Dear Shari Templeton,

I would like to take this opportunity to reiterate my endorsement for the adoption, and subsequent implementation of the Next Generation Science Standards (NGSS) by supporting Bill LD 49 “An Act to Improve Science and Engineering Education for Maine’s Students.”

Adopting the NGSS will enhance and improve science education for all students in Maine by promoting coherent, rigorous, and content-rich science learning experiences. Furthermore, the increased emphasis on scientific thinking and critical analysis included in the NGSS will prepare our students as critical thinkers and innovators in science, technology, and engineering. Success in these fields is essential to the future of Maine’s economy.

The NGSS, which are based on the National Research Council’s Framework for K-12 Science Education (2012), differ from previous versions of national and state standards in that the authors call for science teaching and learning situated at the nexus of three major dimensions of science: (1) Disciplinary Core Ideas, (2) Science and Engineering Practices, and (3) Crosscutting Concepts. When translated into practice, the shift from previous versions of standards to the NGSS can be characterized by a shift from classrooms in which students learn about science to classrooms in which students figure out core science ideas (National Research Council, 2012). In other words, rather than memorizing science facts, the authors of the NGSS call for science teaching and learning in which students engage in the practices of arguing from evidence, mechanistically explaining scientific phenomena, and modeling complex problems.

Based on prior research in the field of science education, the potential impacts of such shifts on student learning may include, but are not limited to: (a) increased in-depth understanding of core science ideas; (b) increased complex reasoning and critical thinking skills, and (c) increased ability to engage in the core practices of argumentation, explanation, and modeling (Krajcik, Codere, Dahiash, Bayer, & Mun, 2014; National Research Council, 2012; NGSS Lead States, 2013; Pruitt, 2014). Developing a generation of students who are capable of critically analyzing evidence, developing sound arguments, and listening carefully and considering the arguments of others will not only positively impact the fields of science, technology, engineering, and mathematics, but also the fields of civics and politics.

As a professional in the field of science education, I have witnessed, first-hand, the impact the adoption of the standards has on both students and teachers. My doctoral work focused on supporting elementary teachers as they shift instruction to align with the recommendations called for by the National Research Council (2012). In addition, I work with a national group called the Next Generation Science Exemplar System (NGSX – www.ngsx.org). In my work with NGSX, I train professional development providers and teachers to shift instruction to align with the reforms. Teachers, administrators, and professional development providers involved in these trainings regularly comment on the invigorating impact the adoption of the NGSS has had on their teaching and on student learning. Effective teachers getting ready to leave the field of education due to frustration or discouragement have been rejuvenated and reinvigorated. As we know, the single most important predictor of a student’s success in education is the quality of the teacher (Stronge, 2010). We must
do everything we can to recruit and retain quality educators. The shifts reflected in the NGSS invigorate and excite quality science educators, increasing the likelihood of retention. The energy and enthusiasm of effective teachers translates directly to students as students learn to love science. Through the NGSS, students’ natural curiosity for science and engineering is encouraged and supported.

When I moved to Maine in 2015, I was immediately struck by some of the clear and obvious gaps in science education experienced by many of the students of Maine. I have grown increasingly concerned by the lack of rigor and coherence in science education throughout Maine. In my work in Vermont, New Hampshire, Delaware, Connecticut, Michigan, Kentucky, and Illinois, all states that have adopted the NGSS, the increased rigor, coherence, and emphasis on complex reasoning and critical thinking is evident. For the future of Maine’s economy, which will likely be focused in the fields of science, technology, engineering, and mathematics, we must provide our students with improved science learning experiences. For the sake of our children and for the sake of Maine, I urge you to support Bill LD 49.

I ensure you that my efforts will be focused on supporting districts, schools, and teachers as they implement the NGSS. Through my work with Thomas College and NGSX, I intend to support professional educators through the opportunities and challenges involved in adoption and implementation. I look forward to this work and to our continued positive impact on the children of Maine.

I would be happy to serve on the review committee, provide public testimony, or serve as a resource during the decision-making process.

I look forward to the adoption and implementation of the NGSS in Maine. I am happy to answer questions or provide further support for the NGSS.

Sincerely,

Katahdin Cook Whitt

Dr. Katahdin Cook Whitt
Assistant Professor of Education, Thomas College
National Facilitator and Researcher, NGSX
Franklin County Resident

References