DIFFERENT?

Traditional "ISM" Model	"FM" Emporium Model
All students learn at the same pace.	All students are self paced.
All students learn the same material at the same time.	Each student has a unique "learning path."
Assessment occurs at regular, pre – scheduled intervals.	Assessment is adaptive, allowed when a student has mastered a set of topics.
Students progress in material regardless of assessment results.	A student progresses only after displaying mastery through a given assessment. Review assessments are scheduled at regular intervals.

DATA COLLECTION & PROGRAM RESPONSE

FALL 2015 – SPRING 2017

***Success Navigator**

***Assessment and LEarning in Knowledge Spaces (ALEKS) reports**

***Student Mid-semester survey**

***Student End-of-semester survey**

***Instructor End-of-semester survey**

***Enrollment Data**

SUCCESS NAVIGATOR SURVEY

- **Assessment of College Readiness Strengths & Needs**
 - **Academic Skills**
 - **Commitment**
 - **Self-Management**
 - **Social Support**
- **Program Response: Mandatory (graded) assignments outside of class**
 - **Outside resource paper**
 - **2 Peer Mentor Tutor (PMT) office hours**
 - **2 Instructor office hours**
- **Program Response: Classroom discussions designed to address areas of need**

MONITORING ALEKS REPORTS

The majority of students work consistently across sections and progress at an appropriate pace.

“A tale of two extremes”

Concern	Response
Students meeting minimum benchmarks, but not working outside of class	Study plans, instructor option to add time in system to course grading scheme
Students meeting (and often exceeding) minimum time requirements but not meeting benchmarks	Study plans, intersession option, option to test at 70 topics (Week 12 & 16), discussion of Incomplete policy

MID-SEMESTER STUDENT SURVEY

All students are given an anonymous online survey. Response rates are consistently VERY low. However, themes did emerge.

Theme	Program Response
Students either love or hate ALEKS	Instructor effort to better explain rationale and function of ALEKS
Students felt isolated from classmates	Large- and Small-group discussion prompts & activities
Conflicting responses: Some students wanted more lecture, while others wanted more time in ALEKS	Mini-lectures became optional; Instructors & PMTs focus more on one-on-one support for individuals & small groups
Week 2 exam caused anxiety for some students	Week 2 exam became optional

END-OF-SEMESTER STUDENT SURVEY

All students are given an anonymous online survey. Response rates are consistently VERY low but themes did emerge.

Theme	Program Response
Some students felt rushed	Intersession offering & discussion of Incomplete policy
Students did not understand the purpose of the Success Navigator Survey	Revised wording in syllabus for future semesters, instructor meeting to clarify purpose & link to assignments
Some students would like a distance learning option	Research self-paced distance learning (<i>NOT favorable to a distance learning format at other institutions</i>)

END-OF-SEMESTER INSTRUCTOR SURVEY

All instructors complete an end-of-semester instructor survey.

Theme	Program Response
Instructors wanted more interaction with one another	Informal coffee & breakfast meetings
Discomfort with allowing students to test at 70 topics	Data collection regarding outcomes of students testing at 70 shared with instructors
Instructors want more professional development offerings	Coordinator provides email invitations to free professional development activities
Concern students are dropping out due to non-Academic matters	CEP Adviser assigned to each instructor, Department resources list

ACT Cut-scores

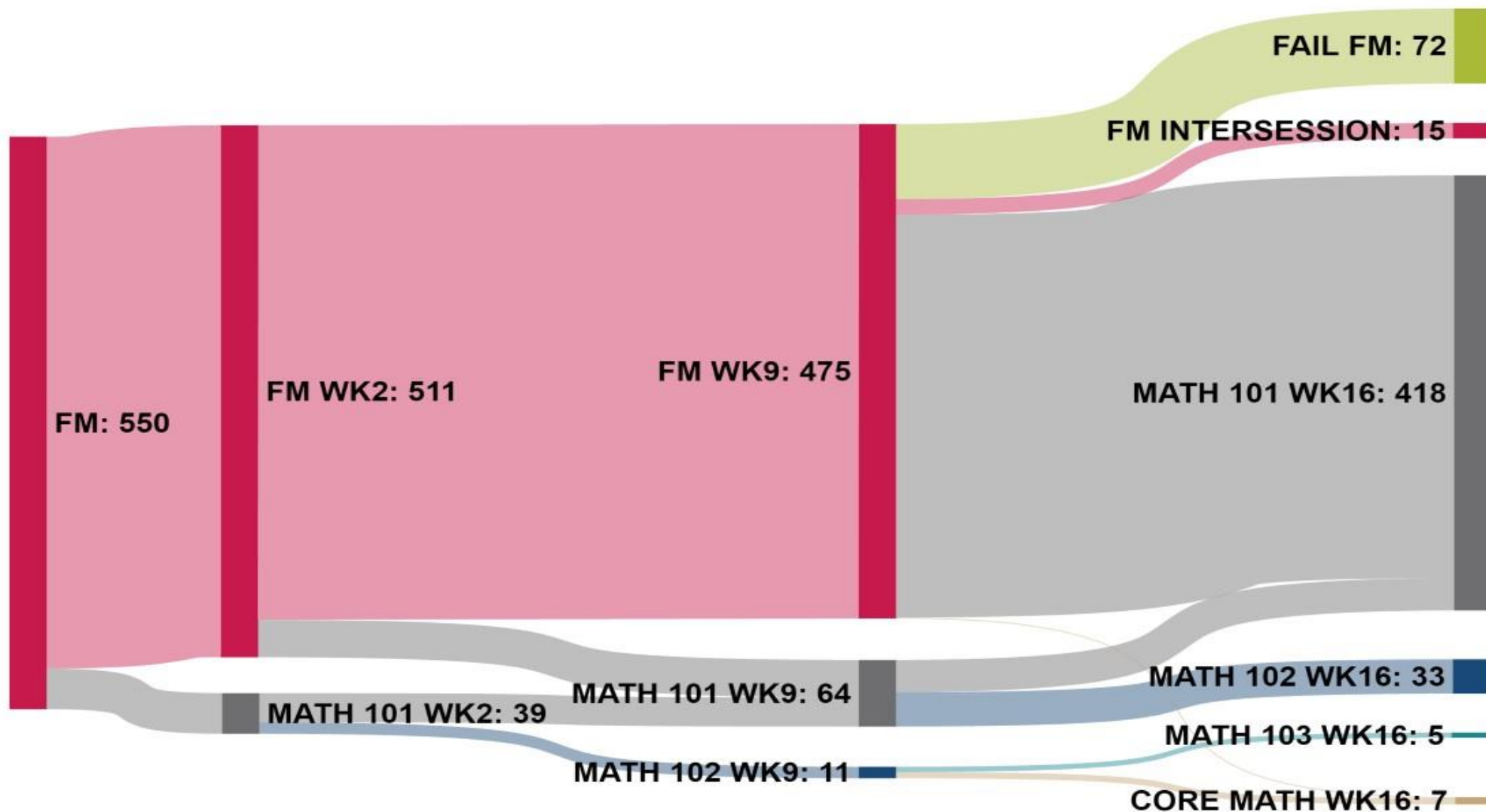
The University gradually increased the cut score for Foundational Math, allowing more students to begin in Intermediate Algebra (MaLL)

Course Name Semester)	ACT Cut Score	Number of Sections
ISM 100 (Fall 2013)	19	~38
ISM 100 (Fall 2014)	18	~30
QR (Fall 2015)	17	25
FM (Fall 2016)	17	23
FM (Fall 2017)	17*	18?

Program Response: Track math progress of ACT 18 & 19 students

Outcome: ACT 18 & 19 students are progressing at a rate comparable to ACT 20+.

STUDENT TRAJECTORY: FALL 2015



HOW DO FM PASS RATES COMPARE TO TRADITIONAL INSTRUCTION?

UNM's old model of developmental math was called "Introductory Study Mathematics," also known as ISM. This was a traditional lecture-then-test model.

Fall 2013 Pass Rates: 76%

Fall 2014 Pass Rates: 75%

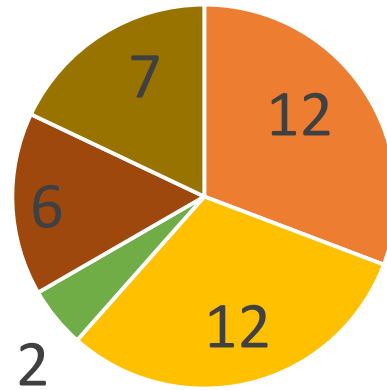
UNM now uses the "Emporium" model of math education, and pass rates are improving:

Fall 2015 Pass Rates: 86%

Fall 2016 Pass Rates: 87%

WHAT HAPPENED A YEAR LATER: STUDENTS TESTING OUT, WEEK 2

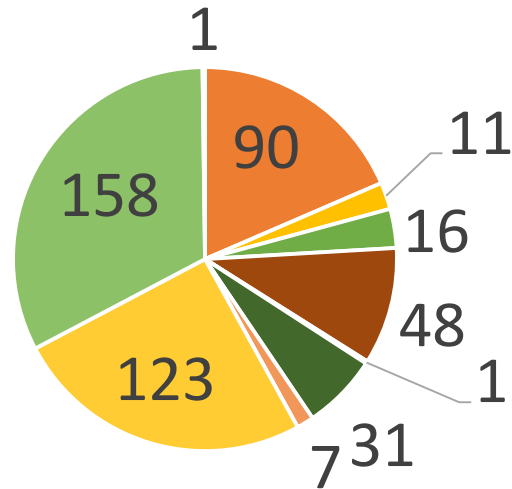
Week 2 "Test out," Fall 2015



- Passed Core Math
- Enrolled in Core Math
- Enrolled in MaLL (101 & 102)
- Enrolled at UNM, not taking Math
- Not enrolled at UNM

WHAT HAPPENED A YEAR LATER: STUDENTS SPENDING 3-16 WEEKS IN FM

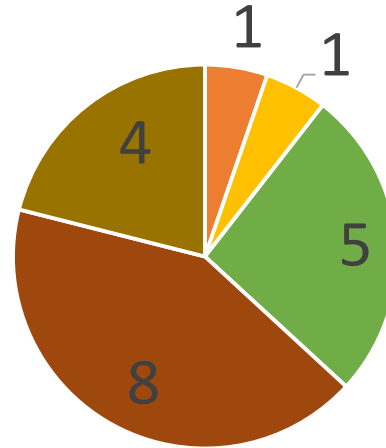
Week 2-16 Students, Fall 2015



- Enrolled in Core Math
 Math 101
- Math 101 & 102
 Math 102
- 102 & 103
 Math 103
- Repeat FM
 At UNM, No Math
- Not at UNM
 UNM Gallup

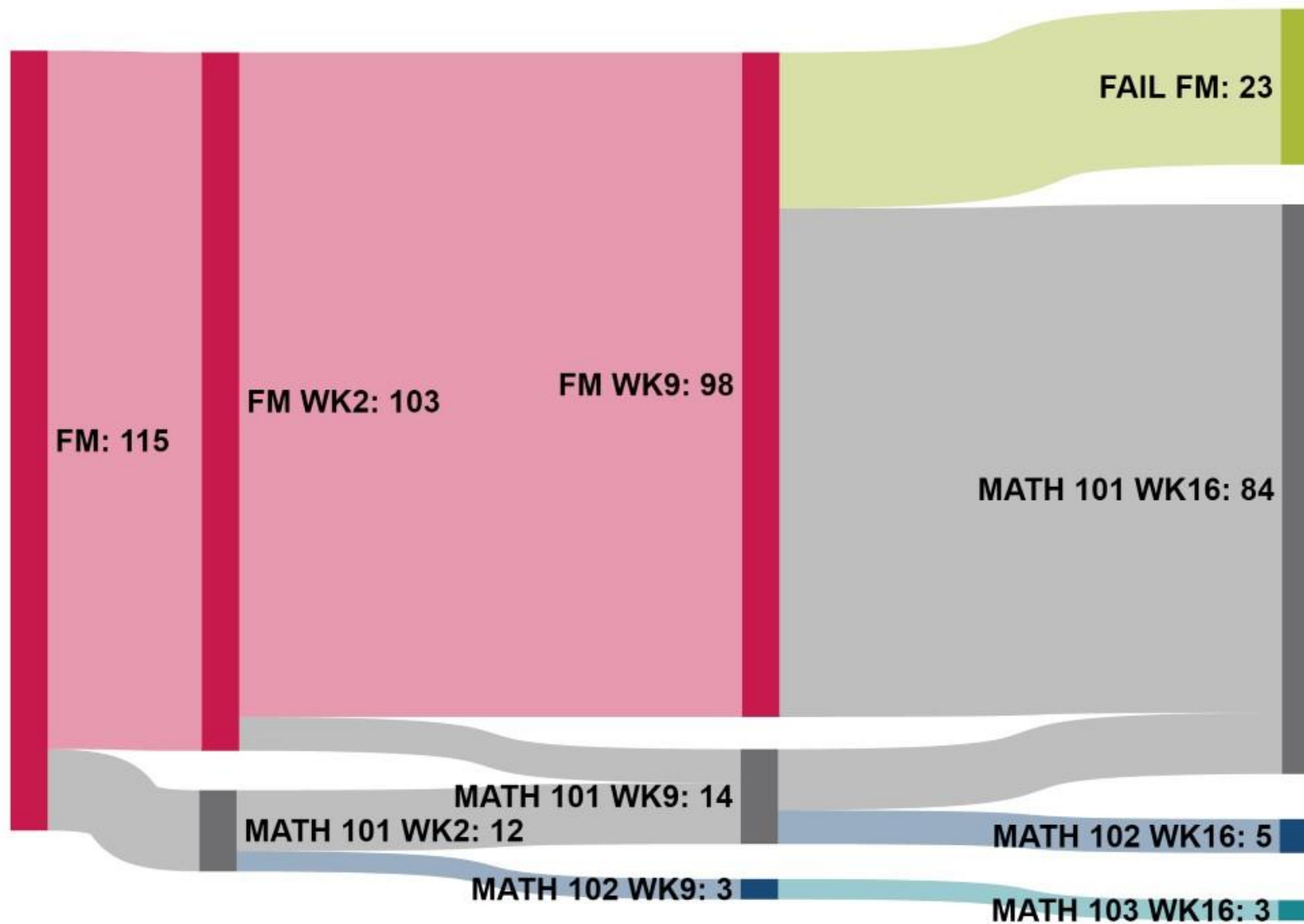
WHAT HAPPENED A YEAR LATER: FALL 2015 INTERSESSION STUDENTS

Intersession Students, Fall 2015



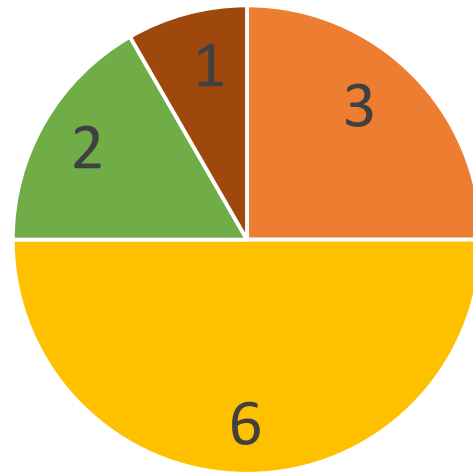
- Passed Core Math
- Enrolled in Core Math
- Enrolled in MaLL
- Enrolled at UNM, not taking Math
- Not enrolled at UNM

WHAT HAPPENED: SPRING 2016



WHAT HAPPENED A YEAR LATER: STUDENTS TESTING OUT, WEEK 2

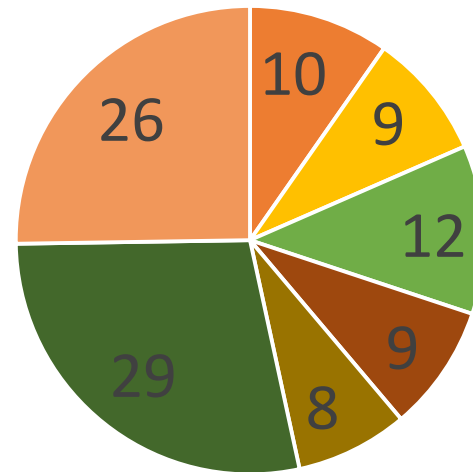
Week 2 "Test out," Spring 2016



- Enrolled in Core Math
- Enrolled in MaLL
- Enrolled at UNM, not taking Math
- Not enrolled at UNM

WHAT HAPPENED A YEAR LATER: STUDENTS SPENDING 3-16 WEEKS IN FM

Week 2-16 Students, Spring 2016



- Enrolled in Core Math
- Math 101
- Math 101 & 102
- Math 102
- Repeat FM
- At UNM, No Math
- Not at UNM

FUTURE DATA COLLECTION

- **2-year retention rates (available September 2017)**
 - **3-year retention rates (available 2018)**
 - **4-year graduation rate (available 2019)**
 - **6-year graduation rate (available 2021)**

PASS RATES BY SEMESTER

Semester	Pass Rate
Fall 2015	86%
Spring 2016	78%
Fall 2016	87%
Spring 2017	67%

Program response: What is different between fall & spring semesters?

Outcome: Pass rates in lower-level math classes are typically lower in the spring across a variety of institutions. This was also true in ISM.

Interesting Trends: Spring has a higher proportion of:

- Students repeating the course
- Post-traditional students
- Sophomores & above

MATH AVOIDERS

21 students were identified by Advising as a sophomore or above needing Foundational Math.

Program Response: Foundational Math Coordinator contacted all students and offered support.

Result: 9 registered for FM and were present for the Spring 2017 census date. 6 passed FM, 1 continued working over the summer and was granted an Incomplete.

Program Response: Track student progress in successive math courses to evaluate effectiveness of contact.

KEY PARTNERSHIPS: “It takes a village.”

CEP Advisors
MaLL (Next levels of math)
Registrar
Administration
Retention Specialists
Advising
Peer Mentor Tutoring

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Questions? Comments?

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