Elizabeth Robbins

# Next Generation Science Standards: A New Framework for Authentic Science Instruction

Module 1 Project Checkpoint

As I work through Module 1 I honestly wish I had taken this course five years ago. As a person who finds change difficult and only after thorough contemplation, the adoption of new science standards by my state has been thought provoking and sometimes frustrating. My goal in taking this course is to better understand the rationale behind the creation of these new science standards and to be better at incorporating these ideals into my chemistry classroom. The key takeaways that I wish to share with my colleges would be that the use of NGSS as a new framework guiding our teaching of science would help our students become better-informed citizens, to inspire students into pursuing science and/or engineering careers, and to better guide our students’ learning based on their own interests and experiences.

Within the article one of the main rationales behind creating these new frameworks was the idea that “By the end of the 12th grade, students should have gained sufficient knowledge of the practices, crosscutting concepts, and core ideas of science and engineering to engage in public discussions on science-related issued, to be critical consumers of scientific information related to their everyday lives, and to continue to learn about science throughout their lives. “ (A Framework for K-12 Science Education, 2012, p9) This takeaway resonate because as educators one of our core goals is to help inform our students so as they grow and leave school they will feel confident in making decisions about their future. As they become adults, we wish to prepare our students to feel confident as they make decisions about their future and the way they live their lives and the consumers they become.

A second takeaway from the readings was the goal to encourage all students that they can be successful in pursuit of a career as a scientist or an engineer. By providing students with a strong basis of scientific knowledge as they work their way from kindergarten through high school and an idea how these sciences can be channeled into a satisfying, challenging and productive career. “Research suggests that personal interest, experience, and enthusiasm – critical to children’s learning of science at school or in other settings – may also be linked to later educational and career choices. (A Framework for K-12 Science Education, 2012, p28)

Making these connections to a students personal interests and experiences helps us as educators. As students discover these connections they become more enthusiastic in the discoveries and understanding in their science classes. The committee crating the new frameworks anticipated “that the insights gained and interests provoked from studying an engaging in the practices of science and engineering during their K-12 schooling should help students see how science and engineering are instrumental in addressing major challenges that confront society today, such as generating sufficient energy, preventing and treating diseases, maintaining supplies of clean water and food, and solving the problem of global environmental change.” (A Framework for K-12 Science Education, 2012, p9) As educators we should be creating lessons that inspire and engage our students.

As I progress through this course I hope to better understand the reasoning behind the creation and adoption of science frameworks based on the NGSS. As I complete this course I will know I have met my goals if I am able to communicate what I have learned to my colleagues and use what I have learned how to better create lessons for my high school science students. Lessons that can allow students to not just learn about a particular concept but to figure out the how and why of that particular phenomena.

The course objectives that best align with my key takeaway’s and the goals I have set for myself are to better understand the essential features of *A Framework for K-12 Science Education* and how it should effect science teaching going forward. Being able to better interpret the NGSS performance expectations and use them to help plan my instruction focusing on a smaller or core ideas in chemistry. Understanding that students should be building on their prior knowledge and abilities should influence their instruction. Integrating the use of anchoring phenomena in some lessons or using investigative phenomena within a unit of learning should allow all students no matter their background can find meaning and be supported in their learning of science.

Works Cited

1. "1 A New Conceptual Framework." National Research Council. 2012. *A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas*. Washington, DC: The National Academies Press. doi: 10.17226/13165.
2. "2 A New Conceptual Framework." National Research Council. 2012. *A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas*. Washington, DC: The National Academies Press. doi: 10.17226/13165.