

Secondary Education - Science MAT

Group 1: Cycle 1 - Fall 2017 - Summer 2019

Currently status is: Report Accepted

ASSESSMENT REPORT FOR Group 1: Cycle 1 - Fall 2017 - Summer 2019

Mission Statement

The mission of the Science MAT program is to prepare professional educators of the highest quality for South Carolina certifications grades 9-12 through coursework, practica, and internships designed to: advance content knowledge; plan for science instruction; practice the teaching of science; and develop professional knowledge and skills.

Goal 1.

The goal of the Science MAT program is to prepare completers with the content knowledge and pedagogical skills to become licensed secondary science educators in the State of South Carolina, to positively impact secondary students' science learning, and to engage in leadership and/or collaborative roles in science and science education professional learning communities.

Science MAT Matrix

Curriculum

The attached matrix shows how the secondary science program assesses students in the program.

Learning Outcome 1.

Effective teachers of science understand and articulate the knowledge and practices of contemporary science. They interrelate and interpret important concepts, ideas, and applications in their fields of licensure.

Measures and Criteria

Science Content Praxis Test State Licensure Exam

Undergrad science GPA & Content Analysis Form

Electronic Portfolio: Content Knowledge

Methods

Data are maintained on this program in the College of Education Chalk and Wire assessment management system (maintained by program faculty and the Office of Assessment and Accreditation). Data from courses are submitted into the system by degree candidates and scored by instructors or other appropriate personnel throughout the semester of key assessment application (as indicated on the List of Key Assessments table).

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Carnes, faculty advisors from Biology, Chemistry and Physics, and select university supervisors in preparation for Quality Assurance Committee review. The questions guiding analysis of data will be:

- * To what extent do candidates demonstrate the program's goal(s) and meet the standards of the National Science Teachers Association at admission, midpoint, and program completion?
- * What do our candidates clearly do well and in what areas do they need more assistance?
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Results

Praxis II Data

	2016-2017 Cohort (n=4)	2017-2018 Cohort (n=5)	2018-2019 Cohort (n=7)
	Range: 152-177	Range: 153-187	Avg. Score: 179
Biology	Avg. Score: 167.7	Avg. Score: 167	100% pass rate
Test Code: 5235		100% pass rate	n=2
SC passing score: 148	100% pass rate	n=5	
	n=3		
Chemistry			Range: 175-182

Test Code: 5245	Score: 178.5
SC passing score: 152	100% pass rate
	n=2

General Science: Content Knowledge

Test Code: 5435
 SC passing score: 150

PLT: 7-12	Range: 166-191	Range: 163-186	Range: 177-185
Test Code: 5624	Avg. Score: 179.3	Avg. Score: 174	Avg. Score: 180.8
SC Passing Score: 157	100% pass rate	100% pass rate	100% pass rate
	n=3	n=5	n=4

As shown in Table 1, all but one MAT chemistry candidate have passed their science Praxis II content test and PLT tests. For several years, we have incorporated the NSTA Learning Center in our methods courses in the summer and required students to complete at least one 10-hour Sci-Pack (online content instruction) into the EDSE 553 methods course. We encourage students to choose an area of weakness to focus on for their 10-hour content Sci-Pack after taking a pre-assessment that is part of the NSTA Learning Center. The addition of the Praxis II content assessment as a program admission test option has given us an early content assessment tool that can be required of students that have weaker science content GPAs or course grades.

MAT Candidates	Content GPA Range	Average Content GPA	% Meeting expectations
2017-2018 Cohort (n=5)	2.35-3.45	2.96	(min. GPA of 2.5) 80%

MAT Candidates	Content GPA Range	Average Content GPA	% Meeting expectations
2018-2019 Cohort (n=7)	2.3-4.0	2.98	(min. GPA of 2.5) 86%

Science Content Course Grades

MAT Candidates

17-2018 Cohort	GPA Range	Average GPA	% Meeting expectations
=5)			(min. GPA of 2.
DL 575: Marine Ecology (n=2)	3.5 – 4.0	3.8	100%
DL 650: Biochemical Evolution (n=1)	4.0	4.0	100%
DL 712: DNA Transactions and Gene pression (n=1)	4.0	4.0	100%
ISC 754: Biomedical Biochemistry I (n=1)	3.0	3.0	100%
ISC 702: Medical Cell Biology I (n=1)	2.5	2.5	100%
DL 770: Current Topics: Molecrl Biol (n=2)	1.5-4.0	2.8	50%
DL 302I: Cell and Molecular Biology boratory (n=1)	3.5	3.5	100%
IVR 571: Conservation Biology (n=2)	3.5 – 4.0	3.8	100%
DL 758: Research (n=2)	4.0	4.0	100%
DL 575: Marine Ecology (n=3)	3.0-4.0	3.3	100%
DL 652: Evolutionary Biology (n=1)	3.0	3.0	100%
DL 671: Plant Responses to the Environment =2)	2.0-3.5	2.8	50%
DL 766: Evolutionary Biology (n=1)	4.0	4.0	100%
DL 505: Developmental Biology (n=1)	4.0	4.0	100%
DL 534: Animal Behavior (n=1)	1.0	1.0	0%
DL 571: Conservation Biology (n=1)	3.5	3.5	100%
DL 610: Hallmarks of Cancer (n=1)	3.5	3.5	100%
DL 665: Human Molecular Genetics (n=1)	2.5	2.5	100%
DL 704: Topics: Genetics & Dev Biology =1)	4.0	4.0	100%

2018-2019 Cohort

(n=7)	GPA Range	Average GPA	% Meeting expectations (min. GPA of 2.5)
BIOL 576: Marine Fisheries Ecology (n=1)	3.5	3.5	100%
BIOL 552: Population Genetics (n=1)	3.5	3.5	100%
BIOL 630: Biology of Birds (n=1)	4.0	4.0	100%
BIOL 758: Research (n=1)	4.0	4.0	100%
BIOL 546: Biochemistry/Molecular Biology II (n=1)	2.0	2.0	0%
BIOL 550: Bacteriology (n=1)	2.5	2.5	100%
BIOL 550L: Bacteriology Laboratory (n=1)	3.0	3.0	100%
BIOL 671: Plant Responses to Environment (n=2)	2.0	2.0	0%
BIOL 630: Biology of Birds (n=1)	3.0	3.0	100%
BIOL 704: Topics: Genetics & Dev Biology (n=1)	3.0	3.0	100%
BIOL 570: Principles of Ecology (n=1)	4.0	4.0	100%
BIOL 652: Evolutionary Biology (n=1)	4.0	4.0	100%
BIOL 650: Biochemical Evolution (n=1)	4.0	4.0	100%
BIOL 667: Molecular and Genetic Mechanisms of Disease Pathogenesis (n=1)	3.0	3.0	100%
CHEM 623: Intro Environmental Chemistry (n=2)	4.0	4.0	100%
CHEM 729: Special Topics in Analytical Chemistry (n=1)	4.0	4.0	100%
CHEM 704: Energy, Equilib & Chem Change (n=1)	4.0	4.0	100%
CHEM 709: Spec Topics in Chem Educat (n=1)	4.0	4.0	100%
CHEM 705: Modern Instrmntl Meths Chemist (n=1)	4.0	4.0	100%
CHEM 655: Metabolic Biochemistry of Human Disease (n=1)	3.0	3.0	100%
CHEM 751: Biosynthesis of Macromolecules (n=1)	3.5	3.5	100%
CHEM 621: Instrumental Analysis (n=1)	3.0	3.0	100%
CHEM 753: Enzymology & Protein Chem (n=1)	3.0	3.0	100%

Tables 1 and 2 show the MAT students undergraduate GPAs and the percent of students meeting the expectation of a 2.5 undergraduate GPA at admission. All but one MAT candidate met this expectation. Exceptions are sometimes made for some otherwise qualified students after an initial interview and an analysis of the candidates' complete application file (recommendations, test scores, writing sample). The program faculty (Science and Education) evaluate candidates on an individual basis (based on their completed application files) to determine if a conditional admittance is needed and this will require that candidates with GPAs lower than 2.5 pass their Praxis II test prior to being fully admitted into the program and prior to their starting their internship experiences.

Tables 3 and 4 outline the science content course grades for MAT candidates once enrolled in the graduate program. MAT candidates are required to take at least 15 hours of graduate level science content once enrolled in the program. Two biology MAT students in 2017 received a C+ in a graduate level biology course. All other MAT students in 2017-2019 received B or better grades in their graduate science courses as part of the program.

**Portfolio –
Content**

MAT Candidates

	# Does Not Meet	#Meets	# Exceeds
Spring 2017 (n=4)			
Science Content Part I (NSTA 1a)	0	1	3
Science Content Part II (NSTA 1a)	0	0	4
Science Technology Part I (NSTA 1b)	0	1	3
Science Technology Part II (NSTA Standard 1b)	0	1	3
Science Standards Part I (NSTA Standard 1c)	0	0	4
Science Standards Part II (NSTA Standard 1c)	0	0	4

	# Does Not Meet	#Meets	# Exceeds
Spring 2018 (n=5)			
Science Content Part I (NSTA 1a)	0	0	5
Science Content Part II (NSTA 1a)	0	0	5
Science Technology Part I (NSTA 1b)	0	0	5

Science Technology Part II (NSTA Standard 1b)	0	0	5
Science Standards Part I (NSTA Standard 1c)	0	0	5
Science Standards Part II (NSTA Standard 1c)	0	0	5

Spring 2019 (n=4)	# Does Not Meet	#Meets	# Exceeds
Science Content Part I (NSTA 1a)	0	0	4
Science Content Part II (NSTA 1a)	0	0	4
Science Technology Part I (NSTA 1b)	0	2	2
Science Technology Part II (NSTA Standard 1b)	0	0	4
Science Standards Part I (NSTA Standard 1c)	0	0	4
Science Standards Part II (NSTA Standard 1c)	0	0	4

All students meet or exceed criteria for Part I and Part II of the rubric over the three years of data collection. This portion of the candidates' electronic portfolio provides additional evidence of students' science content understanding and the ability to translate this knowledge into standards-based lesson plans and instruction.

Use of Results

100% of our students passed the Praxis II content assessment, met grade point average requirements and earned a C or higher in all their graduate science courses taken in the program. The acceptance of the Praxis II as an admission test option has helped to increase the pass rate of our students on the Praxis II. The program is pleased with the results, so no changes are recommended at this time.

Learning Outcome 2.

Effective teachers of science understand how students learn and develop scientific knowledge. Preservice teachers use scientific inquiry to develop this knowledge for all students.

Measures and Criteria

Model-based Inquiry Unit Plan

Methods

Data are maintained on this program in the College of Education Chalk and Wire assessment management system (maintained by program faculty and the Office of Assessment and Accreditation). Data from courses are submitted into the system by degree candidates and scored by instructors or other appropriate personnel throughout the semester of key assessment application (as indicated on the List of Key Assessments table).

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Results

Unit

Plan

MAT Candidates

Fall 2016 (n=4)	# Does Not Meet	#Meets	# Exceeds
Timeline (NSTA 2a)	0	0	4
Making Sense of Activities D2 (NSTA 2b)	0	2	2
Eliciting Student Ideas D1 (NSTA 2c)	0	0	4
Evidence-Based Explanations D3 (NSTA 2c)	0	0	4
Reflection (NSTA 3a)	0	1	3
Inquiry (NSTA 3b)	0	0	4
Assessment Plan (NSTA 3c)	0	2	2
Safe Environment (NSTA 3d)	0	0	4

Fall 2017 (n=5)	# Does Not Meet	#Meets	# Exceeds
Timeline (NSTA 2a)	0	0	5
Making Sense of Activities D2 (NSTA 2b)	0	2	3
Eliciting Student Ideas D1 (NSTA 2c)	0	0	5
Evidence-Based Explanations D3 (NSTA 2c)	0	0	5
Reflection (NSTA 3a)	0	0	5
Inquiry (NSTA 3b)	0	0	5
Assessment Plan (NSTA 3c)	0	0	5
Safe Environment (NSTA 3d)	0	0	5

Fall 2018 (n=7)	# Does Not Meet	#Meets	# Exceeds
Timeline (NSTA 2a)	0	1	6
Making Sense of Activities D2 (NSTA 2b)	0	2	5
Eliciting Student Ideas D1 (NSTA 2c)	0	0	7
Evidence-Based Explanations D3 (NSTA 2c)	0	1	6
Reflection (NSTA 3a)	0	0	7
Inquiry (NSTA 3b)	0	0	7
Assessment Plan (NSTA 3c)	0	1	6
Safe Environment (NSTA 3d)	0	0	7

The model-based inquiry format of the unit requires candidates to design instruction that starts with students' initial understandings (analysis of K-12 students' initial models) and uses inquiry activities to build conceptual understanding of a complex phenomenon (and associated science standards) through a process of model revision, argumentation, and student discussion.

Use of Results

Student unit plans were unchanged this year. The program is pleased with the results, so no changes are recommended at this time.

Learning Outcome 3.

Effective teachers of science are able to plan for engaging all students in science learning by setting appropriate goals that are consistent with knowledge of how students learn science and are aligned with state and national standards. The plans reflect the nature and social context of science, inquiry, and appropriate safety considerations. Candidates design and select learning activities, instructional settings, and resources--including science-specific technology, to achieve those goals; and they plan fair and equitable assessment strategies to evaluate if the learning goals are met.

Measures and Criteria

Model-based Inquiry Unit Plan

Methods

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Results

Unit

Plan

MAT Candidates

Fall 2016 (n=4)	# Does Not Meet	#Meets	# Exceeds
Timeline (NSTA 2a)	0	0	4
Making Sense of Activities D2 (NSTA 2b)	0	2	2
Eliciting Student Ideas D1 (NSTA 2c)	0	0	4
Evidence-Based Explanations D3 (NSTA 2c)	0	0	4
Reflection (NSTA 3a)	0	1	3
Inquiry (NSTA 3b)	0	0	4
Assessment Plan (NSTA 3c)	0	2	2
Safe Environment (NSTA 3d)	0	0	4

Fall 2017 (n=5)	# Does Not Meet	#Meets	# Exceeds
Timeline (NSTA 2a)	0	0	5
Making Sense of Activities D2 (NSTA 2b)	0	2	3
Eliciting Student Ideas D1 (NSTA 2c)	0	0	5
Evidence-Based Explanations D3 (NSTA 2c)	0	0	5
Reflection (NSTA 3a)	0	0	5
Inquiry (NSTA 3b)	0	0	5
Assessment Plan (NSTA 3c)	0	0	5
Safe Environment (NSTA 3d)	0	0	5

Fall 2018 (n=7)	# Does Not Meet	#Meets	# Exceeds
Timeline (NSTA 2a)	0	1	6
Making Sense of Activities D2 (NSTA 2b)	0	2	5
Eliciting Student Ideas D1 (NSTA 2c)	0	0	7
Evidence-Based Explanations D3 (NSTA 2c)	0	1	6
Reflection (NSTA 3a)	0	0	7

Inquiry (NSTA 3b)	0	0	7
Assessment Plan (NSTA 3c)	0	1	6
Safe Environment (NSTA 3d)	0	0	7

The model-based inquiry format of the unit requires candidates to design instruction that starts with students' initial understandings (analysis of K-12 students' initial models) and uses inquiry activities to build conceptual understanding of a complex phenomenon (and associated science standards) through a process of model revision, argumentation, and student discussion.

Use of Results

Student unit plans were unchanged this year. The program is pleased with the results, so no changes are recommended at this time.

Learning Outcome 4.

Effective teachers of science can, in a P-12 classroom setting, demonstrate and maintain chemical safety, safety procedures, and the ethical treatment of living organisms needed in the P-12 science classroom appropriate to their area of licensure.

Measures and Criteria

Student Teaching Observation and Safety Module

Methods

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Results

Safety Observation and Module

MAT Candidates – Safety Module

Fall 2016 (n=4)	# Does Not Meet	#Meets	# Exceeds
Lesson Plan (NSTA 4a)	0	0	4
Safety Plan (NSTA 4b)	0	0	4
Paper (NSTA 4c)	0	0	4
Animal Lesson Plan (NSTA 4c)	0	0	4

Fall 2017 (n=5)	# Does Not Meet	#Meets	# Exceeds
Lesson Plan (NSTA 4a)	0	0	5
Safety Plan (NSTA 4b)	0	0	5
Paper (NSTA 4c)	0	0	5
Animal Lesson Plan (NSTA 4c)	0	0	5

Fall 2018 (n=6)	# Does Not Meet	#Meets	# Exceeds
Safety Plan (NSTA 4b)	0	2	4
Safe Preparation/Lesson Plan (NSTA 4a)	0	0	6
Paper/Ethical Decision-Making (NSTA 4c)	0	0	6
Treatment of Organism/Animal Lesson Plan (NSTA 4c)	0	0	6

MAT Candidates – Safety Observation

Fall 2016 (n=4)	# Does Not Meet	#Meets	# Exceeds
Safe Preparation (NSTA 4a)	0	0	4
Safety Plan (NSTA 4b)	0	0	4
Treatment of Organisms (NSTA 4c)	0	0	4

Fall 2017 (n=5)	# Does Not Meet	#Meets	# Exceeds
Safe Preparation (NSTA 4a)	0	0	5
Safety Plan (NSTA 4b)	0	0	5

Treatment of Organisms (NSTA 4c)	0	0	5
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Fall 2018 (n=6)	# Does Not Meet	#Meets	# Exceeds
Safe Preparation (NSTA 4a)	0	2	4
Safety Plan (NSTA 4b)	0	0	6
Treatment of Organisms (NSTA 4c)	0	0	6

The data show that all students meet or exceeded rubric criteria across the years of data collection. The data also show that more students are exceeding criteria than just meeting criteria. This result may be due to further clarification of the assignment description for students and the implementation of Flinn Scientific Safety videos and certification in 2017. As of 2017, all students were required to watch Flinn's High School Safety Certification videos, a 7-hour certification program, and pass the assessments aligned to the program in EDSE 732 methods course.

Use of Results

Students continued to earn the Flinn Scientific 7-hour safety course certification and complete the safety module in EDSE 732. All students met objectives for safety. The program is pleased with the results, so no changes are recommended at this time.

Learning Outcome 5.

Effective teachers of science provide evidence to show that P-12 students' understanding of major science concepts, principles, theories, and laws have changed as a result of instruction by the candidate and that student knowledge is at a level of understanding beyond memorization. Candidates provide evidence for the diversity of students they teach.

Measures and Criteria

Electronic Portfolio: Student Learning Sections

Methods

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Portfolio – Student Learning

MAT Candidates

Spring 2017 (n=4)	# Does Not Meet	#Meets	# Exceeds
Science Content Part I (NSTA 5a)	0	1	3

Science Content Part II (NSTA 5a)	0	0	4
Assessment Part I (NSTA 5a)	0	1	3
Assessment Part II (NSTA 5a)	0	0	4
Nature of Science Part I (NSTA 5b)	0	3	1
Nature of Science Part II (NSTA 5b)	0	2	2
Inquiry Part I (NSTA 5c)	0	2	2
Inquiry Part II (NSTA 5c)	0	0	4
Specific Science Technology Part I (NSTA 5c)	0	1	3
Specific Science Technology Part II (NSTA 5c)	0	0	4
	# Does Not Meet	#Meets	# Exceeds
Spring 2018 (n=5)			
Science Content Part I (NSTA 5a)	2	1	2
Science Content Part II (NSTA 5a)	0	0	5
Assessment Part I (NSTA 5a)	0	3	2
Assessment Part II (NSTA 5a)	0	1	4
Nature of Science Part I (NSTA 5b)	3	2	0
Nature of Science Part II (NSTA 5b)	0	1	4
Inquiry Part I (NSTA 5c)	1	4	0
Inquiry Part II (NSTA 5c)	0	0	5
Specific Science Technology Part I (NSTA 5c)	1	3	1
Specific Science Technology Part II (NSTA 5c)	0	0	5

	# Does Not Meet	#Meets	# Exceeds
Spring 2019 (n=5)			
Science Content Part I (NSTA 5a)	0	2	3
Science Content Part II (NSTA 5a)	0	0	0
Assessment Part I (NSTA 5a)	0	3	2
Assessment Part II (NSTA 5a)	0	0	0
Nature of Science Part I (NSTA 5b)	0	1	4
Nature of Science Part II (NSTA 5b)	0	0	0
Inquiry Part I (NSTA 5c)	0	5	0

Inquiry Part II (NSTA 5c)	0	0	0
Specific Science Technology Part I (NSTA 5c)	3	1	1
Specific Science Technology Part II (NSTA 5c)	0	0	0

The portfolio consists of a part I and a part II. The portfolio (pt.1) is collected and assessed at the completion of Internship A (EDSE 781A). The portfolio is divided into 7 sections based on the NSTA standards and course goals. The candidates must receive an acceptable rating on 6 of the 7 standards to start their Internship B. The second part (pt. 2) of the portfolio is to be completed by the end of the last semester of the MT/MAT program. The second part of the portfolio is an expansion of the first part and is intended to show how the candidate has matured as a science educator. The second part of the portfolio serves as the comprehensive exam for the program and candidates must receive an acceptable rating on all the standards in order to pass the comprehensive exam. During Internship B, candidates for the MT/MAT degrees complete the South Carolina required Enhanced Assisting, Developing, and Evaluating Professional Teaching (ADEPT) program as part of two internships at three different clinical settings. As part of Internship B (EDSE 781B) candidates conduct the Unit Work Sample in Science project. This unit work sample is developed in conjunction with the required seminar (EDSE 584/586) and implemented within the high school classroom internship setting. As part of the Enhanced ADEPT Unit Work Sample candidates are expected to collect, analyze, and reflect on pre-assessment, formative assessment, and summative assessment data for a 10-day unit of study to demonstrate how their instruction impacts student achievement. Evidence from this unit work sample is included in the candidates' final portfolios along with other assessment evidence collected during their internships.

Over the past three years, all candidates that completed the program have received acceptable or target ratings on their final Part II electronic portfolio. Unacceptable ratings on candidates' Part I portfolios indicate that they did not collect appropriate pre-instruction and post-instruction assessments to show evidence of student learning in their first Internship A experience. Program faculty provide candidates with written feedback on each component of their Part I portfolio at the end of Internship A so that each candidate knows which areas to work on during their student teaching. Candidates often do not collect evidence of students' initial understanding of a topic and thus have to improve on this standard through new student learning evidence during student teaching. All students meet all student learning standards at the end of our program through their unit work sample data or other pre and post student data collected during their student teaching. In Fall 2018, with the implementation of the 1 credit hour EDSE 585 seminar (EDUC 632 for this first semester), students are being required to turn in pre and post student content data and pre and post student nature of science data as part of this course during their Internship A. This requirement will require students to develop and implement pre-assessments as well as to analyze student learning during their early internship experience. The areas most rated as not met during the Part I portfolio assessment include the use of science-specific technology (8), nature of science (5), inquiry (3), and assessment (3). In summer 2019, our program hired a new professor with expertise in technology to teach the EDTE 671 science technology course with hopes that a change in curriculum and professor expertise would help to better prepare students for using technology in their internships. However, this course is offered in the summer when our candidates do not have access to student learning data. In 2019, additional focus (integration of virtual laboratory simulation into unit plan, focus on data collection and analysis practices) has been added to

EDSE 732 during the Advanced Science Methods course to encourage students to implement and assess students' content knowledge when engaging in inquiry with science-specific technology during their A internship. As stated above, nature of science and content pre and post student assessments have been added as a requirement of the EDSE 585 fall seminar course.

Use of Results

In 2018, we added a 1 credit hour EDSE 585 seminar in the Fall semester (separated student teaching seminar into 585 and 586) and included an assignment within this course in which students must collect nature of science pre and post student data and pre and post science content assessment data that is connected to their instruction of students. This has helped to encourage students to focus on assessment and student learning in their A internship. All students met objectives for Part II of their portfolio. More focus on science specific technology and NOS within the EDSE 732 course and EDSE 585 modules is needed to improve the Part I portfolio scores. All students attended the Midlands Technology Summit as part of the Summer 2018 and 2019 summer EDTE 671 technology course. The program is pleased with the results, so no changes are recommended at this time.

Learning Outcome 6.

Effective teachers of science strive continuously to improve their knowledge and understanding of the ever changing knowledge base of both content, and science pedagogy, including approaches for addressing inequities and inclusion for all students in science. They identify with and conduct themselves as part of the science education community.

Measures and Criteria

Electronic Portfolio: Science and Science Education Professionalism

Methods

Data are maintained on this program in the College of Education Chalk and Wire assessment management system (maintained by program faculty and the Office of Assessment and Accreditation). Data from courses are submitted into the system by degree candidates and scored by instructors or other appropriate personnel throughout the semester of key assessment application (as indicated on the List of Key Assessments table).

A Data Summary Report which aggregates data by key assessment criteria for at least three applications is provided to the program annually by the Office of Assessment and Accreditation. In addition, faculty receive annual reports on data from surveys of interns, coaching teachers, and supervisors, and data from surveys of completers and employers of completers. Data are analyzed by faculty with recommendations for program change annually as described here:

The Secondary Science Program faculty along with Dr. Nathan Carnes, faculty advisors from Biology, Chemistry and Physics, university supervisors, and coaching teachers will analyze a summary of key assessment data at least once annually. A further collaborative analysis will take place once every three years when data will be analyzed by the faculty and Dr. Nathan Carnes, faculty advisors from Biology, Chemistry and Physics, and select university supervisors in preparation for Quality Assurance Committee review. The questions guiding analysis of data will be:

* To what extent do candidates demonstrate the program's goal(s) and meet the standards of the National Science Teachers Association at admission, midpoint, and program completion?

* What do our candidates clearly do well and in what areas do they need more assistance?

* What changes can be made in the program to assist candidates to be prepared to fulfill the program's mission?

The evaluation of key assessment data resulting from faculty analysis is used to make program changes which are reported annually to the Office of Assessment and Accreditation using the Program Changes Form. Any program changes are reported to the program's department chair and facilitated through the Assistant Dean for Enrollment Management and Academic Program Development.

Besides being used for ongoing program assessment, Program Assessment Plans, Data Summary Sheets, and Program Change Forms are:

* Submitted annually to the USC Office of Institutional Research, Assessment, and Analytics via the COE Office of Assessment and Accreditation

* Reviewed by the Professional Education Unit's Quality Assurance Committee in the rotation review cycle (at least once every three years or more frequently, as needed, to meet assessment standards)

* Used to develop program reports for the Specialized Professional Associations (e.g., ACEI, NCTM) once every seven years

* Included in the CAEP review (once every seven years)

Results

Portfolio – Professionalism

MAT

Candidates

Spring 2017 (n=4)	# Does Not Meet	#Meets	# Exceeds
Science Knowledge Part I (NSTA 6a)	0	2	2
Science Knowledge Part II (NSTA 6a)	0	2	2
Science Education Part I (NSTA 6b)	0	2	2
Science Education Part II (NSTA 6b)	0	0	4

Spring 2018 (n=5)	# Does Not Meet	#Meets	# Exceeds
Science Knowledge Part I (NSTA 6a)	1	2	2
Science Knowledge Part II (NSTA 6a)	0	0	5
Science Education Part I (NSTA 6b)	1	0	4
Science Education Part II (NSTA 6b)	0	0	5

Spring 2019 (n=5)	# Does Not Meet	#Meets	# Exceeds
Science Knowledge Part I (NSTA 6a)	0	2	3
Science Knowledge Part II (NSTA 6a)	0	0	0
Science Education Part I (NSTA 6b)	0	2	3
Science Education Part II (NSTA 6b)	0	0	0

All students meet or exceed criteria for Part II of the rubric and all but one student met or exceeded criteria for Part I of the rubric over the three years of data collection. One biology MAT student did not complete the Professionalism portion of their portfolio for the Part 1 assessment (they are allowed to complete 6/7 standards) and thus received an unacceptable rating. Students are provided formal written feedback on Part I of their portfolio and given suggestions for areas to improve and local opportunities available to meet this professionalism standard (e.g., attending monthly science seminars in the College of Arts and Science at USC, attending state or regional science education conferences, attending school district professional development, etc.).

Use of Results

Students are invited to local state science and mathematics conferences as well as making students aware of free local conferences (Midlands Summit, Secondary Matters) and free educational opportunities at USC. We also invite in local school district personnel to attend internship seminar orientations and as part of EDSE 585 this year we added two school visits to Brookland Cayce High School on October 4 and Westwood High School on November 1 to introduce students to educational rounds and additional professional experiences and school magnet programs. The program is pleased with the results, so no changes are recommended at this time.

