

Assessment 5b: ELED 518 Teaching Science in the Elementary School or ELED 537 Science MAT Practicum

1. Brief Description of Assessment

Teacher candidates take either ELED 518 Teaching Science in the Elementary School (without field experience) or ELED 537 Science MAT Practicum (with field experience) as one of the six methods courses required in their program. In both these courses, candidates develop an understanding, conceptually and practically of RIPTS 9 which corresponds to ACEI 4 in focusing on the assessment of students. As part of the assessment of competence in the teaching of Science, teacher candidates in ELED 537/518 use NSF-endorsed instructional materials during practicum with Grades 1-6 students. The science kits include a system of assessments that RIC teacher candidates can use. The kit assessment system has been designed for unique science content, processes, skills, and related attitudes. The artifact they then construct is comprehensive and includes the following components: context, a plan with a rationale for assessing student learning, an analysis of a subgroup of students' learning, and a self-evaluation. [*RI Professional Teaching Standards \(RIPTS\)*](#) were adopted for use Fall 2009 semester, and while this assessment artifact is similar in nature to the one used previous to that semester, the indicators from the Rhode Island Beginning Teacher Standard 9 were different, and so this new version does not have an exact comparison.

2. Brief Description of How Assessment is Used

The Assessment Artifact is used to measure teacher candidates' competence in assessing student learning. Teacher candidates must earn an Acceptable or Exemplary rating on the artifact, and are allowed one opportunity for revision should there be any component that does not meet standard. The artifact 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 attend to all critical aspects of assessment.

3) Brief Analysis of Findings

Teacher candidates were assessed using a rubric. They were assessed on context, design, analysis of subgroup of students' learning, self-evaluation, and writing conventions and voice. The data in the table is derived from the Preparing To Teach Portfolio submission, so there is only data from the new version of the artifact from one semester and only 7 of the teacher candidates submitted the new version of the artifact. From the remaining teacher candidate portfolios that used the old version of the artifact, all earned Exemplary ratings. For the 7 teacher candidates who submitted the new form of the Assessment Artifact, in two categories candidates attained a perfect rating and in three categories the mean was 2.7 out of 3 for one and 2.86 out of 3 for the remaining two categories, thus indicating exceptional success in meeting the requirements of the assessment.

4) Evidence of Meeting Standards

This artifact and assessment rubric are keyed to a number of standards, including RIPTS 9, ACEI Standards 4, and the College's Conceptual Framework. Teacher candidates design a comprehensive assessment plan that attends to formal and informal means of assessment based on usefulness in the particular context, considering "characteristics, uses, advantages, and limitations of different types of assessment appropriate for evaluating how K-6 students learn, what they know, and what they are able to do" and "monitor[ing] their own teaching strategies and behavior in relation to student success, modifying plans and instructional approaches accordingly" as they self-evaluate on student learning and make a plan for improvement (ACEI Standard 4). As indicated in the data table and narrative, teacher candidates demonstrate a high rate of success in meeting the standards.

5) Assessment Documentation

**ELED 537 Science MAT Practicum or ELED 518 Science in the Elementary School
Assessment Artifact
RIPTS 9 ARTIFACT/ACEI Standard 4**

INTRODUCTION

This file includes the purpose of the RIPTS Artifact, link to standards, instructional context, tasks, rubric, and reporting.

Purpose

The purpose of RIPTS 9 Artifact is to ensure that RIC teacher candidates demonstrate proficiency in the descriptive dimensions of the RIPTS Standard 9 and the FSEHD *Conceptual Framework*. Teacher candidates are expected to demonstrate their proficiency in RIPTS 9 as part of the course requirements for ELED 537 or ELED 518.

Link to Standards and Conceptual Framework

[RI Professional Teaching Standards \(RIPTS\)](#) were adopted for use Fall 2009 semester. Candidates will gain additional experiences with these new standards as they continue their ELED program of study. In this course, candidates develop an understanding, conceptually and practically of RIPTS 9 which focuses on the assessment of the learner.

RIPT Standard 9

"Teachers use appropriate formal and informal assessment strategies with individuals and groups of students to determine the impact of instruction on learning, to provide feedback, and to plan future instruction."

Teachers...

- *Select and/or design individual and group classroom assessments based on the strengths, limitations, and data provided by the assessments.*

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- *Identify and consider student and contextual variables that may influence performance so that a student's performance can be validly interpreted.*
- *Systematically collect/synthesize, and interpret assessment results from multiple assessments to monitor, improve, and report individual and group achievement.*
- *Provide 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.*
- *Use assessment result to provide students timely, helpful, and accurate feedback on their progress toward achievement goals.*
- *Maintain records of student learning and communicate student progress to students, parents/guardians, and other colleagues.*
- *Use information from their assessment of students to reflect on their own teaching, to modify their instruction and to help establish professional development goals.*

[Link to Association for Childhood Education International \(ACEI\) Elementary Education Standards](#)

ACEI Standard 4. Assessment for instruction—Candidates know, understand, and use formal and informal assessment strategies to plan, evaluate, and strengthen instruction that will promote continuous intellectual, social, emotional, and physical development of each elementary student.

[Link to FSEHD Conceptual Framework](#).

This course artifact is based on the FSEHD Teacher Candidate Work Sample (TCWS).

PLANNING

- Contextual factors related to the community and students to be taught;
- Learning goals and unit objectives aligned with state or district content standards;
- An assessment plan designed to assess student learning before, during and after instruction, and;
- A design for instruction;

ACTING

- Instructional decision-making that facilitates student learning;

REFLECTING

- Analysis of student learning and evaluation of self as teacher of the unit.”

Instructional Context

Teacher candidates in ELED 537/518 use NSF-endorsed instructional materials during practicum with Grades 1-6 students. The science kits include a system of assessments that RIC teacher candidates can use. The kit assessment system has been designed for unique science content, processes, skills, and related attitudes. In respecting the Department of Elementary Education diversity of field settings and placements across the multiple sections, as well as the diversity of its students, and given the expectation that all RIC teacher candidates have an opportunity to meet the RIPTS Standard 9, the following criteria is used by ELED 537/518 course instructors to guide RIC teacher candidates in the development and selection of this portfolio entry. (Note: ELED 518 teacher candidates do not participate in a practicum experience with students.)

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TASKS

Part 1. Context - Description and Implications

- Explain 3-5 relevant factors (e.g., social, political, economic, historical, philosophical, legal, professional, global, and cultural) and characteristics of your students, classroom, and school/community that may affect the teaching-learning process in your field placement.
- Explain how each of the factor/characteristic will influence your instructional decisions related to planning and teaching this science unit.

Suggested page length for narrative: 1 – 2 pages

Part 2. Design - Visual Organizer and Rationale

Design a plan for assessing student learning (e.g., visual organizer) that includes formative and summative measures to monitor student progress toward your unit outcomes. Conclude this task with a rationale that indicates why your assessments are appropriate for measuring learning, how they support the unit outcomes, and how you will evaluate student performance.

A. Visual Organizer

- Create a visual organizer that outlines an assessment plan for each unit outcome that includes assessments that will help you judge student performance, type of assessment, purpose, what will be assessed, how evidence will be collected, and relationship to learning outcomes and GSEs.

B. Rationale (Narrative)

- Choose TWO of your unit learning outcomes for this narrative rationale. Each outcome should represent different learning domains (science knowledge, science process skills, laboratory – procedural knowledge, and scientific attitudes) - for example: one science knowledge learning outcome and one science process skill learning outcome.
- For these two learning outcomes, explain the appropriateness and scheduling of the different types of assessments. Refer to the visual organizer.
- Explain your anticipated criteria. Explain how you will evaluate or score pre- and post-assessments. Include scoring criteria you will use to determine if the students' performances meet the two outcomes.

Suggested page length for rationale narrative: 1 – 2 pages

Part 3. Analysis of Subgroup of Students Learning

For the TWO unit learning outcomes that you selected to assess, analyze assessment data for a subgroup of students.

- Select a group characteristic (e.g., gender, pre-test performance level, socio-economic status, language proficiency) to analyze in terms of your two chosen unit outcomes.
- Provide a rationale for your selection of this characteristic to form a subgroup. In other words, explain why it important to understand issues surrounding this subgroup.
- Create a visual representation (e.g., charts and graphs) that compares pre-, formative, and post-assessment results for the subgroup on your two chosen unit outcomes.
- Interpret what these data show about student learning for these selected outcomes.

Suggested page length for narrative: 1 - 2 pages + charts/graphs and examples of student work.

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Part 4. Self Evaluation

- Analyze the two unit outcomes in Part 3 above and provide an honest and thoughtful self-evaluation in which you offer specific ideas for enhancing student learning.
- Explain why these revisions would improve student learning.
- *Suggested page length for narrative: 2 – 3 pages*

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RUBRIC

PERFORMANCE STATEMENT

The teacher candidate demonstrates proficiency of descriptive dimensions of the RIPTS Standard 9 and ACEI Standard 4 by understanding the relevant factors that may affect the teaching-learning process; designing and explaining the rationale for an assessment system; collecting, recording, representing, and analyzing assessment data; and self-evaluating the results.

SCORING

| Rating → Indicator ↓ | 1 Unacceptable | 2 Acceptable | 3 Exemplary | RIPTS /ACEI |
|---|---|--|---|----------------|
| Part 1. Context – Description and Implications | <p>Minimal, irrelevant, or biased knowledge of the contextual factors is evident.</p> <p>For one or more contexts, implications for instruction and assessment are missing OR provides inappropriate implications</p> | <p>A general description of the contextual factors - at least one context-related factor for students, classroom, school/community is evident.</p> <p>General implications for instruction and assessment based on student, classroom, and school/community factors are present.</p> | <p>A specific description of the context-factors - at least one context-related factor for students, classroom, school/community is evident.</p> <p>Inter-related aspects of context for instructional implications based on data are evident.</p> <p>Specific implications for instruction and assessment based on student, classroom, and school/community factors are present.</p> | 9/4 |
| Part 2. Design -Visual Organizer and Rationale | <ul style="list-style-type: none"> • Few or no outcomes are aligned with assessments • Assessments are not valid for measuring unit outcomes. • The rationale is mostly incomplete and/or inappropriate. • The scoring procedures are | <ul style="list-style-type: none"> • Some outcomes are aligned with assessments • Assessments are mostly valid for measuring unit outcomes. • The rationale is partially complete or appropriate. • The scoring | <ul style="list-style-type: none"> • Most outcomes are aligned with assessments • Assessments are clearly valid for measuring unit outcomes. • The rationale is complete or appropriate. • The scoring procedures are well defined & complete. | 9/4 |

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| Rating → Indicator ↓ | 1 Unacceptable | 2 Acceptable | 3 Exemplary | RIPTS /ACEI |
|---|---|--|--|----------------|
| | vague or incomplete. | procedures are mostly clear and complete. | | |
| Part 3. Analysis of Subgroup of Students' Learning | <ul style="list-style-type: none"> • Analysis of subgroup of students' learning is not aligned with selected unit outcomes. • Analysis does not provide a comprehensive profile of student learning relative to outcomes for subgroup. • Presentation of graph(s) is not clear; does not accurately reflect the data. • Interpretation is inaccurate; conclusions are missing or unsupported by data. | <ul style="list-style-type: none"> • Analysis of subgroup of students' learning is partially aligned with selected unit outcomes; • Analysis provides a somewhat comprehensive profile of student learning relative to outcomes for subgroup. • Presentation of graph(s) is clear and logical; reflects the data somewhat accurately. • Interpretation is somewhat accurate; some conclusions supported by data. | <ul style="list-style-type: none"> • Analysis of subgroup of students' learning is fully aligned with selected unit outcomes; • Analysis provides a comprehensive profile of student learning for a subgroup. • Presentation of graph(s) is clear and logical; accurately reflects the data. • Interpretation is meaningful and technically accurate supported by the data | 9/4 |
| Part 4. Self Evaluation | Self-evaluation provides few or no ideas or inappropriate ideas for redesigning unit outcomes, instruction, and assessment. Self-evaluation lacks rationale. | Self-evaluation provides some ideas for redesigning unit outcomes, instruction, and assessment. Self-evaluation offers a general rationale for why these changes would improve student learning. | Self-evaluation provides ideas for redesigning unit outcomes, instruction, and assessment. Self-evaluation offers a specific rationale as to why these modifications would improve student learning. | 9, 10/4 |

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| Rating → Indicator ↓ | 1 Unacceptable | 2 Acceptable | 3 Exemplary | RIPTS /ACEI |
|--|--|---|---|----------------------|
| Writing Conventions & Voice | <p>Essay is poorly expressed with little attention to language and sentence structure.</p> <p>Some conventions are addressed. Paper contains five or more errors in spelling, punctuation, and/or grammar.</p> | <p>Essay is focused and shows evidence of skill in writing. Voice may shift and audience may not be clear throughout.</p> <p>Most conventions are addressed. Paper contains no more than four spelling, punctuation, or grammatical errors.</p> | <p>Well-focused essay with evidence of thought in composition, phrasing and structure. Audience is clear and is effectively addressed.</p> <p>All conventions are addressed. Paper contains fewer than three spelling, punctuation, or grammatical errors</p> | No RIPTS /ACEI |

REPORT OF SCORES AND RATING TO STUDENT

| | Part 1 | Part 2 | Part 3 | Part 4 | Overall |
|----------------------|--|---|---|--|-----------------------------|
| INDICATORS | Context – Description and Implications (RIPT 9 ACEI 4) | Design - Visual Organizer and Rationale (RIPT 9 ACEI 4) | Alignment with Selected Unit Outcomes (RIPT 9 ACEI 4) | Self Evaluation and Implications for Future Teaching (RIPTS 9,10 ACEI 4) | Writing Conventions & Voice |
| ORIGINAL | | | | | |
| RE-SUBMISSION | | | | | |

NOTE: An overall Acceptable or Exemplary rating of the artifact is required for the Preparing to Teach portfolio. Students are required to earn a minimum score of 2.00 for each indicator to earn an Acceptable or Exemplary. If any indicator is less than 2.00, students can re-submit one time to improve the sub 2.00 indicator(s) to a 2.00 and earn an Acceptable rating.

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DATA TABLE

| Semester | | Part 1 Mean Score* | Part 2 Mean Score* | Part 3 Mean Score* | Part 4 Mean Score* | Overall |
|----------------------------|----------------------|---|--|--|---|--|
| | INDICATORS | Context – Description and Implications (RIPT 9 ACEI 4) | Design - Visual Organizer and Rationale (RIPT 9 ACEI 4) | Alignment with Selected Unit Outcomes (RIPT 9 ACEI 4) | Self Evaluation and Implications for Future Teaching (RIPTS 9,10 ACEI 4) | Writing Conventions & Voice |
| Spring 2010 n=7 | ORIGINAL | 2.86 | 2.7 | 3 | 3 | 2.86 |
| | RE-SUBMISSION | 0 | 0 | 0 | 0 | 0 |

*Out of a possible 3 points in each category

DATA TABLE

| Semester | Rating | Exemplary | Acceptable | Unacceptable |
|----------------------------|----------------------|------------------|-------------------|---------------------|
| Spring 2009 n=4 | ORIGINAL | 4 | 0 | 0 |
| | RE-SUBMISSION | 0 | 0 | 0 |
| Fall 2009 n=2 | ORIGINAL | 2 | 0 | 0 |
| | RE-SUBMISSION | 0 | 0 | 0 |