

Option A: Course Assessment

TED 4330 – Assessment of Mathematical Methods for Elementary Education Majors

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Description of the Assessment

Every UNO student (teacher candidate) in the elementary education undergraduate program is required to complete TED 4330. This course is blocked with two other courses (TED 4350 and TED 3350). Each course within the block is taught by a different instructor. As a requirement of this block of course teacher candidates participate in a practicum experience that takes place at a community elementary school under the direct supervision of P-6 classroom teacher.

The assignment has multiple parts.

Part One: Teacher candidates organize, summarize and draw conclusion about student mathematical understanding based on the data from a paper/pencil test (written responses to written items) they administered to all the P-6 students in their assigned practicum classroom.

Part Two: Teacher candidates analyze P-6 student mathematical understandings and misconceptions based on two student interviews.

Part Three: Based on the data collected from the paper/pencil assessment and the student interviews, teacher candidates create an appropriate mathematics lesson.

Part Four: Teacher candidates provide a written reflection of the assessment process that includes, a comparison what they learned in the interviews with what they learned from the paper/pencil assessment, as well as a reflection on what they learned about assessment from this assignment

Student Learning Outcomes

- Use multiple methods of assessment to assess of mathematical content (number and process standards as outlined by the National Council of Teachers of Mathematics.
- Understand elementary mathematics instruction and research-based instructional strategies.
- Understand basic misconceptions for various mathematics topics at the elementary level.
- Address student misconceptions and mistakes in mathematics understanding.

Rubric

	Target Provides strong evidence across multiple criteria	Approaching Target Provides some evidence	Below Target Provides little or no evidence
Data Representation and Analysis	Item Analysis Table and Items by Percent Correct Table accurately represent student assessments. Insightful analysis that includes trends and potential misconceptions related to students mathematical understanding of the concept.	Item Analysis Table or Items by Percent Correct Table do not accurately represent student assessments. Adequate analysis that includes trends and potential misconceptions related to students mathematical understanding of the concept.	Item Analysis Table and Items by Percent Correct Table do not accurately represent student assessments. Limited analysis of trends and potential misconceptions related to students mathematical understanding of the concept.
Data Analysis (Student Interviews)	Describes in detail two student interviews and analyzes both students mathematical understanding using knowledge about how students develop the math concept as described in the research articles.	Describes in general terms two student interviews and analyzes both students mathematical understanding using knowledge about how students develop the math concept as described in the research articles.	Inaccurately describes two student interviews and analyzes both students mathematical understanding using knowledge about how students develop the math concept as described in the research articles.
Connecting Assessment to Instruction	Effectively uses a variety of developmentally appropriate methods and materials to teach math concepts, skills and dispositions to meet the needs of learners and includes a detailed explanation of your thinking about how the lesson accurately connects to the assessment results.	Limited use of methods and materials to teach math concepts, skills and dispositions to meet the needs of learners and/or does not include a detailed explanation of your thinking about how the lesson connects to the assessment results.	Limited or developmentally inappropriate use of methods and materials to teach math concepts, skills and dispositions and/or does not include a detailed explanation of your thinking about how the lesson connects to the assessment results.
Reflection of Your Learning about Multiple Forms of Assessment	Reflection includes thoughtful understanding of purposes for using assessments, as well as advantages and disadvantages related to various forms of assessment.	Reflection includes general understanding of purposes for using assessments, as well as advantages and disadvantages related to various forms of assessment.	Reflection includes misunderstandings about understanding of purposes for using assessments, as well as advantages and disadvantages related to various forms of assessment.
Conventions	No spelling, grammar, or punctuation errors, uses correct APA format.	Minor spelling, grammar, and/or punctuation errors, uses correct APA format.	Some spelling, grammar, and/or punctuation errors, and does not use correct APA format.

Proficiency Target

The goal was for 90% of the students to meet target across at least four of the five categories assessed on the rubric.

Results and Timeline

September- Created assessment rubric draft and solicit feedback from other instructors in the blocked coursework

October-Shared rubric with teacher candidates and P-6 classroom teachers; Teacher candidates completed assignment connected to this rubric

November-Instructor collected and scored assignments using the rubric; Instructor begins to norm the rubric by jointly scoring several assignments with other instructors in the block and by identifying exemplars

December-Instructor shared assessment results with other faculty teaching in the block and P-6 classroom teachers for additional feedback on the instrument and to contribute to a discussion regarding teacher candidate performance

January- Implemented the assessment rubric into course TED 4330.

Mini-Grant Fund option:

A – Course Student Learning Outcomes Assessment

Interpretation and/or Next Steps for Program Improvement

This rubric provided consistency in the assessment and the feedback provided to the teacher candidates. This was important as there are multiple UNO instructors teaching in this blocked coursework and multiple P-6 teachers who guide candidates and also provided feedback to them during the practicum experience. This rubric aided in clarify expectations between the multiple parties: UNO instructor, P-6 classroom teachers, and teacher candidates.

In the category *Connecting Assessment to Instruction* 33% of students did not meet target. This is an area where there is opportunity for growth. A next step to address this category would be to explore ways to adjust the course curriculum to support students in increasing their understanding how to effectively uses a variety of developmentally appropriate methods and materials to teach math concepts, skills and dispositions in order to meet the needs of P-6 learners. Make modify course content so that students can more explicitly describe how lessons accurately connects to P-6 learner assessment results.

	Target Provides strong evidence across multiple criteria	Approaching Target Provides some evidence	Below Target Provides little or no evidence
Data Representation and Analysis	76 %	24%	0%
Data Analysis (Student Interviews)	86 %	14%	0%
Connecting Assessment to instruction	67%	33%	0%
Reflection of Your Learning about Multiple Forms of Assessment	95%	5%	0%
Conventions	100%	0%	0%

References

- National Council of Teachers of Mathematics (NCTM). 2014. *Principles to Action: Ensuring Mathematical Success for All*. Reston, VA: NCTM.
- Van De Walle, John A., Karen S. Karp, and Jennifer M. Bay-Williams. 2016. *Elementary and Middle School Mathematics: Teaching Developmentally*. 9th ed. Upper Saddle River, NJ: Pearson Education.

Assessment of Designing, Implementing, and Evaluating ECE Creative Arts

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Description of the Assessment

The Creative Arts in Early Childhood Education course is designed to offer teacher candidates with opportunities to develop and learn content knowledge, teaching strategies, environmental design elements, and assessment strategies to promote creativity and the arts in young children (ages birth through age eight). The course includes a three-week practicum experience in either preschool or kindergarten classrooms.

While engaged in the practicum experience during the semester, teacher candidates work with the classroom teacher to identify a children's book that is both relevant and engaging to young children. The book also should relate to current topics of learning in the classroom. Teacher candidates are expected to create lesson plans and teach using read-aloud strategies with children. Teacher candidates integrate the creative arts into their plans for the book activity following the read-aloud, meeting either the Nebraska Department of Education's (NDE) Early Learning Guidelines for the Creative Arts in Pre-K or NDE Kindergarten Creative Arts Standards.

Teacher candidates were advised to focus on the creative arts through the use one or more of the following: music, movement, drama, enactments, retellings, visual arts, props, visual aids, learning materials, other concrete materials or something else to help you engage children and develop vocabulary and meaning. The book activity served as a venue for children to apply the creative arts and further develop understanding of concepts addressed in the children's book.

For this assessment, teacher candidates video-taped themselves in the practicum experience while engaged in the read-aloud experience and a subsequent book activity with children, using NDE creative arts standards in objectives for teaching and learning. The assessment requires teacher candidates to submit a lesson plan, teaching video, assessment with analysis of the child's learning and art process, and reflection on the experience.

Student Learning Outcomes

- SLO #1: Teacher candidates use their knowledge, appropriate learning standards, and other resources in the creative arts to **design** developmentally meaningful and challenging curriculum for young children (NAEYC 5.3, 2012, p. 90).
- SLO # 2: Teacher candidates **implement** developmentally meaningful and challenging creative arts curriculum that promotes developmental and learning outcomes for every young child (NAEYC 5.3, 2012, p. 90)
- SLO #3: Teacher candidates **evaluate** children's creative arts processes and outcomes with developmentally meaningful assessment strategies that facilitate collecting data (NAEYC 5.3, 2012, p. 90)
- SLO #4: Teacher candidates **evaluate** next steps in teaching and learning by reflecting on teaching and children's learning: what went well and what should be changed in curriculum and teaching for next time; and what children learned and next steps in learning for children (NAEYC 5.3, 2012, p. 90).

Rubric

Criteria	Target Provides clarity and strength in writing; demonstrates depth in understanding and knowledge of a professional educator of each indicator through writing.	Approaching Target Demonstrates knowledge of key topics but depth of understanding is not as evident.	Below Target Demonstrates basic knowledge with need for development in explanation and elaboration.
Lesson Plans NAEYC 5c (design) (10 points)	Demonstrates professionalism and all components are designed to meet objectives; plans for effective teaching using developmentally appropriate practice.	Demonstrates that components in the lesson are adequately aligned and are designed for student learning.	Demonstrates that components in the lesson offer basic alignment with each other and are designed for learning.
Videotape of Teaching: NAEYC 5c (implement) (20 points)	Demonstrates implementation of developmentally appropriate practice with relationship-driven teaching and learning at the center. Evidence of instructional learning formats, productivity, and positive climate.	Demonstrates an adequate implementation of DAP, positive climate and other indicators of quality interaction are noted.	Demonstrates a basic implementation of DAP; positive climate and other indicators of quality interaction are noted.
Assessment (Analysis of Child Learning) NAEYC 5c (evaluate children) (30 points)	Uses data to demonstrate the child's learning process and outcomes. Analysis of next steps in development (and teaching) demonstrate a professional knowledge base of developmentally appropriate practices as substantiated in the literature.	Uses data to adequately demonstrate the child's learning process and outcomes. Analysis of next steps in development demonstrate an adequate knowledge base of DAP through connections with the literature.	Uses data to demonstrate essential basic facts about the child's learning process and outcomes. Analysis of next steps in development demonstrate a basic knowledge base of DAP and its rationale drawn from the literature.
Reflection NAEYC 5c (evaluate teaching and curriculum): (20 points)	Demonstrates professionalism, thoroughness, and excellence in planning and teaching efficacy as substantiated in the literature.	Offers an adequate view of planning and teaching efficacy, substantiated in the literature.	Provides a basic reflection on planning and teaching efficacy as linked to the literature.
APA Style, Conventions, & Appendix (10 points)	Includes professional-quality APA Style, organization, and flow. Includes labeled data and other support materials.	Includes adequate APA and documentation.	APA Style is basic; Basic Appendix

Proficiency Target

- Students will achieve an 80% or better on their overall scores to demonstrate proficiency levels.
- Criteria scored as either "Below Target" or "NA" (omitted from the paper) demonstrate lack of proficiency and serve as an indicator of areas in need of development.

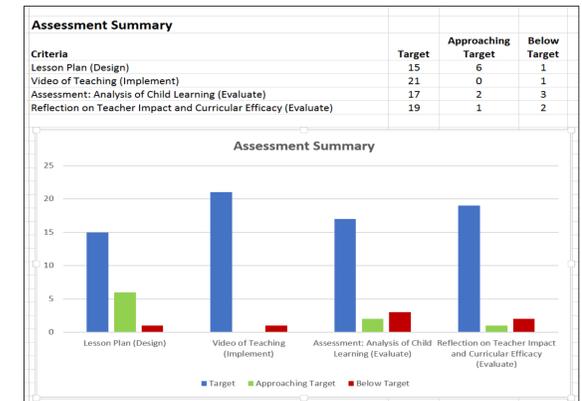
Results

Twenty-two teacher candidates were enrolled in the course and all completed the core assessment. Of those, two did not meet levels of 80% proficiency rate.

One notable theme in the data set emerged: overall, students' strengths were in teaching and interacting with children as evidenced by the 10-15 minutes of videotape of students implementing their projects with children (95% of the students were at "Target" in teaching implementations). Approximately 77% of students reached "Target" in either all criteria (n=13) or met three Target ratings plus one "Approaching Target" rating (n=4). It is possible that assessor subjectivity or bias could play into the scoring in this area. The joy of seeing students interacting in positive ways, coupled with a penchant to encourage them could account for scoring with a positive bent in the teaching criterion.

Alternatively, two overarching concerns emerged in the data set with regard to lesson planning and assessment. In lesson planning, close to 32% of students (n=7) did not meet "Target" ratings for planning the read-aloud and book activity for children with creative arts integrated in the plans. This could be due to the nature of the assignment which used the read-aloud as a venue for teaching the creative arts. The unexpected peak in off-target ratings in lesson planning could be due to the assignment's requirement to integrate subject areas (art and literacy) which may be difficult for a portion of students at this stage in development. In the assessment criterion, about 23% (n=5) were not at the "Target" level at the end of the semester. Although the assessment data subset that did not meet target was smaller than the same category subset in lesson planning, the assessment data demonstrated the most severe need as more than half of the students fell in the "below target" range (whereas the lesson planning data held only one of seven students in the "below target" range).

Interpretation and Next Steps for Course Improvement



Implications of the data are that in future courses, more attention could be paid to lesson planning in the creative arts. Using the creative arts as a positive and playful way to encourage children to apply language and literacy concepts associated with text provides young children with valuable application experiences supporting concept retention. It would be interesting to return to the raw data to identify whether or not a pattern exists across the seven lesson plans not meeting target.

Similarly, additional attention could be paid to assessment in future course offerings. Again, returning to those five papers not meeting target in this area may reveal a pattern across the data set that holds potential to focus teaching of assessment in future course offerings. Reviewing the full class data set, including those who met target, may identify a weakness across the class in assessment. I am very interested in identifying how the whole class, for example, approached analysis of young children's work in the creative arts especially in the following areas: children's creative processes, language used during the creative arts, conceptual understandings, and/or developmental processes.

References

- National Association of Early Childhood Teacher Educators. (2012). *2010 NAEYC standards for initial and advanced early childhood professional preparation programs: For use by associate, baccalaureate and graduate degree programs*. Washington DC: Author.
- Pelo, A. (2017). *The language of art: Inquiry-based studio practices in early childhood settings (2nd ed.)*. St. Paul, MN: Redleaf.
- Suskie, L. (2014). *Five dimensions of quality: A common sense guide to accreditation and accountability*. San Francisco: Jossey Bass.