

UNIVERSITY OF ARKANSAS PULASKI TECH

Assessment Report: 2019-2020: EDUC 2330: Math for Teachers I



Assessment Report



1. Name of individual compiling report	t: Lana Riding	
2. Date of submission:	<u>September 28, 2020</u>	
3. Is the assessment plan an initial plan for the program	a revision of an old plan	unaltered from previous year

Course-Level Learning Outcomes-

1. What are the Course-Level Outcomes (CLOs)?

CLO #1. Apply Polya's problem-solving process and strategies; Build new mathematical knowledge through solving problems and in context.

CLO #2. Apply and adapt a variety of appropriate strategies to solve problems.

CLO #3. Develop geometric concepts by recognizing, analyzing, measuring, and reasoning about two and three-dimensional shapes.

CLO #4. Formulate and solve problems that involve collecting and analyzing data.

CLO #5. Apply technology whenever appropriate.

CLO #6. Create and use representations to organize, record, and communicate mathematical ideas.

CLO #7. Communicate mathematical thinking coherently and clearly.

CLO #8. Explore basic concepts of probability.

CLO #9. Apply the use of patterns and symbolic notation to introduce algebraic relationships.

2. Which CLOs were addressed for this academic year? (2019-2020)

CLOs 1, 2, 4, 5, 6, 7, and 9 were addressed. CLOs 3 and 8 are assessed in EDUC 2340 Math for Teachers 2.



3. Which CLOs are being addressed in your assessment plan next academic year? (2020-2021)

2020 -2021 the CLOs are being modified to more accurately reflect the division of course learning outcomes between EDUC 2330 and EDUC 2340. The CLOs that are emphasized more in Math for Teachers 2 will only be assessed as part of that course. New CLOs have been written to show the emphasis of outcomes for EDUC 2330. The new CLOs beginning in 2020-2021 are:

- 1. Apply Polya's problem-solving process and strategies and build new mathematical knowledge through solving problems and in context.
- 2. Identify and demonstrate important properties of whole numbers, integers, rational numbers and real numbers, and multiple representations for the arithmetic operations for each.
- 3. Understand what growth mindset is and reflect on what it takes to foster this in teaching elementary school mathematics.
- 4. Discuss and demonstrate effective use and content knowledge of manipulatives in the teaching of mathematics at the K-8 school level.
- 5. Apply technology as an integral part of teaching and learning mathematics, whenever appropriate.

4. Explain the assessment cycle.

There is an annual assessment of this course using the fall semester cohort, as this course is no longer offered in the spring semester. All CLOs will all be assessed annually beginning with the next academic year. The CLOs which were not addressed for Fall 2019 were carried over into EDUC 2340 Math for Teachers 2 and were assessed in that course during Spring 2020. Those CLOs (#3 and #8) have been removed from EDUC 2330 and will now only be addressed in EDUC 2340.

5. What are the assessment methods? Are they direct or indirect?

For Fall 2019 the assessment method was direct, using assessment testing through WebAssign. The cohort consisted of twelve students.



6. What are the assessment goal(s)?

The assessment goal is for students to score at least 75% on the questions associated with each CLO.

7. What were the findings for this academic year? (2019-2020)

CLO #1. Apply Polya's problem-solving process and strategies: 64.2% Goal not met.

CLO #2. Apply and adapt a variety of appropriate strategies to solve problems: 75.4% Goal met.

CLO #4. Formulate and solve problems that involve collecting and analyzing data:

69.6% Goal not met.

CLO #5. Apply technology whenever appropriate: 77.9% Goal met.

CLO #6. Create and use representations to organize, record, and communicate mathematical ideas:

78.3% Goal met.

CLO #7. Communicate mathematical thinking coherently and clearly: 77.1% Goal met.

CLO #9. Apply the use of patterns and symbolic notation to introduce algebraic relationships:

77.6% Goal met.

8. What is your analysis of the findings?

As noted in the report for 2018-19, in EDUC 2330, students struggle with applying Polya's problem-solving process and strategies. They are more comfortable with being told how to solve problems. Learning to build new mathematical knowledge through solving problems and within a given context is a new skill, and the students often enter the course with a fixed mindset. They do not believe they can accomplish this. It is a challenge for them to apply and adapt strategies to solve problems. They are more comfortable with using technology,



however. They learn to create and use representations to organize, record, and communicate mathematical ideas eventually, and most learn to communicate mathematical thinking coherently and clearly by the end of the semester. The only two CLOs that did not show students exceeding the goal of 75% were CLO #1 and #4. Problem solving using Polya's process and strategies, and solving problems involving data collection and analysis are both vital skills for students who are pursuing a career in elementary education. These skills need continued emphasis and additional opportunities for practice.

9. What is the action plan for the next academic year? (2020-2021) Explain.

The revised CLOs for the course will be assessed using a rubric to score their final project, which integrates problem solving, manipulatives, technology, growth mindset, and communicating mathematically.