OHIO LEGISLATIVE SERVICE COMMISSION

Bill Analysis

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H.B. 170

132nd General Assembly
(As Introduced)

Reps. Carfagna and Duffey, Brenner, LaTourette, Reineke, Boggs

BILL SUMMARY

- Requires the State Board of Education, by July 1, 2018, to adopt academic content standards for computer science.
- Adds computer science instruction as an option to several of the prescribed subjects in the state minimum high school curriculum.
- Permits a student to choose to apply instruction in computer science as one unit of math or science, regardless of the field of certification of the teacher who teaches the class, provided the teacher meets certain professional development requirements.
- Specifies that a school district may employ to teach computer science any individual who is licensed to teach in any of grades kindergarten through 12, regardless of whether the license is for teaching computer information science.
- Specifies that a teacher licensed in computer information science must be considered a "highly qualified teacher" in math.
- Specifies that completion of an Advanced Placement computer science professional development program is one of the conditions for qualifying as a "highly qualified teacher" in grades 7 to 12 for teaching computer science.
- Creates a technology grant program for the 2018-2019 school year.
- Makes an appropriation.

CONTENT AND OPERATION

Computer science academic content standards

The bill requires the State Board of Education, by July 1, 2018, to adopt academic content standards specifically for computer science in grades kindergarten through 12. The bill further directs the State Board, when developing these standards, to consider recommendations from computer science education stakeholder groups, including teachers and representatives from higher education, industry, and Ohio and national computer science organizations.[1]

Computer science in the high school curriculum

Current law prescribes 20 units of study in specified subject areas as the minimum high school curriculum for a diploma from a public school or a chartered nonpublic school. (Each unit is a minimum of 120 hours of instruction, except that for a laboratory course, one unit is a minimum of 150 hours of instruction.) The bill adds computer science instruction as an option to several of the prescribed subjects in that curriculum.

Math

The curriculum requires four units of math. Of these, one unit must be Algebra II, or its equivalent, or a career-based pathway math course for career-technical students. The bill adds computer science as an alternative to Algebra II.[2]

Science

Three units of science are required under the curriculum, including one unit each in physical science, life sciences, and advanced study in (1) chemistry, physics, or other physical science, (2) advanced biology or other life science, or (3) astronomy, physical geology, or other earth or space science. The bill adds computer science as a fourth option for the one unit of advanced study.[3]

Student choice of math or science credit for computer science

The bill specifies that a student may choose to apply instruction in computer science as either one unit of math or one unit of science, regardless of the field of

[1] R.C. 3301.079(A)(4).

[2] R.C. 3313.603(C)(3).

[3] R.C. 3313.603(C)(5).

certification of the teacher who teaches the class, provided the teacher has completed a professional development program determined to be appropriate by the district board (or school governing authority in the case of other public schools and nonpublic schools).[4]

Electives

Among the 20 required units are five (elective) units chosen from one or more of the following: foreign language, fine arts, business, career-technical education, family and consumer sciences, technology, agricultural education, a Junior ROTC program, or other English language arts, mathematics, science, or social studies courses. The bill specifies that for that purpose "technology" includes computer science.[5]

Alternative curriculum

Certain students who enter ninth grade before July 1, 2016, may receive their high school diplomas without completing the standard requirements for graduation if they complete, instead, the slightly different 20 units of instruction and meet other conditions. That alternative curriculum also requires four units of math including "computer programming." The bill substitutes computer science for computer programming.[6]

Qualification to teach computer science

Under rules of the State Board, a public school teacher generally must be licensed in the subject area the teacher is teaching.[7] The bill, on the other hand, specifies that a school district may employ to teach computer science any individual who is licensed to teach in any of grades kindergarten through 12, regardless of whether the license is for teaching "computer information science." However, the individual must complete a professional development program determined to be appropriate by the district board.[8] (While community school teachers do have to be licensed by the State Board, they do not have to comply with the State Board's operating rules regarding teaching in the area of licensure.)[9]

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[4] R.C. 3313.603(N).

[5] R.C. 3313.603(C)(8).

[6] R.C. 3313.603(D)(5)(b)(i)(II).

[7] Ohio Administrative Code 3301-35-05.

[8] R.C. 3319.236.

[9] See R.C. 3314.04, not in the bill.

Highly qualified teacher status

State law provides that a teacher of a "core subject area" (English, math, science, foreign language, government, economics, fine arts, history, and geography) must be "highly qualified" in order to teach in a school funded with federal Title I funds (for disadvantaged students). This provision is based on the former No Child Left Behind Act of 2001, which has been replaced by the Every Student Succeeds Act of 2015.[10] The replacement act no longer includes the highly qualified teacher requirement related to Title I funding. Nonetheless, to be "highly qualified" in this state, a teacher must have a bachelor's degree, be licensed by the State Board, and meet certain other educational, professional development, and testing or experience requirements.

The bill makes two changes in the state law regarding highly qualified teachers. First, it specifies that a teacher licensed in "computer information science" must be considered a highly qualified teacher in the core subject area of math.

Second, it states that if an individual is teaching Advanced Placement (AP) computer science, completion of a professional development program provided by the College Board (the organization that creates and administers the AP program) is one of the conditions for qualifying as a highly qualified teacher in grades 7 to 12.[11]

Computer science described

The bill prescribes a definition for computer science to apply throughout the primary and secondary education code. It states that computer science means "logical reasoning, computing systems, networks and the Internet, data and analysis, algorithms and programming, impacts of computing, and structured problem solving skills applicable in many contexts from science and engineering to the humanities and business."[12]

Technology grant program

The bill creates a competitive grant program for technology in school districts, educational service centers, community schools, and STEM schools for the 2018-2019 school year. The specific purpose of the grants is to support computer science programs and professional development related to those programs by improving technology

[10] The Every Student Succeeds Act is Public Law 114-95.

[11] R.C. 3319.074(A).

[12] R.C. 3301.012.

infrastructure and readiness in districts and schools. The bill also appropriates $2.5 million for those grants, and each individual grant may be for up to $100,000.[13]

The bill further specifies that the grants may be used for any of the following:

(1) The delivery of online assessments, including instruction and data that support online assessment readiness;

(2) Wireless connectivity in school buildings;

(3) Network services, such as improving bandwidth capacity and filtering devices; and

(4) The purchase of computers and equipment.

In the case of an educational service center, the applicant must demonstrate how a grant awarded to the service center would produce cost savings compared with grants awarded to individual districts or schools. The Department of Education also must first give priority to applicants that demonstrate the greatest need for the grants and then give priority to proposals that include partnerships and a plan for sustaining the technological improvements made with the grants.[14]

Report

By January 1, 2020, the Department must issue a report to the chairpersons of the House and Senate Education committees on the effectiveness of the grant program. The report must include a comparison of the grant proposals and the measurable outcomes of grants awarded under the program, as well as a summary of the data reported by the participants.[15]

HISTORY

ACTION	DATE
Introduced	03-29-17

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[13] Sections 3, 4, and 5.

[14] Section 5(A) to (C).

[15] Section 5(D) and (E).