What the ESSA Means for STEM Education

When President Obama signed the Every Student Succeeds Act (ESSA) into law on December 10, 2015, it effectively brought an end to the highly criticized No Child Left Behind (NCLB) Act, and say advocates, signaled a new era for K–12 education.

The new law ultimately won bipartisan support in Congress for the changes it will bring to states, schools, and districts nationwide.

Republicans worked to reduce the federal footprint in K–12 education and restore power to local districts, states, teachers, and parents. Under ESSA, states and districts have more authority to determine how to use the federal funds to meet their goals.

Democrats established "guardrails" to ensure that all states maintain high standards, that all subgroups of students succeed, and that states and districts take action with low-performing schools, preserving ESSA's role as a civil rights law.

K–12 education will face many changes when the new law takes effect at the start of the 2017 school year. The ESSA includes changes to assessments, school and district accountability, and teacher certification (see sidebar for more information).

STEM in ESSA

A number of allowable uses of federal funds throughout ESSA will support science, technology, engineering, and math (STEM) education.

Under Title I, states are permitted to use a portion of federal funding to support the development of statewide assessments to integrate concepts related to engineering and technology into the states' science assessments.

Professional development for STEM-specific activities is an allowable use of funds under the Title II Preparing, Training, and Recruiting High-Quality Teachers, Principals, and Other School Leaders Grant. As in the previous law, 95% of Title IIA funding goes to the districts for a number of uses (districts must apply to the state for the grant), including "the development and provision of professional development and other comprehensive systems of support for teachers, principals, or other school leaders to promote high-quality instruction and instructional leadership in STEM subjects, including computer science."

Other uses of Title IIA funds include recruiting, hiring, and retaining effective teachers; mentoring and induction programs; recruiting qualified individuals from other fields to become teachers, principals, or other school leaders; reducing class size; early childhood education; and developing assessments and using data in the classroom, to name a few.

A new program under Title II allows the Secretary of Education to use funds devoted to "national activities" to conduct an annual competitive grant program for the states to develop a STEM Master Teacher Corps or to provide professional development for STEM teachers.

A new Title IVA block grant program, the Student Support and Academic Enrichment Grants, would provide funding to support both state- and district-level educational enrichment activities for students that ensure 1) a well-rounded education with programs in STEM, college and career counseling, arts, and civics, and access to International Baccalaureate (IB)/ Advanced Placement (AP) courses; 2) support for safe and healthy students

Every Student Succeeds Act (ESSA) Highlights

Standards: All states must adopt challenging standards in math, English, and science (unchanged from NCLB).

Assessments: Reading and math, annual in grades 3–8 and once in high school. Science, once in elementary, middle, and high school (unchanged from NCLB). It allows states to use federal funding to integrate technology and engineering concepts into science assessments.

Reporting: Schools/states must report not only student scores of the whole school, but also of the student population by race, poverty level, English language learners, students with disabilities, and gender (unchanged from NCLB).

Accountability: Eliminates Adequate Yearly Progress. States are now responsible for holding schools accountable for overall quality. States can develop their own accountability using multiple measures. They are required to turn around the lowest-performing 5% of schools, schools with graduation rates below 67%, and schools with "consistently underperforming" subgroups. States may create their own testing opt-out laws but must maintain the 95% student participation federal requirement.

Flexibility: Consolidates 40 federal education programs (including the current Title IIB Math and Science Partnership program) into a federal block grant (Title IV) and provides more flexibility for states and districts to determine how federal funds should be used. A new Title IV block grant will provide low-income districts with funding for activities that provide students with a well-rounded education (including STEM activities), support safe and healthy students, and support the effective use of technology. Districts can opt to transfer 100% of Title II or Title IV funds to Title I.

Professional Development: Continues the Title IIA funding grant that provides funding to strengthen teachers and school leaders.

Teachers: Eliminates the NCLB waiver requirement that states develop and implement teacher evaluation systems (but states may elect to continue to evaluate teachers). Eliminates the definition of Highly Qualified Teacher. Allows states to establish, expand, or improve alternative routes for state certification of teachers in STEM subjects. Allows states and districts to provide differential pay, or other incentives, to recruit and retain teachers in high-need academic subjects (such as math and science).

Federal Authority: Restricts and greatly rolls back the power of the Education Secretary. The federal government cannot interfere in state accountability, or mandate or incentivize states to adopt or maintain standards.

with programs in such areas as comprehensive school mental health, drug and violence prevention, health, and physical education; and 3) support for the effective use of technology, including professional development for teachers, blended learning, and devices.

States will allocate funds to school districts based on their share of Title I dollars. Any school district that receives a formula allocation of more than $30,000 must conduct a needs assessment and must expend at least 20% of its grant on safe and healthy school activities and at least another 20% on activities to provide a well-rounded education. The remaining 60% can be spent on these priorities, as well as support the effective use of technology. However, spending on devices, equipment, software, and digital content is capped at 15%. If a district receives an allocation of less than $30,000, the law does not require a needs assessment or set aside percentages for well-rounded and safe and healthy students programs. The district must spend money on activities in at least one of the three categories.

Districts can use Title IVA grants to provide students with a well-rounded education and improve instruction and student engagement in STEM by

- Expanding high-quality STEM courses;
- Increasing access to STEM for underserved and at-risk student populations;
- Supporting the participation of students in STEM nonprofit competitions (such as robotics, science research, invention, mathematics, computer science, and technology competitions);
- Providing hands-on learning opportunities in STEM;
- Integrating other academic subjects, including the arts, into STEM subject programs;
- Creating or enhancing STEM specialty schools (which is defined in the law);
- Integrating classroom-based and after-school and informal STEM instruction; and
- Expanding environmental education.

For more information on ESSA, visit the NSTA Legislative Affairs website at *www.nsta.org/about/clpa*. ●

Quotable

I believe we owe our young an education that captures the exhilarating drama of science.

—Brian Greene, U.S. physicist