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Abstract

Common Core State Standards (CCSS) provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them succeed. In 2010 the standards were designed to be robust and relevant to the real world, reflecting the knowledge and skills that young people need to succeed in school and careers. In 2013 the Next Generation Science Standards (NGSS) in connection with the CCSS developed by the American Association for the Advancement of Science and the National Research Council. The NGSS was designed to focus on the selection and use of appropriate content, activities, instructional strategies, and assessments necessary for meeting the diverse needs of early childhood, elementary, and secondary school students. One of the signature projects requires participants to use the Common Core State Standards to design grade-specific instructional lessons and design appropriate materials for implementing the grade-specific science standards. Therefore, as a result of participating in the diverse Climate Education presentations (that included information and resources provided in the NASA Workshops), the candidates were able to effectively design and implement daily lesson plans and Thematic Units that related to specific Climate Education concepts.

Methodology

Through participation in the NASA Innovations in Climate Education Summer Workshops (2011, 2012, 2013), Dr. Jaggers received a wealth of diverse science information and instructional activities that served as a foundation for presenting the Climate Education concepts to candidates enrolled in her classes. Specifically, she made several Climate Education presentations to the candidates enrolled in ED 452. ED 452-Advanced Seminar Method and a 6-hour undergraduate course that designed to focus on the selection and use of appropriate content, activities, instructional strategies, and assessments necessary for meeting the diverse needs of early childhood, elementary, and secondary school students. One of the signature projects requires candidates to use the Common Core State Standards to design grade specific instructional lessons and design appropriate materials for implementing the grade specific science standards. Therefore, as a result of participating in the diverse Climate Education presentations (that included information and resources provided in the NASA Workshops), the candidates were able to effectively design and implement daily lesson plans and Thematic Units that related to specific Climate Education concepts.

The-sequent preparation and implementation process included the following:

• First, Dr. Jaggers provided an introduction to Climate Education by using the CCSS developed by the American Association for the Advancement of Science and the National Research Council. The NGSS was designed to focus on the selection and use of appropriate content, activities, instructional strategies, and assessments necessary for meeting the diverse needs of early childhood, elementary, and secondary school students. One of the signature projects requires participants to use the Common Core State Standards to design grade-specific instructional lessons and design appropriate materials for implementing the grade-specific science standards. Therefore, as a result of participating in the diverse Climate Education presentations (that included information and resources provided in the NASA Workshops), the candidates were able to effectively design and implement daily lesson plans and Thematic Units that related to specific Climate Education concepts.

• As a follow-up, the candidates reviewed, critiqued, and had in-class discussions of several articles on Climate Education Concepts.

• The candidates also made in-class oral presentations that focused on their specific Climate Education concept that they had selected for their lesson. This phase helped to ensure that the candidates were very knowledgeable about their topic.

• Then the candidates reviewed the Common Core State Standards and selected the appropriate standard that served as a basis for their grade specific instructional lesson.

• Next, the candidates developed their instructional lessons and created the specific teacher-made devices to enhance the learning process.

• After presenting the instructional lessons through a micro-teaching activity in the university classroom, the candidates implemented their instructional lesson (using their teacher-made device) in the grade appropriate classroom at the on-site partnership school.

• The candidates presented their instructional lessons and teacher-made devices at the 2012 Dr. Helen Richards Smith American Education Seminar that was a polyvoc that was held jointly with Elizabeth City State University.

• Dr. Jaggers will present the Climate Change projects (design and implemented by the candidates) at the 2013 Louisiana Reading and Language Conference in New Orleans, Louisiana. The focus of the presentation is to demonstrate how the Climate Change concepts and specific Reading/Literacy skills can be enhanced through the diverse activities.

Analysis

The Climate Change Signature project was assessed by using several assessment measures. First, the Oral Presentation Rubric was used during an in-class activity to allow students to present and discuss their Climate Change concept to promote an increased knowledge and understanding of their selected Climate Change concept. Second, the Written Lesson Plan Rubric was used to assess the design of the appropriate instructional objective, activities, materials, and learning device(s), and the grade specific Common Core State Standard, the Climate Change concept, and the specific Reading/Literacy skills(s) emphasized. Third, the On-Site Lesson Evaluation Rubric was used to assess the candidate’s ability to effectively implement the lesson. This component specifically emphasized how knowledgeable the candidate was about their specific Climate Change concept and how they effectively used the strategies and resources to implement the lesson in addition to their teacher-made device. The Impact on Student Learning data was reflected in the exemplary student work samples that the candidates shared as they Höfted feedback from the results of their implementation of the Climate Change Signature project at the on-site partner school.

As a result of participating in the Climate Education Signature project, the assessment results revealed that the candidates gained a great deal of knowledge about the impact of Climate Change Concepts on our everyday lives. The candidates also stressed that they now have an increased awareness and understanding of “how to” influence Climate Education throughout the instructional process. They further emphasized that they have a greater awareness of need of emphasize Climate Education concepts through-out the P-12 Curriculum. Finally, the candidates expressed that their interactions with the candidates have a great deal about Climate Change Concepts. The candidates also stated that they have learned some of the following comments: “The Climate Change was a topic that I had not learned a lot about Climate Change”, “3/4 I have a better understanding of how Climate Change really makes a difference in our lives and what we do.”

Conclusion

The NASA Innovations was to use the resources and activities presented during the NASA Innovations in Climate Education Summer Workshops (2011, 2012, and 2013). The purpose was to enable the candidates to plan and implement Climate Education instructional lessons in the partnership schools. The implementation process was very successful based on the formal and informal feedback from the candidates and the students that were involved.

Future Work

The Climate Change Signature Project will continue to be implemented in the Teacher Preparation program because of the very positive feedback received and the very positive impact of the program on the candidates and the students.