

CNM ANNUAL STUDENT LEARNING ASSESSMENT REPORT

Due to the Student Academic Assessment Committee by October 15



PART 1: REPORT INFORMATION

Report Year and Contact Information			
<u>2018-2019</u> Academic Year	<u>David Valdés and Huong McDoniel</u> Contact Person	<u>dvaldes1@cnm.edu; hmcdoniel@cnm.edu</u> CNM Email	<u>50294</u> CNM Office Extension
Subject of this Report			
SAGE--SAGE_MATH--SAGE Math			

PART 2: CONTEXT IN WHICH THE ASSESSMENT TOOK PLACE

Program/Area Highlights and Successes
<p>(Wherever applicable, include course completion rates, job placement outcomes, and licensing examination pass rates. See the program information dashboard at https://livecnm.sharepoint.com/sites/Dashboards/SitePages/Program%20Information%20Dashboard.aspx (access restricted to CNM employees) and other reports at https://www.cnm.edu/depts/opie.)</p> <p>In 2018-2019, SAGE Math achieved an average discipline retention rate of 84.3%, up 0.6% from the previous year and C-Pass rate of 61.7%, up 0.8% from the previous year.</p> <p>Two FT math instructors began to pilot an OER textbook: <i>OpenStax Elementary Algebra</i>. <i>So far, students have been responding well to the OER textbook.</i></p> <p>During summer 2019, in collaboration with MSE math faculty, SAGE math faculty outlined a proposal for MathMyWay: a competency-based math emporium model, which will be piloted in the new academic year.</p> <p>SAGE Math continued to implement a co-requisite model of Math 0980 and Math 1215. The co-requisite model allows students to take two math courses in one term and accelerate through their math course requirements. Preliminary results from the co-requisite sections have shown higher retention rate and pass rate compared to the traditional prerequisite model.</p> <p>SAGE Math full-time faculty continued to run the FACEA (Faculty Academic Centers for Education Assistance) program to provide students with additional one-on-one assistance in math.</p> <p>Click or tap here to enter text.</p>

Changes Implemented During the Past Year in Support of Student Learning

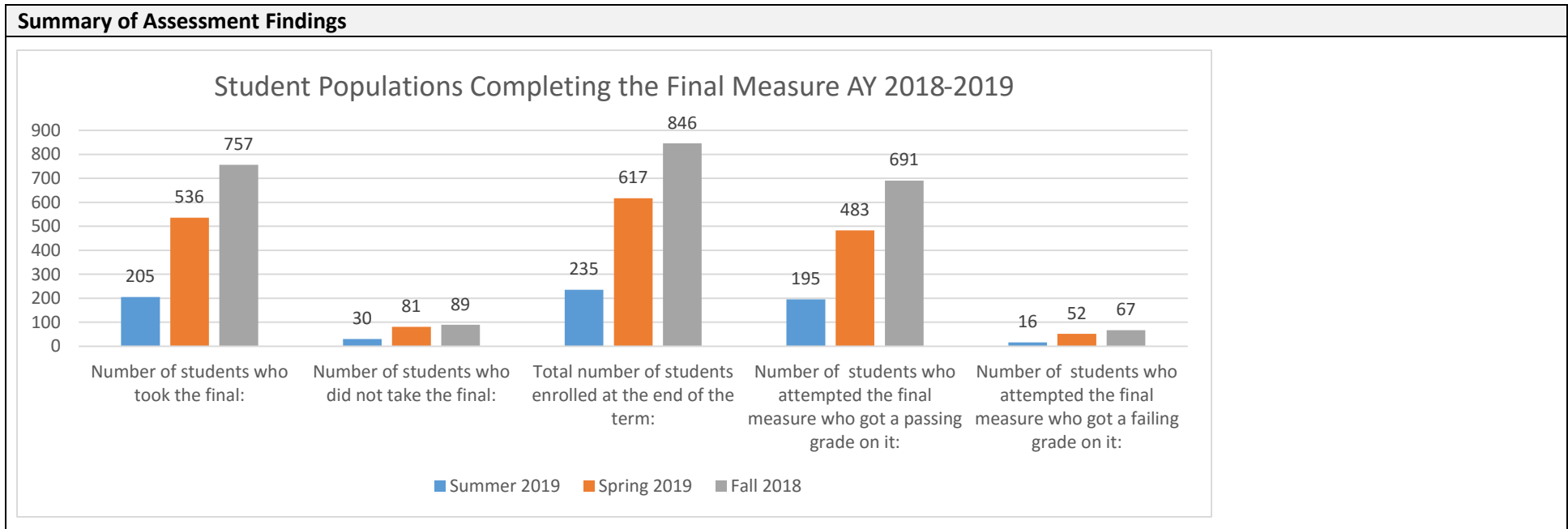
SAGE Math faculty adopted policies to add more structure to the Math 0970 SPACE offerings, such as pace guide, weekly objectives, paper-based mid-term exam, etc.

Two FT faculty members piloted an OER textbook for Math 0970 and 0980.

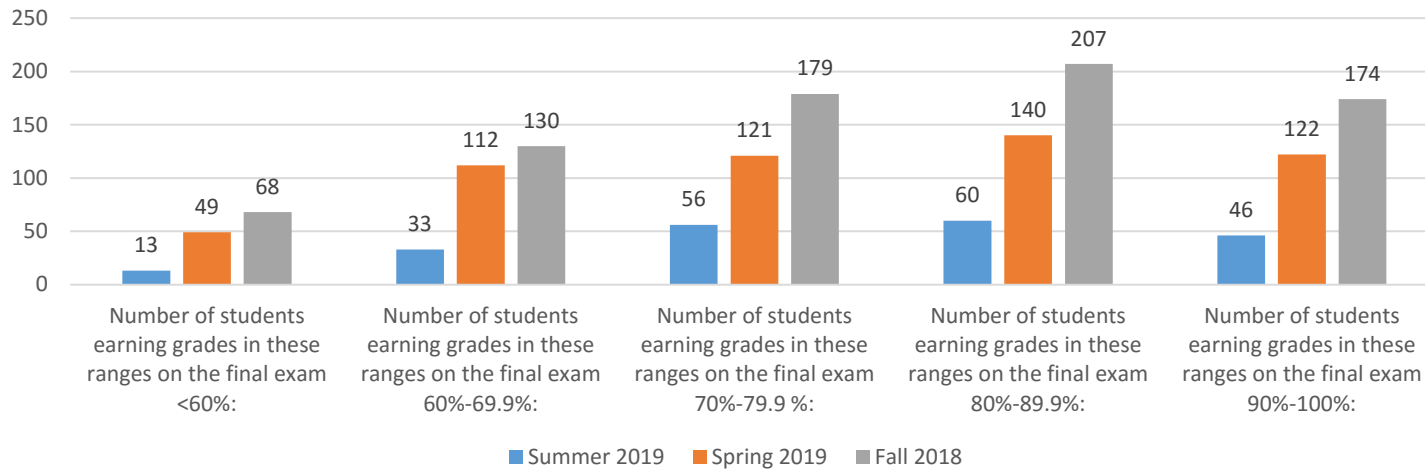
PART 3: REPORT ON ASSESSMENT OF STUDENT LEARNING

Assessment Method	Type of Assessment Tool	Population or Course(s) Assessed	Graduate Learning Outcome(s) Assessed	Mastery Level (E.g., "Minimum score of 3 on a rubric scaled 0-4" or "Minimum score of 75%")	Targeted % Achieving Mastery	Outcome
Final Exam	Direct & Internal	Math 0980	Simplify and Evaluate Exponential Expressions	Answer is either right or wrong.	60%	Target met
Final Exam	Direct & Internal	Math 0980	Simplify Expressions in Scientific Notation	Answer is either right or wrong.	60%	Target met
Final Exam	Direct & Internal	Math 0980	Add, Subtract, Multiply, and Divide Polynomial Functions	Answer is either right or wrong.	60%	Target met
Final Exam	Direct & Internal	Math 0980	Solve Quadratic Equations	Answer is either right or wrong.	60%	Target not met
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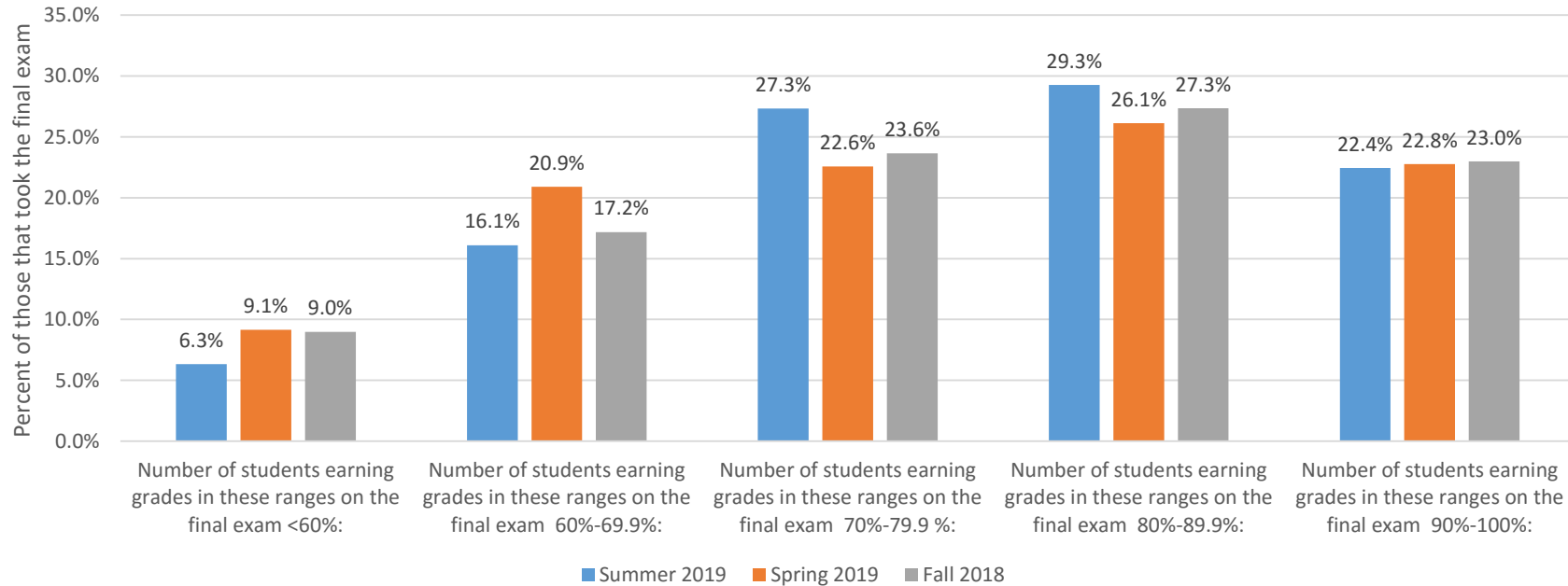
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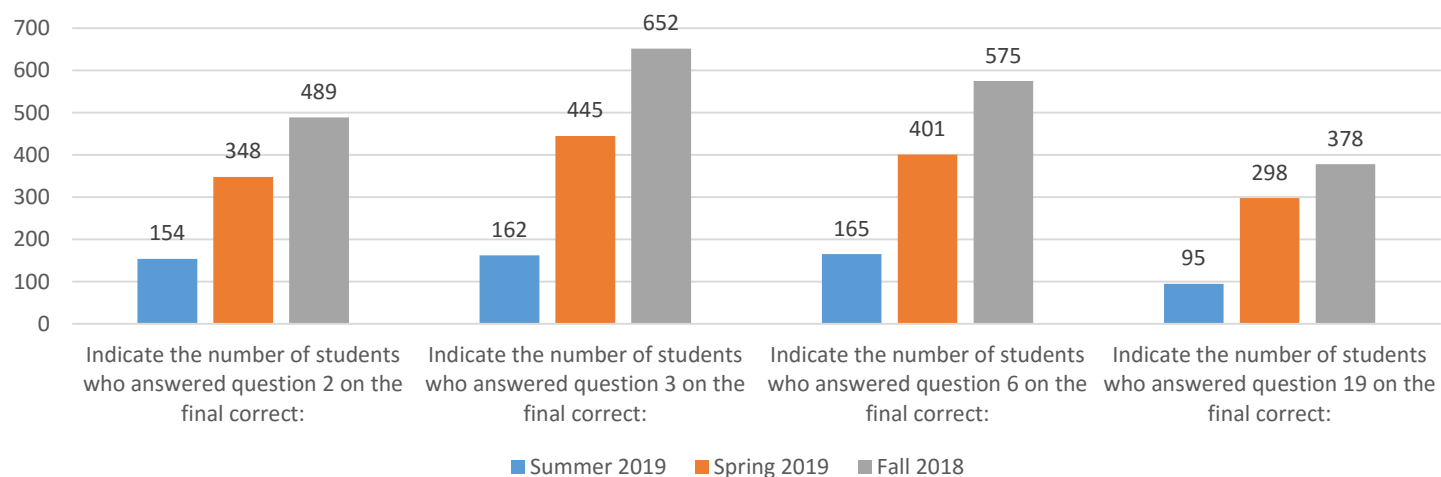
Student Performance on Final Measure AY 2018-2019



Student Performance on Final Measure AY 2018-2019



Final Measure Questions AY 2018-2019



Sample Problems	SLO
<p>Problem 2</p> <p>Simplify.</p> $(x^3y)(-2x^2y^2)^2$	<p>Simplify and Evaluate Exponential Expressions</p>
<p>Problem 3</p> <p>Calculate. Write your answer in scientific notation.</p> $(4 \times 10^{-4})(2 \times 10^7)$	<p>Simplify Expressions in Scientific Notation</p>
<p>Problem 6</p> <p>Divide.</p> $(21x^3 - 27x^2 - 9x) \div 3x$	<p>Add, Subtract, Multiply, and Divide Polynomial Functions</p>
<p>Problem 19</p>	<p>Solve Quadratic Equations</p>

Use the quadratic formula to solve for x . Answer in simplified radical form, or round to the nearest hundredth.

$$7x^2 - 3x - 2 = 0$$

Interpretation of Assessment Findings

Student Completion of the Final Exam

- Between 10-20% of students enrolled at the end of the term elected not to take the final exam.
- Between 8-11% of students that took the final exam, failed it.

Student Performance on the Final Exam

- The mean student performance on the final exam was in the B range in Fall 2018.
- In Spring 2019, the D range showed an uptick as compared to Fall 2018.
- Summer 2019 shows an uptick in C range scores as compared to Fall 2018.

Student Performance on Final Measure Questions

- Targets were met for 3 of the 4 student learning outcomes associated with questions on the final exam.
- More work needs to be done to help students improve their ability to solve quadratic equations.

Action Plan in Support of Student Learning (Describe changes to be made that are based at least in part on the assessment interpretation. If the assessment did not yield useful information, describe changes to be made in the assessment methodology and/or criteria.)

Solving quadratic equations is the capstone of Math 0980 (Algebraic Problem Solving II). Therefore, to increase overall student success in this area, we will

- increase student practice in solving quadratic equations,
- increase instructional time devoted to solving quadratic equations,
- increase our level of “just in time” assessment of student learning involving quadratic equations, and
- increase classroom observations and sharing of teaching styles and delivery.

In addition to the above goals, SAGE Math will

- continue offering faculty support through FACEA (Faculty Academic Centers for Education Assistants),
- continue using the collaborative model to revise online courses, and
- schedule time for informal and formal discussions of teaching and assessment strategies that improve student learning.

Please select all of the following that characterize the types of changes described in the above action plan:

- | | | |
|---|---|---|
| <input type="checkbox"/> Assessment criteria revision | <input checked="" type="checkbox"/> Assessment methodology revision | <input checked="" type="checkbox"/> Assignment revision |
| <input type="checkbox"/> Budgetary reallocation | <input checked="" type="checkbox"/> Change in teaching approach | <input checked="" type="checkbox"/> Course content revision |
| <input type="checkbox"/> Curricular Revision | <input type="checkbox"/> Faculty training/development | <input type="checkbox"/> Process revision |

Recommendations, Proposals, and/or Funding Requests	Budget Needed
No additional funding is needed at this time.	Click or tap here to enter text.

PART 4: REMAINING YEARS IN CURRENT ASSESSMENT CYCLE PLAN (including any revisions) – **OR -- UPCOMING ASSESSMENT CYCLE PLAN** (if this was the final year)

Years of Full Cycle	Next Year's Assessment Focus (Describe how the next planned assessment is expected to provide information that can be used toward improving student learning.)
2019-2020	Math 0970 Student Learning Outcomes

Graduate Learning Outcomes to Be Assessed	Years in which Assessment Is Planned	Population/Courses to Be Assessed	Planned Assessment Approach
Solve a linear equation with several occurrences of the variable: Variables on both sides of the equation and distribution (Question 4 on Final Exam)	2019-2020	Math 0970	Final Exam
Solve a two-step linear inequality (Question 12 on Final Exam)	2019-2020	Math 0970	Final Exam
Solve a system of linear equations using substitution (Question 18 on Final Exam)	2019-2020	Math 0970	Final Exam
Graph a linear inequality in the plane (Question 20 on Final Exam)	2019-2020	Math 0970	Final Exam
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