

**NATIONAL SCIENCE TEACHERS ASSOCIATION
REPORT ON PROGRAM REVIEW DECISION**

First Rejoinder

Southern Connecticut State University, CT

Date of Review: 12/5/03

Program(s) Covered by this Review

Secondary Science (Chem/Bio/Phy/ES)

Program Type

Initial teaching License

Award or Degree Level(s)

Baccalaureate

Master's

SECTION I.

SPA Decision on Program(s):

(Specifics of decisions on each standard are noted in the second section of this report.)

Not nationally recognized; see comments section

Standards Met: 7, 8, & 10 with reservations.

Standards Not Met: 1, 2, 3, 4, 5, 6, & 9.

Program meets or exceeds 80% pass rate on state licensure exams: [not applicable]

Summary of Strengths:

We appreciate the honesty and forthrightness of the compiler.

Summary of Areas for Improvement:

Continued work on program level assessment instruments that reflect a science content perspective.

Directions for preparation of a rejoinder:

A rejoinder should be filed with NCATE if you feel additional information may result in a change in one or more ratings or removal of weaknesses. Include all supporting evidence needed for the reassessment. Do not refer to materials submitted previously. Please do not send a rejoinder unless explanations support a case for changing the rating(s). Before rejoining, you are strongly encouraged to visit the NSTA website and review NSTA expectations contained there. The URL is: <http://www.nvgc.vt.edu/nsta-ncate/nsta98.htm>. The page limits for the initial folio applies to rejoinders.

Number of rejoinder copies to submit: Please submit three copies.

SECTION II REPORT OF FINDINGS FOR EACH STANDARD

Rationale

Provide an analysis of the science content required in each licensure area showing that such content is consistent with the recommendations of the National Science Education Standards and NSTA recommendations, or state standards that are aligned with the NSES or other appropriate national professional standards, and any special the needs of the community you serve.

Weaknesses:

- § Not clear why content was selected in each licensure area.
- § Rationale is not consistent with the current goals and knowledge in the science education field

Additional Comments:

- We encourage the continued development of communication with the science faculty.
- We recommend that the future discussions with the science faculty continue along the line of alignment to national standards of science education. This includes the development of performance assessment instruments with criteria that match the NSTA standards.

Standard 1 Content

The program prepares candidates to structure and interpret the concepts, ideas and relationships in science that are needed to advance student learning in the area of licensure as defined by state and national standards developed by the science education community. Content refers to concepts and principles understood through science; concepts and relationships unifying science domains; processes of investigation in a science discipline; and applications of mathematics in science research.

NSTA/NCATE Expectations	Program Weaknesses	Reviewer Explanation and Comments
<p>Level 1, Standard 1: Performance Requirements. The program has structured experiences and/or requirements to ensure candidates are prepared and required to:</p> <ol style="list-style-type: none"> Demonstrate depth and breadth of subject matter knowledge aligned with state <u>and</u> national standards for their teaching discipline(s). Demonstrate knowledge of unifying concepts and relationships of science as defined by state and national standards. Demonstrate knowledge and skills needed to design, conduct and report investigations within their science discipline. Demonstrate the ability to apply mathematics to data analysis and problem solving within their science discipline. 	<p>The performance assessment(s) required fail to clearly address the goals or substance of dimensions a-d.</p> <p>It is not clear what actual evidence program reviewers will be looking for in order to make judgments about candidate performances for dimensions a-d.</p> <p>Minimum performance levels and/or acceptable criteria for judging candidate performances are not identified or ensured for dimensions a-d.</p>	<p>Not Met</p> <p>GPA and Praxis II together do define adequate measures of achievement.</p> <p>For dimension b, criteria and performance assessment instruments must be provided (e.g., lesson plan, field experience evaluation, and portfolio).</p> <p>For the graduate program, it is assumed that these dimensions are considered part of the candidates' science background. For the undergraduate program, it would be beneficial to have performance based assessment instruments that focus on dimensions a-d in the science domains.</p>
<p>Level 2: Assessment plan or system. The program has, or has plans for adequate multiple assessments of candidate</p>	<p>It is not clear that the assessments are unified into a stable comprehensive assessment system administered by the</p>	<p>Not met</p>

knowledge and abilities in relation to the requirements for the content standard as identified under Level 1, and shows how such evidence will be used to make decisions about the program and its candidates.	<p>program.</p> <p>It is not clear how the assessment system will lead to summative decisions on the candidates and the program.</p>	
Level 3: Data collection and decision-making. The program systematically collects valid and reliable performance data and provides summary evidence of candidate preparation in relation to each of the dimensions of the standard and uses this evidence to make decisions about its candidates.	<p>Performance data are not being systematically collected.</p> <p>Summary performance evidence is not provided demonstrating an adequate level of preparation in relation to each dimension of the standard.</p> <p>Evidence is not provided on use of the data to make decisions about candidates.</p>	Not met
Level 4: Assurance of preparation and program self-assessment. Summary evidence affirms that candidates from this program are prepared in relation to the standard and the program is engaged in data-based self-assessment intended to improve its practices	<p>Summary evidence is incomplete or inadequate to affirm that all candidates are prepared in relation to the standard.</p> <p>Summary evidence is incomplete or inadequate to affirm that the program is engaged in data based self-assessment.</p>	Not met

Standard 2 Nature of Science

The program prepares teachers to engage students in activities to define the values, beliefs and assumptions inherent to the creation of scientific knowledge within the scientific community, and contrast science to other ways of knowing. Nature of science refers to characteristics distinguishing science from other ways of knowing; characteristics distinguishing basic science, applied science, and technology; processes and conventions of science as a professional activity; and standards defining acceptable evidence and scientific explanation.

NSTA/NCATE Expectations	Program Weaknesses	Reviewer Explanation and Comments
<p>Level 1, Standard 2: Performance Requirements. The program has structured experiences and/or requirements to ensure candidates are prepared and required to:</p> <ul style="list-style-type: none"> a. Demonstrate knowledge of the conventions of scientific evidence and explanation as well as the philosophical and historical nature of science. b. Engage students effectively in studies of the nature of science and conventions of scientific explanation 	<p>The program does not have program-level performance assessments in place or planned for dimensions a and b.</p> <p>Program-level performance assessments are not clearly or completely described for dimensions a and b.</p> <p>The number or quality of performance assessments is not sufficient to show that candidates are adequately prepared in relation to dimensions a and b.</p> <p>The performance assessment(s) required fail to clearly address the goals or substance of dimensions a and b.</p> <p>It is not clear what actual evidence program reviewers will be looking for in order to make judgments about candidate performances for dimensions a and b.</p>	<p>Not met</p> <p>Conducting laboratory assignments and developing of lesson plans do not provide evidence that candidates understand these dimensions.</p> <p>The reading about the “Nature of Science” is just a reading and does not contain a performance assessment to show candidate knowledge.</p> <p>There is no provision or instrument to evaluate how the candidates will engage K-12 students.</p>

	<p>Minimum performance levels and/or acceptable criteria for judging candidate performances are not identified or ensured for dimensions a and b.</p> <p>There is no requirement that student performance data be used for determining the effective performance of candidates in the classroom for dimension 2.b.</p>	
<p>Level 2: Assessment plan or system. The program has means or plans to systematically assess and evaluate candidate preparation and teaching of the nature of science and to use this evidence to make decisions about the program and its candidates.</p>	<p>It is not clear that assessments are unified into a stable comprehensive assessment system administered by the program.</p> <p>It is not clear how the assessment system will lead to summative decisions on the candidates and the program.</p>	Not met
<p>Level 3: Data collection and decision-making. The program systematically collects performance data and presents summary evidence of the willingness and ability of candidates to engage students in effective study of the nature of science and uses this evidence to make decisions about its candidates.</p>	<p>Data are not systematically collected.</p> <p>Summary evidence is not provided demonstrating an adequate level of preparation in relation to each dimension of the standard.</p> <p>Distribution of scores indicates assessments may not be adequately discriminating different levels of performance.</p> <p>Evidence is not being used to make decisions about candidates.</p>	Not met
<p>Level 4: Assurance of preparation and program self-assessment. Summary</p>	<p>Summary evidence is incomplete or inadequate to affirm that all candidates are</p>	Not met

evidence affirms that candidates from this program are prepared in relation to the standard and the program is engaged in data-based self-assessment intended to improve its practices	prepared in relation to the standard. Summary evidence is incomplete or inadequate to affirm that the program is engaged in data based self-assessment.	
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Standard 3 Inquiry

The program prepares candidates to engage students regularly and effectively in science inquiry and facilitate understanding of the role inquiry plays in the development of scientific knowledge. Inquiry refers to questioning and formulating solvable problems; reflecting on, and constructing, knowledge from data; collaborating and exchanging information while seeking solutions; and developing concepts and relationships from empirical experience.

NSTA/NCATE Expectations	Program Weaknesses	Reviewer Explanation and Comments
<p>Level 1, Standard 3: Performance Requirements. The program has structured experiences and/or requirements to ensure candidates are prepared and required to:</p> <ul style="list-style-type: none"> a. Demonstrate knowledge of scientific inquiry as a way of developing and imparting scientific knowledge. b. Engage students effectively in the study of phenomena through inquiry as appropriate for their grade and abilities. 	<p>The program does not have program-level performance assessments in for dimensions a & b.</p> <p>Minimum performance levels and/or acceptable criteria for judging candidate performances are not identified or ensured for dimensions a & b.</p> <p>There is no requirement that student performance data be used for determining the effective performance of candidates in the classroom for dimension 3.b.</p>	<p>Met with reservations</p> <p>The scientific inquiry assignments and instruments (Appendix III) need to be used and referenced for dimension a. These performance based instruments need to be part of the programmatic plan.</p> <p>Include the draft inquiry rubric provided the council of State Science Supervisors.</p> <p>The student teaching assessment needs to include the science specific nature of this (and other) standards.</p>
<p>Level 2: Assessment plan or system. The program has means or plans to systematically assess and evaluate candidate performances in relation to inquiry, and to use this evidence to make decisions about the program and its candidates.</p>	<p>It is not clear that assessments are unified into a stable comprehensive assessment system administered by the program.</p> <p>It is not clear how the assessment system will lead to summative decisions on the candidates and the program.</p>	<p>Not met</p>
<p>Level 3: Data collection and decision-making. The program systematically</p>	<p>Data are not systematically collected.</p>	<p>Not met</p>

<p>collects data and presents summary evidence of the willingness and ability of candidates to engage students in appropriate and effective science inquiry and uses this evidence to make decisions about its candidates.</p>	<p>Summary evidence is not provided demonstrating an adequate level of preparation in relation to each dimension of the standard.</p> <p>Distribution of scores indicates assessments may not be adequately discriminating different levels of performance.</p> <p>Evidence is not being used to make decisions about candidates.</p>	
<p>Level 4: Assurance of preparation and program self-assessment. Summary evidence affirms that candidates from this program are prepared in relation to the standard and the program is engaged in data-based self-assessment intended to improve its practices</p>	<p>Summary evidence is incomplete or inadequate to affirm that all candidates are prepared in relation to the standard.</p> <p>Summary evidence is incomplete or inadequate to affirm that the program is engaged in data based self-assessment.</p>	<p>Not met</p>

Standard 4 Context of Science

The program prepares candidates to relate science to the daily lives and interests of students and to a larger framework of human endeavor and understanding. The context of science refers to relationships among systems of human endeavor including science and technology; relationships among scientific, technological, personal, social and cultural values; and the relevance and importance of science to the personal lives of students

NSTA/NCATE Expectations	Program Weaknesses	Reviewer Explanation and Comments
<p>Level 1, Standard 4: Performance Requirements. The program has structured experiences and/or requirements to ensure candidates are prepared and required to:</p> <ul style="list-style-type: none"> a. Demonstrate knowledge of the relationships among science and other human values and endeavors. b. Engage students effectively in the study of the relationship of science to other human values and endeavors. c. Relate science to the personal lives, needs and interests of their students. 	<p>The program does not have program-level performance assessments in place or planned for dimensions b and c.</p> <p>Program-level performance assessments are not clearly or completely described for dimensions b and c.</p> <p>The number or quality of performance assessments is not sufficient to show that candidates are adequately prepared in relation to dimensions b and c.</p>	<p>Met with reservations</p> <p>The Evaluation of Student Teaching Performance instrument is not science specific and does not focus on these dimensions, rather it focuses on broad conceptions related to these dimensions.</p>
<p>Level 2: Assessment plan or system. The program has means or plans to systematically assess and evaluate candidate performances in relation to study of the contexts of science and to use this evidence to make decisions about the program and its candidates.</p>	<p>It is not clear that assessments are unified into a stable comprehensive assessment system administered by the program.</p> <p>It is not clear how the assessment system will lead to summative decisions on the candidates and the program.</p>	<p>Not met</p>
<p>Level 3: Data collection and decision-making. The program systematically collects data and presents summary</p>	<p>Data are not systematically collected.</p> <p>Summary evidence is not provided</p>	<p>Not met</p>

<p>evidence of the willingness and ability of candidates to engage students in effective study of the multiple contexts of sciences and uses this evidence to make decisions about its candidates.</p>	<p>demonstrating an adequate level of preparation in relation to each dimension of the standard.</p> <p>Distribution of scores indicates assessments may not be adequately discriminating different levels of performance.</p> <p>Evidence is not being used to make decisions about candidates.</p>	
<p>Level 4: Assurance of preparation and program self-assessment. Summary evidence affirms that candidates from this program are prepared in relation to the standard and the program is engaged in databased self-assessment intended to improve its practices.</p>	<p>Summary evidence is incomplete or inadequate to affirm that all candidates are prepared in relation to the standard.</p> <p>Summary evidence is incomplete or inadequate to affirm that the program is engaged in data based self-assessment.</p>	<p>Not met</p>

Standard 5 Skills of Teaching

The program prepares candidates to create a community of diverse student learners who can construct meaning from science experiences and possess a disposition for further inquiry and learning. Skills of Teaching refers to science teaching actions, strategies and methodologies; interactions with students that promote learning and achievement; effective organization of classroom experiences; use of advanced technology to extend and enhance learning; and the use of prior conceptions and student interests to promote new learning.

NSTA/NCATE Expectations	Program Weaknesses	Reviewer Explanation and Comments
<p>Level 1, Standard 5: Performance Requirements. The program has structured experiences and/or requirements to ensure candidates are prepared and required to demonstrate the ability to</p> <ul style="list-style-type: none"> a. Use diverse and effective science teaching actions, strategies and methodologies. b. Promote learning and achievement. c. Organize classroom experiences effectively d. Use advanced technology to extend and enhance learning. e. Use prior conceptions and student interests to promote new learning. 	<p>Program-level performance assessments are not clearly or completely described for dimensions a-e.</p> <p>The number or quality of performance assessments is not sufficient to show that candidates are adequately prepared in relation to dimensions a-e.</p> <p>It is not clear what actual evidence program reviewers will be looking for in order to make judgments about candidate performances for dimensions a-e.</p> <p>There is no requirement that student performance data be used for determining the effective performance of candidates in the classroom for dimension 5.c.</p>	<p>Not met</p> <p>The “rubric which reflects State and National Science Education Standards” is not available.</p> <p>The portfolio and journal assessment instruments are not available and do not present criteria for assessment.</p> <p>The Evaluation of Student Teaching Performance can be used for dimensions a-e.</p>
<p>Level 2: Assessment plan or system. The program has the means or a plan to systematically assess and evaluate the ability of candidates to organize the</p>	<p>It is not clear that assessments are unified into a stable comprehensive assessment system administered by the program.</p>	<p>Not met</p>

classroom and teach effectively as defined by the standard and to use this evidence to make decisions about the program and its candidates.	It is not clear how the assessment system will lead to summative decisions on the candidates and the program.	
Level 3: Data collection and decision-making. The program systematically collects data and presents summary evidence of the ability and willingness of candidate abilities to perform effectively in relation to the elements in this standard and uses this evidence to make decisions about its candidates.	<p>Data are not systematically collected.</p> <p>Summary evidence is not provided demonstrating an adequate level of preparation in relation to each dimension of the standard.</p> <p>Distribution of scores indicates assessments may not be adequately discriminating different levels of performance.</p> <p>Evidence is not being used to make decisions about candidates.</p>	Not met
Level 4: Assurance of preparation and program self-assessment. Summary evidence affirms that candidates from this program are prepared in relation to the standard and the program is engaged in data-based self-assessment intended to improve its practices	<p>Summary evidence is incomplete or inadequate to affirm that all candidates are prepared in relation to the standard.</p> <p>Summary evidence is incomplete or inadequate to affirm that the program is engaged in data based self-assessment.</p>	Not met

Standard 6 Curriculum

The program prepares candidates to develop and apply a coherent, focused science curriculum that is consistent with state and national standards for science education and appropriate for addressing the needs, abilities and interests of students. Science curriculum refers to an extended framework of goals, plans, materials, and resources for instruction and the instructional context, both in and out of school, within which pedagogy is embedded.

NSTA/NCATE Expectations	Program Weaknesses	Reviewer Explanation and Comments
<p>Level 1, Standard 6: Performance Requirements. The program has structured experiences and/or requirements to ensure candidates are prepared and required to:</p> <ul style="list-style-type: none"> a. Develop coherent, meaningful goals, plans, and materials and find resources. b. Relate plans and resources to professionally developed state and national standards, including the National Science Education Standards. c. Plan and develop science curriculum addressing the needs, interests and abilities of all students at the appropriate level. 	<p>Program-level performance assessments are not clearly or completely described for dimensions a-c.</p> <p>The number or quality of performance assessments is not sufficient to show that candidates are adequately prepared in relation to dimensions a-c.</p> <p>The performance assessment(s) required fail to clearly address the goals or substance of dimensions a-c.</p> <p>It is not clear what actual evidence program reviewers will be looking for in order to make judgments about candidate performances for dimensions a-c.</p> <p>Minimum performance levels and/or acceptable criteria for judging candidate performances are not identified or ensured for dimensions a-c.</p>	<p>Not met</p> <p>The Evaluation of Student Teaching Performance instrument may be used to satisfy part of the requirements for achieving this Standard.</p>
<p>Level 2: Assessment plan or system. The</p>	<p>It is not clear that assessments are unified</p>	<p>Not met</p>

<p>program has the means or a plan to systematically assess and evaluate the ability of candidates to plan and provide a curriculum consistent with state and national standards and to use this evidence to make decisions about the program and its candidates.</p>	<p>into a stable comprehensive assessment system administered by the program.</p> <p>It is not clear how the assessment system will lead to summative decisions on the candidates and the program.</p>	
<p>Level 3: Data collection and decision-making. The program systematically collects data and presents summary evidence of the ability of candidates in relation to science curriculum and uses this evidence to make decisions about its candidates.</p>	<p>Data are not systematically collected.</p> <p>Summary evidence is not provided demonstrating an adequate level of preparation in relation to each dimension of the standard.</p> <p>Distribution of scores indicates assessments may not be adequately discriminating different levels of performance.</p> <p>Evidence is not being used to make decisions about candidates.</p>	<p>Not met</p>
<p>Level 4: Assurance of preparation and program self-assessment. Summary evidence affirms that candidates from this program are prepared in relation to the standard and the program is engaged in data-based self-assessment intended to improve its practices</p>	<p>Summary evidence is incomplete or inadequate to affirm that all candidates are prepared in relation to the standard.</p> <p>Summary evidence is incomplete or inadequate to affirm that the program is engaged in data based self-assessment.</p>	<p>Not met</p>

Standard 7 Social Context

The program prepares candidates to relate science to the community and to use human and institutional resources in the community to advance the education of their students in science. The social context of science teaching refers to the social and community support network within which science teaching and learning occur; relationship of science teaching and learning to the needs and values of the community; and involvement of people and institutions from the community in the teaching of science.

NSTA/NCATE Expectations	Program Weaknesses	Reviewer Explanation and Comments
Level 1, Standard 7: Performance Requirements. The program has structured experiences and/or requirements to ensure candidates are prepared and required to: <ol style="list-style-type: none"> a. Know and understand the values and needs of the community and their effect on the teaching and learning of science. b. Use community human and institutional resources to advance the learning of science in the classroom and field. 		Met
Level 2: Assessment plan or system. The program has a functional plan to systematically assess and evaluate the ability and willingness of candidates to relate science to the community and to include community resources in teaching and to use this evidence to make decisions about the program and its candidates.	It is not clear how the assessment system will lead to summative decisions on the candidates and the program.	Met with reservations. It should be explained how this assessment will serve as a gate keeping item.
Level 3: Data collection and decision-making. The program systematically collects data and presents summary	Data are not systematically collected. Summary evidence is not provided	Not met

<p>evidence of the ability and willingness of candidates to relate science to the community and use community resources in teaching, and uses these data to make decisions about its candidates.</p>	<p>demonstrating an adequate level of preparation in relation to each dimension of the standard.</p> <p>Distribution of scores indicates assessments may not be adequately discriminating different levels of performance.</p> <p>Evidence is not being used to make decisions about candidates.</p>	
<p>Level 4: Assurance of preparation and program self-assessment. Summary evidence affirms that candidates from this program are prepared in relation to the standard and the program is engaged in data-based self-assessment intended to improve its practices</p>	<p>Summary evidence is incomplete or inadequate to affirm that all candidates are prepared in relation to the standard.</p> <p>Summary evidence is incomplete or inadequate to affirm that the program is engaged in data based self-assessment.</p>	<p>Not met</p>

Standard 8 Assessment

The program prepares candidates to use a variety of contemporary assessment strategies to evaluate the intellectual, social, and personal development of the learner in all aspects of science. Assessment refers to the alignment of goals, instruction and outcomes; measurement and evaluation of student learning in a variety of dimensions; and the use of outcome data to guide and change instruction.

NSTA/NCATE Expectations	Program Weaknesses	Reviewer Explanation and Comments
Level 1, Standard 8: Performance Requirements. The program has structured experiences and/or requirements to ensure candidates are prepared and required to: a. Align science goals, instruction and outcomes. b. Use a variety of contemporary science assessment strategies to determine student needs and levels of learning and development. c. Use assessment appropriately to determine, guide and change science instruction		Met
Level 2: Assessment plan or system. The program has the means or a plan to systematically assess and evaluate the ability and willingness of candidates to use a variety of assessment tools and strategies effectively and to use this evidence to make decisions about the program and its candidates.	It is not clear how the assessment system will lead to summative decisions on the candidates and the program.	Met with reservations It should be explained how this assessment will serve as a gate keeping item, not just candidates “not be given a passing grade for student teaching.”
Level 3: Data collection and decision-making. The program systematically	Data are not systematically collected.	Not met

<p>collects data and presents summary evidence of the ability and willingness of candidates to use a variety of assessment tools and strategies effectively, and uses these data to make decisions about its candidates.</p>	<p>Summary evidence is not provided demonstrating an adequate level of preparation in relation to each dimension of the standard.</p> <p>Distribution of scores indicates assessments may not be adequately discriminating different levels of performance.</p> <p>Evidence is not being used to make decisions about candidates.</p>	
<p>Level 4: Assurance of preparation and program self-assessment. Summary evidence affirms that candidates from this program are prepared in relation to the standard and the program is engaged in data-based self-assessment intended to improve its practices</p>	<p>Summary evidence is incomplete or inadequate to affirm that all candidates are prepared in relation to the standard.</p> <p>Summary evidence is incomplete or inadequate to affirm that the program is engaged in data based self-assessment.</p>	<p>Not met</p>

Standard 9 Environment for Learning

The program prepares candidates to design and manage safe and supportive learning environments reflecting high expectations for the success of all students. Learning environments refers to the physical spaces within which learning of science occurs; psychological and social environment of the student engaged in learning science; treatment and ethical use of living organisms; and safety in all areas related to science instruction.

NSTA/NCATE Expectations	Program Weaknesses	Reviewer Explanation and Comments
<p>Level 1, Standard 9: Requirements. The program has structured experiences and/or requirements to ensure candidates are prepared and required to:</p> <ul style="list-style-type: none"> a. Create and maintain a psychologically and socially safe and supportive learning environment. b. Manage the activities and materials of science safely in storage areas, labs and field. c. Keep and use living organisms as in the classroom in a safe, ethical and appropriate manner 	<p>The program does not have program-level performance assessments in place or planned for dimensions b and c.</p> <p>Program-level performance assessments are not clearly or completely described for dimensions b and c.</p> <p>The number or quality of performance assessments is not sufficient to show that candidates are adequately prepared in relation to dimensions b and c.</p> <p>The performance assessment(s) required fail to clearly address the goals or substance of dimensions b and c.</p> <p>It is not clear what actual evidence program reviewers will be looking for in order to make judgments about candidate performances for dimensions b and c.</p> <p>Minimum performance levels and/or acceptable criteria for judging candidate</p>	<p>Not met</p> <p>How are candidates evaluated in EDU 493 and 452? Where are the science specific requirements and criteria?</p>

	performances are not identified or ensured for dimensions b and c.	
Level 2: Assessment plan or system. The program has the means or a plan to systematically assess and evaluate the knowledge and abilities of candidates to design and manage safe and supportive learning environments and to use this evidence to make decisions about the program and its candidates.	<p>It is not clear that assessments are unified into a stable comprehensive assessment system administered by the program.</p> <p>It is not clear how the assessment system will lead to summative decisions on the candidates and the program.</p>	Not met
Level 3: Data collection and decision-making. The program systematically collects data and presents summary evidence of the knowledge and abilities of candidates to design and manage safe and supportive learning environments, and uses these data to make decisions about its candidates.	<p>Data are not systematically collected.</p> <p>Summary evidence is not provided demonstrating an adequate level of preparation in relation to each dimension of the standard.</p> <p>Distribution of scores indicates assessments may not be adequately discriminating different levels of performance.</p> <p>Evidence is not being used to make decisions about candidates.</p>	Not met
Level 4: Assurance of preparation and program self-assessment. Summary evidence affirms that candidates from this program are prepared in relation to the standard and the program is engaged in data-based self-assessment intended to improve its practices	<p>Summary evidence is incomplete or inadequate to affirm that all candidates are prepared in relation to the standard.</p> <p>Summary evidence is incomplete or inadequate to affirm that the program is engaged in data based self-assessment.</p>	Not met

Standard 10 Professional Practice

The program prepares candidates to participate in the professional community, improving practice through their personal actions, education and development. Professional practice refers to knowledge of, and participation in, the activities of the professional community; ethical behavior consistent with the best interests of students and the community; reflection on professional practices and continuous efforts to ensure the highest quality of science instruction; and willingness to work with students and new colleagues as they enter the profession.

NSTA/NCATE Expectations	Program Weaknesses	Reviewer Explanation and Comments
<p>Level 1, Standard 10: Requirements. The program has structured experiences and/or requirements to ensure candidates are prepared and required to:</p> <ul style="list-style-type: none"> a. Know and participate in professional organizations and activities of the science education community beyond the classroom. b. Behave ethically and in best interests of preK-12 students and the community. c. Engage in reflective practices and make continuous efforts to improve in practice. d. Work willingly with peers, supervisors and others in a professional manner. 		<p>Met</p> <p>The journal is not a performance based assessment with criteria.</p>
<p>Level 2: Assessment plan or system. The program has the means or a plan to systematically assess and evaluate the engagement of candidates in reflection and professional practices and use this evidence</p>	<p>It is not clear how the assessment system will lead to summative decisions on the candidates and the program.</p>	<p>Met with reservations</p>

to make decisions about the program and its candidates.		
Level 3: Data collection and decision-making. The program systematically collects data and presents summary evidence of the degree to which candidates engage in behaviors identified by this standard and use these data to make decisions about its candidates.	<p>Data are not systematically collected.</p> <p>Summary evidence is not provided demonstrating an adequate level of preparation in relation to each dimension of the standard.</p> <p>Distribution of scores indicates assessments may not be adequately discriminating different levels of performance.</p> <p>Evidence is not being used to make decisions about candidates.</p>	Not met
Level 4: Assurance of preparation and program self-assessment. Summary evidence affirms that candidates from this program are prepared in relation to the standard and the program is engaged in data-based self-assessment intended to improve its practices	<p>Summary evidence is incomplete or inadequate to affirm that all candidates are prepared in relation to the standard.</p> <p>Summary evidence is incomplete or inadequate to affirm that the program is engaged in data based self-assessment.</p>	Not met

Summary and Self-Analysis

Discuss how you have used the data collected from candidate assessment and other sources to change and improve your program since the last review, and briefly identify your goals for improvement over the next five years.

Weaknesses:

- § No evidence the program uses diverse sources of data as the basis for making changes in the program.
- § No evidence of well-defined goals for the science education program as a whole based on a careful analysis of need.
- § No evidence of a concrete long-term program improvement plan.

Additional Comments:

- The ideas for performance based instruments are in place, how ever specific criteria and performance levels need to be delineated.
- The number of performance assessments is not sufficient to show that candidates are adequately prepared in relation to all Standards.
- There is a heavy reliance on the Evaluation of Student Teaching Performance for achievement of most Standards, and there should be additional instruments to triangulate data.
- We commend the University with the work they have achieved thus far in developing communication lines with the science faculty and departments.
- We concur with the assessment that there is quite a bit of work to be done.