

Assessment 5a: ELED 538 Mathematics MAT Practicum

1. Brief Description of Assessment

ELED 538 Mathematics MAT Practicum is one of the six methods courses teacher candidates are required to take in their program. The course content covers how to teach the “major concepts, procedures, and reasoning processes of mathematics that define number systems and number sense, geometry, measurement, statistics and probability, and algebra in order to foster student understanding and use of patterns, quantities, and spatial relationships that can represent phenomena, solve problems, and manage data” (ACEI Standard 2.3). During the course, teacher candidates complete a student assessment analysis during their mathematics practicum course. They are required to work in a small group and construct and teach an eight lesson unit that involves a major focus on assessing students, coupled with working collegially, and reflecting on their own growth and development as teachers as a result of analyzing their effectiveness on student learning. This artifact provides evidence that teacher candidates in this program meet ACEI Standards 1, 2.3, 4, and 5.1 as described below.

2. Brief Description of How Assessment is Used

The Student Assessment Summary is one measure teacher candidates use to demonstrate competence in the teaching of Mathematics. Teacher candidates must earn an Acceptable or Exemplary rating on the artifact, and are allowed one opportunity for revision should there be issues with their unit. It is then presented as evidence in their Preparing To Teach Portfolio prior to student teaching as documentation of readiness in this area and demonstrates their ability to plan, implement, and reflect on lessons, focusing mainly on their development in assessing student learning and reflecting on themselves as effective educators.

3) Brief Analysis of Findings

The Student Assessment Summary Artifact is documented in six parts and is assessed using a rubric. The parts that relate specifically to ACEI Standards include a chart that addresses the first six indicators from the Rhode Island Professional Teaching Standard (RIPTS) 9, samples of student work that are analyzed and included in the analysis paper, the analysis paper that addresses the last indicator in RIPTS 9, and charts teacher candidates’ ratings on the unit objectives and specific anecdotal notes on students.

In keeping with practices that are demonstrably effective with students, teacher candidates are given ongoing feedback. In most cases, teacher candidates do well at describing what they did during lessons, why they made changes if they did, noting successes and monitoring ‘failures’. They are eager to make modifications to lessons based on analysis of assessments, and frequently comment on

the benefits of using varied assessments. They often recognize discrepancies between observations and written work from the students' math journal responses, and must conduct further assessment to confidently determine student progress. Where teacher candidates tend to be weak is in describing student strengths and weaknesses, beyond relating their observations of behaviors, and much feedback is provided to assist them in focusing on the content aspect of the lessons and unit overall. By the time they complete their lessons and the artifact, most teacher candidates have mastered this piece, and are rated exemplary. The data tables provide the quantitative information to support this claim.

All teacher candidates (n=14) presented in the data table earned an overall rating of Exemplary on their respective artifacts. In some cases, components of the artifacts earned an Acceptable rating, but in no instance did any single candidate earn more than one Acceptable on their total artifact on the pieces that applied to the artifact. Two candidates did earn a second Acceptable on the Conventions portion.

4) Evidence of Meeting Standards

Teacher candidates visit the classroom and students with whom they'll be working and gather information from the cooperating teacher and students themselves. Thus they „capture the context' in a variety of ways and use this knowledge in making instructional decisions when planning their lessons and assessments. They focus on appropriate content that includes topics such as geometry, data analysis, probability, number and operations, algebra, or measurement (ACEI 2.3). Teacher candidates conduct both pre- and post-assessments to determine the effectiveness of their teaching. During the unit they use instructional techniques based on knowledge of how students learn and develop. Using a problem solving approach, helping students make connections between mathematical concepts and topics and with real world applications, communicating mathematically physically, orally, and in writing, and representing mathematical ideas in multiple ways is key in their work, and in their ability to create and conduct informal and formal assessments (ACEI 1, 2.3, 4.0). They use multiple varied assessments, including observation, task sheets, questioning, journal responses, student self-assessment sheets, and teacher-made tests to assess student learning (ACEI 4.0). They meet together with the cooperating teacher and their co-teachers after each lesson, and rate each student on attainment of lesson objectives based on the assessments used in the lesson. They write anecdotal notes on student strengths and weaknesses and the implications these hold for subsequent instruction. Specifically, they use the information from the assessments to determine how to move forward in meeting each student's needs, such as whether they need to re-teach a concept or provide additional support.

In addition, for each lesson teacher candidates write a brief summary of what was done in the lesson, since changes are frequently made during lessons based on student response, and they write about what went well, what didn't go well, and what they would change the next time they teach the lesson, or going forward, thus learning to focus on and monitor their own teaching. In some cases,

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the teacher candidate is writing about his or her own teaching, but also on observation of colleagues' teaching. The teacher candidates recognize the benefit of working with a cooperating teacher to gather information and ideas, as well as from the observations made by colleagues. Debriefing sessions are held weekly with the course instructor to address successes and failures, and share ideas with each other (ACEI 5.1). The course instructor reviews the written reflections and provides formative feedback, thus enabling teacher candidates to address weaknesses so that by the time the final artifact is constructed and submitted, most teacher candidates have reached an exemplary level of work.

5) Assessment Documentation

Portfolio Artifact: Student Assessment Summary

The artifact consists of four parts:

- **Part 1:** a chart that addresses six of the seven descriptive indicators of RIPTS 9.
- **Part 2:** student work samples
- **Part 3:** an analysis paper that describes your thoughts and beliefs on teaching and learning (addresses last descriptive indicator of RIPTS 9).
- **Part 4:** the unit assessment chart containing objectives, strengths, weaknesses, and instructional implications/next steps.

**Rhode Island Professional Teacher Standard 9
 Standard Number 9 (ACEI Standards 1, 2.3, 4, 5.1)**

Teaching Process: The teacher candidate uses assessment data to profile student learning, communicate information about student progress and achievement, and evaluate his/her own teaching.

PART 1: Use this chart and list the ways you met six of the seven descriptive indicators of RIPTS 9 (*you may use bullets to organize your list*).

| <i>Capturing Context</i> | <i>Classroom Assessments</i> | <i>Evaluating Performances</i> | <i>Providing Feedback</i> | <i>Promoting Learner Self-Assessment</i> | <i>Recording and Communicating</i> |
|--|---|--|---|--|--|
| <i>Identify and consider student and contextual variables that may influence performance so that a student's performance can be validly interpreted.</i> | <i>Select and/or design individual and group classroom assessments based on the strengths, limitations, and data provided by assessments.</i> | <i>Systematically collect, synthesize, and interpret assessment results from multiple assessments to monitor, improve, and report individual and group achievement.</i> | <i>Use assessment results to provide students with timely, helpful, and accurate feedback on their progress toward achievement goals.</i> | <i>Provides students with opportunities and guidance to evaluate their own work and behavior against defined criteria and use the results of self-assessment to establish individual goals for learning.</i> | <i>Maintain records of student learning and communicate student progress to students, parents/guardians, and other colleagues.</i> |
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PART 2: student work samples

Provide two illustrative samples of assessed student work/performances (*two different students one work sample each*). As you analyze your teaching and students' learning (Part 3) make connections to the work samples you've included.

PART 3: Analysis paper – Impact on Learning and Teaching

Teachers ...use information from their assessment of students to reflect on their own teaching, to modify their instruction (RIPTS 1 through 8) and to help establish professional development goals (RIPTS 10).

A critical piece of learning to teach mathematics to elementary students is assessing the effectiveness of your own instruction in relationship to their learning. Using the guiding questions below to write a thorough analysis in which you consider what your students' performance indicates about your own teaching.

Examine the assessment charts and student work samples as you reflect on your own teaching. What have you learned about your own teaching based on your assessments of what your students learned? The following questions should guide your thinking:

- How did individual students perform? What instructional modifications resulted from your assessment of their performance?
- What did you notice about individual students' attitudes towards math?
- What connections can you make between their attitudes and their math learning?
- What did you learn by examining students' writing?
- What did you learn about your own questioning?
- What did you learn as you listened to the questions students asked?
- Were there student questions or responses that forced you to change any of your lessons?
- What individual and group accommodations did you make while teaching this unit?
- What aspects of your teaching were most effective? Use learner data from work samples or assessment charts to support any claims you make.

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RIC Candidate _____ Unit title _____ Date _____

Part 3: Unit/Lesson Assessment Chart

Directions: Complete this chart for your unit. Create one unit chart with all objectives.

| Lesson Objectives | Students' Initials | | | |
|-------------------|--------------------|--|--|--|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| Key |
|--------------------------------------|
| Did the student meet the objectives? |
| 4 = yes, 3 = partially |
| 2 = no, 1 = not observed |

Summary

*Each strength, weakness, and implication must directly relate back to one or more of your objectives.
 Make sure to focus on their mathematical understandings and not behavioral issues*

| Students' Initials | Strengths | Weaknesses | Instructional Implications |
|--------------------|-----------|------------|----------------------------|
| | | | |
| | | | |
| | | | |

Portfolio Artifact: Student Assessment Summary

Scoring Rubric

| | Exemplary | Acceptable | Unacceptable |
|--|---|--|--|
| Content Using Data: connecting to RIPTS indicators – the candidate provides details of the ways he/she met the indicators. (ACEI 4, 5.1) | The chart indicates comprehensive methods were used to meet RIPTS. (3 pts) | The chart indicates many methods were used to meet RIPTS. (2 pts) | The chart indicates few methods were used to meet RIPTS. (1 pt) |
| Assessment Analysis: Impact on Teaching and Learning – the candidate examines the relationship between his/her teaching and student learning as connections are made to the Student Work Samples (ACEI 4, 5.1) | Analysis of teaching is in-depth and specific to Student Work Samples. The candidate reveals extensive understanding of the relationship between his/her teaching and student learning. (3 pts) | Analysis of teaching reveals an understanding of the relationship between teaching and student learning. The candidate makes some connections to the Student Work Samples. (2 pts) | Analysis of teaching reveals scant understanding of the relationship of teaching to children’s learning. Some or no connection is made to the Student Work Samples. (1 pt) |
| Unit assessment chart: Strengths and Weaknesses – the candidate assesses student learning according to the lesson/unit objectives noting student strengths and weaknesses (ACEI 1, 2.3, 4) | Assessment chart is complete. Analysis of strengths and weaknesses indicates comprehensive understanding of assessing children in relationship to objectives. (3pts) | Objective chart is complete. Analysis of strengths and weaknesses indicates sound understanding of assessing children in relationship to objectives. (2 pts) | Objective chart is complete. Analysis of strengths and weaknesses indicates scant understanding of assessing children in relationship to objectives. (1 pt) |
| Unit assessment chart: Implications for Instruction – the candidate makes decisions for future lessons based on his/her assessment of students’ strengths and weaknesses (ACEI 1, 2.3, 4) | Includes comprehensive instructional implications showing clear connections to identified strengths and weaknesses. (3pts) | Includes many instructional implications showing clear connections to the identified strengths and weaknesses. (2 pts) | Includes few instructional implications and/or may have weak connections to the identified strengths and weaknesses. (1 pt) |
| Expression/voice <ul style="list-style-type: none"> Paper demonstrates focused, thoughtful composition, phrasing, and structure. Audience is clear and effectively addressed throughout the essay. | Well-focused essay with evidence of thought in composition, phrasing and structure. Audience is clear and is effectively addressed. (3 pts) | Essay is focused and shows evidence of skill in writing. Voice may shift and audience may not be clear throughout. (2pts) | Essay is poorly expressed with little attention to language and sentence structure. (1 pt) |
| Conventions <ul style="list-style-type: none"> Uses correct grammar and mechanics, and appropriate word usage. Paper flows and is well organized. | All conventions are addressed. Paper contains fewer than three spelling, punctuation, or grammatical errors. (3 pts) | Most conventions are addressed. Paper contains no more than four spelling, punctuation, or grammatical errors. (2 pts) | Some conventions are addressed. Paper contains five or more errors in spelling, punctuation, and/or grammar. (1 pt) |

Total Points _____

Rating: Exemplary (18-16 pts) _____ Acceptable (15-12 pts) _____ Unacceptable (Below 12 pts or an unacceptable rating in any category)* _____

Revision required Yes No Resubmit by (date) _____ Revision Rating _____

Instructor Signature

Date

Section #

Semester and year

*An artifact earning an Unacceptable rating must be revised. The ELED 438 professor will provide specific revision deadlines. The Department of Elementary Education policy: The maximum rating after re-submission is “acceptable.” If a student fails to achieve an “acceptable” rating after one re-submission, the professor recommends that the student not continue in the program. The student will be referred to the Admission/Retention Committee.

ELED 538 Mathematics MAT Practicum: Student Assessment Summary Data Table**Rubric Ratings****Presented by Number of Candidates Attaining Each Rating**

| Rating | Spring 2009 Student Teaching Candidates n=4 | | | Fall 2009 Student Teaching Candidates n=2 | | | Spring 2010 Student Teaching Candidates n=8 | | |
|--|---|------------|---------------|---|------------|---------------|---|------------|---------------|
| | Exemplary | Acceptable | Un-acceptable | Exemplary | Acceptable | Un-acceptable | Exemplary | Acceptable | Un-acceptable |
| Content Using Data: connecting to RIPTS indicators – the candidate provides details of the ways he/she met the indicators. (ACEI 4, 5.1) | 3 | 1 | 0 | 2 | 0 | 0 | 5 | 3 | 0 |
| Assessment Analysis: Impact on Teaching and Learning – the candidate examines the relationship between his/her teaching and student learning as connections are made to the Student Work Samples (ACEI 4, 5.1) | 3 | 1 | 0 | 2 | 0 | 0 | 7 | 1 | 0 |
| Unit assessment chart: Strengths and Weaknesses – the candidate assesses student learning according to the lesson/unit objectives noting student strengths and weaknesses (ACEI 1, 2.3, 4) | 4 | 0 | 0 | 2 | 0 | 0 | 8 | 0 | 0 |
| Unit assessment chart: Implications for Instruction – the candidate makes decisions for future lessons based on his/her assessment of students’ strengths and weaknesses (ACEI 1, 2.3, 4) | 4 | 0 | 0 | 2 | 0 | 0 | 7 | 1 | 0 |
| Expression/voice <ul style="list-style-type: none"> Paper demonstrates focused, thoughtful composition, phrasing, and structure. Audience is clear and effectively addressed throughout the essay. | 4 | 0 | 0 | 2 | 0 | 0 | 8 | 0 | 0 |
| Conventions <ul style="list-style-type: none"> Uses correct grammar and mechanics, and appropriate word usage. Paper flows and is well organized. | 3 | 1 | 0 | 1 | 1 | 0 | 6 | 2 | 0 |

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