OIA/IDI Colloquium Series
July 28, 2017
**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

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 lifelong
**HOW IS THE EMPORIUM MODEL DIFFERENT?**

<table>
<thead>
<tr>
<th>Traditional &quot;ISM&quot; Model</th>
<th>&quot;FM&quot; Emporium Model</th>
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</thead>
<tbody>
<tr>
<td>All students learn at the same pace.</td>
<td>All students are self paced.</td>
</tr>
<tr>
<td>All students learn the same material at the same time.</td>
<td>Each student has a unique &quot;learning path.&quot;</td>
</tr>
<tr>
<td>Assessment occurs at regular, pre-scheduled intervals.</td>
<td>Assessment is adaptive, allowed when a student has mastered a set of topics.</td>
</tr>
<tr>
<td>Students progress in material regardless of assessment results.</td>
<td>A student progresses only after displaying mastery through a given assessment. Review assessments are scheduled at regular intervals.</td>
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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
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
The majority of students work consistently across sections and progress at an appropriate pace.

“A tale of two extremes”

<table>
<thead>
<tr>
<th>Concern</th>
<th>Response</th>
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<tbody>
<tr>
<td>Students meeting minimum benchmarks, but not working outside of class</td>
<td>Study plans, instructor option to add time in system to course grading scheme</td>
</tr>
<tr>
<td>Students meeting (and often exceeding) minimum time requirements but not meeting benchmarks</td>
<td>Study plans, intersession option, option to test at 70 topics (Week 12 &amp; 16), discussion of Incomplete policy</td>
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</tbody>
</table>
All students are given an anonymous online survey. Response rates are consistently VERY low. However, themes did emerge.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Program Response</th>
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<tbody>
<tr>
<td>Students either love or hate ALEKS</td>
<td>Instructor effort to better explain rationale and function of ALEKS</td>
</tr>
<tr>
<td>Students felt isolated from classmates</td>
<td>Large- and Small-group discussion prompts &amp; activities</td>
</tr>
<tr>
<td>Conflicting responses: Some students wanted more lecture, while others wanted more time in ALEKS</td>
<td>Mini-lectures became optional; Instructors &amp; PMTs focus more on one-on-one support for individuals &amp; small groups</td>
</tr>
<tr>
<td>Week 2 exam caused anxiety for some students</td>
<td>Week 2 exam became optional</td>
</tr>
</tbody>
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All students are given an anonymous online survey. Response rates are consistently VERY low but themes did emerge.

<table>
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<th>Theme</th>
<th>Program Response</th>
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<td>Some students felt rushed</td>
<td>Intersession offering &amp; discussion of Incomplete policy</td>
</tr>
<tr>
<td>Students did not understand the purpose of the</td>
<td>Revised wording in syllabus for future semesters, instructor meeting to clarify</td>
</tr>
<tr>
<td>Success Navigator Survey</td>
<td>purpose &amp; link to assignments</td>
</tr>
<tr>
<td>Some students would like a distance learning</td>
<td>Research self-paced distance learning <em>(NOT favorable to a distance learning format at other institutions)</em></td>
</tr>
<tr>
<td>option</td>
<td></td>
</tr>
</tbody>
</table>
All instructors complete an end-of-semester instructor survey.

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<th>Theme</th>
<th>Program Response</th>
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<tr>
<td>Instructors wanted more interaction with one another</td>
<td>Informal coffee &amp; breakfast meetings</td>
</tr>
<tr>
<td>Discomfort with allowing students to test at 70 topics</td>
<td>Data collection regarding outcomes of students testing at 70 shared with instructors</td>
</tr>
<tr>
<td>Instructors want more professional development offerings</td>
<td>Coordinator provides email invitations to free professional development activities</td>
</tr>
<tr>
<td>Concern students are dropping out due to non-Academic matters</td>
<td>CEP Adviser assigned to each instructor, Department resources list</td>
</tr>
</tbody>
</table>
The University gradually increased the cut score for Foundational Math, allowing more students to begin in Intermediate Algebra (MaLL).

<table>
<thead>
<tr>
<th>Course Name Semester</th>
<th>ACT Cut Score</th>
<th>Number of Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISM 100 (Fall 2013)</td>
<td>19</td>
<td>~38</td>
</tr>
<tr>
<td>ISM 100 (Fall 2014)</td>
<td>18</td>
<td>~30</td>
</tr>
<tr>
<td>QR (Fall 2015)</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td>FM (Fall 2016)</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>FM (Fall 2017)</td>
<td>17*</td>
<td>18?</td>
</tr>
</tbody>
</table>

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
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

- 12 Passed Core Math
- 12 Enrolled in Core Math
- 6 Enrolled in MaLL (101 & 102)
- 2 Enrolled at UNM, not taking Math
- 2 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 & 102
Math 102 & 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: 8
- Enrolled in Core Math: 4
- Enrolled in MaLL: 5
- Enrolled at UNM, not taking Math: 1
- Not enrolled at UNM: 1
WHAT HAPPENED: SPRING 2016
WHAT HAPPENED A YEAR LATER: STUDENTS TESTING OUT, WEEK 2

Week 2 "Test out," Spring 2016

- Enrolled in Core Math: 6
- Enrolled in MaLL: 3
- Enrolled at UNM, not taking Math: 1
- Not enrolled at UNM: 2
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

- 26 Students
- 10 Students
- 9 Students
- 9 Students
- 8 Students
- 12 Students
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**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Pass Rate</th>
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<tbody>
<tr>
<td>Fall 2015</td>
<td>86%</td>
</tr>
<tr>
<td>Spring 2016</td>
<td>78%</td>
</tr>
<tr>
<td>Fall 2016</td>
<td>87%</td>
</tr>
<tr>
<td>Spring 2017</td>
<td>67%</td>
</tr>
</tbody>
</table>

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
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
Questions? Comments?

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