

Next Generation Science Standards Are they Right for Kansas?

That is the question this board must answer and vote on in the near future. This board member is one who believes that adoption of the NGSS would not be good for Kansas schools and Kansas students.

While my concerns and objections to our current science standards, because of their lack of objectivity in the teaching of evolution, are well known and unchanged, the NGSS, to my disappointment, have done nothing to alleviate those concerns. Any public educational presentation on issues that directly intersect with religion is constitutionally required to be objective and not favor one religious persuasion over another. It is my view that The *Framework* and *NGSS* do not meet this requirement, and are, therefore, subject to a probable constitutional challenge. For that reason alone, I am opposed to adoption by this board of the Next Generation Science Standards.

If that were the only reason for objecting to the NGSS, it would, in my view, be enough to not adopt the NGSS. However, there are several other good reasons to reject these standards. The following points summarize my main objections to adopting the NGSS for Kansas Science standards.

- **NGSS dramatically narrow the subject matter covered:** These standards narrow the focus to only three areas, ecology, evolution and molecular biology. They give only scant, if any, attention, even in the high school standards, to the important disciplines of human anatomy, physiology, botany, zoology, and microbiology. It is very difficult to understand the rationale for such dramatic narrowing of the science disciplines in the NGSS, and I do not believe they lay an adequate foundation of science education for Kansas students. We need to be graduating students with a broader understanding of science, rather than less.
- **Heavy on methodology and light on science knowledge:** The NGSS are heavily focused on the methodology of teaching science and weak on encouraging a broad base of science knowledge. This may be due to the fact that this effort was mostly led by representatives of schools of education, with little influence from the science community. While project-based learning is an effective teaching methodology, the implication that current science education relies too heavily on

memorization of facts is a misrepresentation of the state of science education in KS schools and an insult to the many, many teachers who regularly conduct labs and field trips and encourage students to learn by doing and asking questions. I believe there is no basis for the assumption that the NGSS are more likely to result in better educated students than our current standards. Ultimately, a good education in science, or any other subject area, takes place when students have good teachers, who know their discipline content. We have no reason to believe that the NGSS will result in better teachers. I fear that future Kansas students under NGSS will have an even more inadequate understanding of science than current graduates.

- **The NGSS development process was not open and transparent:** As a condition of becoming a lead state for development of the NGSS, the State Board president and members of the writing and review committees were required to sign an agreement of confidentiality regarding the work of the writing and review committees. That has always been troubling to me, and I objected to the signing of that agreement by our president. State board of education members, of all people, should have been made fully aware of such dramatic changes being made, and their input should have been deemed important to the considerations of the standards writers. But, unfortunately, we were not in the confidentiality loop. While it is true that, during the development stage, we received almost monthly "updates" from our staff and some of the review committee members, they were never able, or willing, to publicly answer for this board questions and concerns that I personally raised and shared with the board. We have no way of knowing what other suggestions, questions or concerns were received and disregarded by the standards writers.
- **NGSS are unnecessarily controversial and contentious:** Both evolution and human-caused global climate change are presented dogmatically, without any acknowledgement of the ongoing scientific debate on these issues. This non-objective, unscientific approach to education standards amounts to little more than indoctrination in political correctness. The Fordham Institute indicates that the climate change activists are already claiming these standards are a win for their side. There is no value in, or reason for, treating these topics in such an unbalanced, non-objective way, but the writers did so, fully recognizing the contentious and controversial nature of their work. As controversial as were the 1996 national science standards, the NGSS are much more so, and I fear that adopting them in Kansas will only lead to a deeply divisive controversy, and even a possible constitutional challenge.

- **Development and adoption of CCS [Common Core State Standards] does not justify the effort to nationalize and standardize science education:** The current national science standards were developed by the National Research Council (NRC) in 1996. In 2010 the NRC began the process of revising the 1996 standards under the name of Next Generation Science Standards, convening a panel of experts to develop a conceptual framework to guide the new standards. The opening paragraph of the foreword of the NGSS Framework states, *"This project capitalizes on a major opportunity that exists at this moment — a large number of states are adopting common standards in mathematics and English/language arts and thus are poised to consider adoption of common standards in K-12 science education."* Clearly, the push for the NGSS was an effort to tag onto the perceived momentum of the CCS in Reading and Math. Instead, they tend to lend credibility and impetus to the fears of many of the opponents of CCS.

National standards have not been proven to have any net positive effect on student learning. Children are different, and clearly, one set of national science standards for a country as large and diverse as the U.S. cannot be expected fit the needs of all children. It is not at all clear to me that there is any educational benefit to be derived from an effort to adopt national standards for educational subject matter as dynamic in its nature as science.

Understanding the high cost of developing new standards and assessments, the only reason to ever adopt new standards is to substantially improve upon existing standards, and only if there is a clear expectation that the new standards will promote better educated students. It is my view that the NGSS do not meet those requirements, but rather, in some respects, they represent a step backwards, and should, therefore, be rejected by the Kansas State Board of Education. Respectfully,

Ken Willard