

Education Malfunction is a Myth



By Stephen L. Pruitt, Ph.D. Stephen was named Vice President of Content, Research and Development at Achieve in November of 2010. He leads the development of the Next Generation Science Standards.

While more than 45 states are working diligently to implement the Common Core State Standards in mathematics and English language arts/literacy, there is another state-led effort underway to develop common science standards, or the Next Generation Science Standards (NGSS). As manager of this initiative, Achieve is excited to have the opportunity to share the details of this work and engage directly with you, the Career Technical Education (CTE) community. CTE is a major stakeholder and partner in the effort to develop science standards for today's students and tomorrow's workforce.

About the Next Generation Science Standards

The NGSS will be K-12 science standards created through a collaborative, state-led process. To date, 26 Lead Partner States are providing leadership to the writing teams and to other states as they consider adoption of the NGSS.

The new standards are being drafted based on the Framework for K-12 Science Education, developed by the National Research Council, the staffing arm of the National Academy of Sciences. The vision laid out in the Framework

- Science and engineering practices (major practices that scientists and engineers employ as they investigate and build models and theories about the world)
- Crosscutting concepts (concepts have application across all domains of science)
- Disciplinary core ideas (those ideas with broad importance across multiple sciences or engineering disciplines or key organizing principles of a single discipline)



The NGSS will bring this vision to life – and to K-12 classrooms.

What Do the Next Generation Science Standards Mean for CTE?

We believe the NGSS will offer excellent opportunities for stronger alignment between science and CTE instruction. While the NGSS won't replace existing CTE courses or pathways (e.g., engineering, agriculture/life sciences), the standards can enhance CTE coursework in meaningful ways. Specifically, the NGSS can and should serve as a bridge between what science educators are teaching in their classrooms (the content) and what CTE educators are teaching in their classrooms (the applications).

This comes through most prominently in how the NGSS treat engineering, technology, and applications of science. Engineering is included in NGSS as a disciplinary core idea and as a practice (or application) that cuts across the multiple disciplines within science education. In other words, the engineering expectations are not organized in a way that suggests the development of a new stand-alone course is

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identifies what students need to know and be able to do in order to be a functional citizen, which includes being scientifically literate and an effective member of the United States workforce. Briefly, the Framework established three dimensions of scientific proficiency:

necessary, but rather that shows how scientific knowledge and engineering applications can intersect across the disciplines. For those schools already offering engineering courses or pathways, the NGSS can help enrich those courses, as well as provide opportunities for aligning that engineering coursework with lessons being taught in traditional science courses.

Perhaps most importantly, we see the NGSS serving as a catalyst for new conversations between science and CTE educators about how their courses can be better integrated to reflect the NGSS and relevant CTE expectations.

The Role of CTE in the NGSS Development

The CTE community is undoubtedly a valued partner in the NGSS development. Given your expertise and unique perspective on the applications of science, Achieve and the states have an ongoing commitment to ensure the CTE community is engaged throughout the entire development

process. For example, CTE educators are on the writing teams and all 26 Lead State Partners have been strongly encouraged to include CTE directors, administrators, and educators on their state review teams. In addition, Achieve has engaged the National Association of State Directors of Career Technical Education Consortium (NASDCTEC) as a critical partner in the review process as public drafts become available, and we will continue to find ways to partner throughout the development (and eventual implementation) of the NGSS.

How Can You Get Involved?

Two drafts of the NGSS will be released for public review and feedback, first in the spring of 2012 and then again in the summer/fall of 2012, before the final NGSS are released in winter 2012–13. Sign up for updates – including the windows for public feedback – at <http://www.nextgenscience.org>. We'd love your feedback! ●