



Senate

General Assembly

File No. 595

January Session, 2019

Substitute Senate Bill No. 957

Senate, April 10, 2019

The Committee on Education reported through SEN. MCCRORY, D. of the 2nd Dist., Chairperson of the Committee on the part of the Senate, that the substitute bill ought to pass.

AN ACT CONCERNING THE INCLUSION OF COMPUTER SCIENCE INSTRUCTION IN THE PUBLIC SCHOOL CURRICULUM, PROGRAMS OF TEACHER PREPARATION AND ALTERNATE ROUTE TO CERTIFICATION PROGRAMS AND THE CREATION OF AN ADJUNCT COMPUTER SCIENCE INSTRUCTOR PERMIT AND A COMPUTER SCIENCE ENDORSEMENT.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

1 Section 1. Subsection (a) of section 10-16b of the general statutes is
2 repealed and the following is substituted in lieu thereof (*Effective July*
3 *1, 2019*):

4 (a) In the public schools the program of instruction offered shall
5 include at least the following subject matter, as taught by legally
6 qualified teachers, the arts; career education; consumer education;
7 health and safety, including, but not limited to, human growth and
8 development, nutrition, first aid, including cardiopulmonary
9 resuscitation training in accordance with the provisions of section 10-
10 16qq, disease prevention and cancer awareness, including, but not
11 limited to, age and developmentally appropriate instruction in

12 performing self-examinations for the purposes of screening for breast
13 cancer and testicular cancer, community and consumer health,
14 physical, mental and emotional health, including youth suicide
15 prevention, substance abuse prevention, including instruction relating
16 to opioid use and related disorders, safety, which shall include the safe
17 use of social media, as defined in section 9-601, and may include the
18 dangers of gang membership, and accident prevention; language arts,
19 including reading, writing, grammar, speaking and spelling;
20 mathematics; physical education; science, which may include the
21 climate change curriculum described in subsection (d) of this section;
22 social studies, including, but not limited to, citizenship, economics,
23 geography, government, history and Holocaust and genocide
24 education and awareness in accordance with the provisions of section
25 10-18f; computer science, including, but not limited to, computer
26 programming instruction; and in addition, on at least the secondary
27 level, one or more world languages and vocational education. For
28 purposes of this subsection, world languages shall include American
29 Sign Language, provided such subject matter is taught by a qualified
30 instructor under the supervision of a teacher who holds a certificate
31 issued by the State Board of Education. For purposes of this
32 subsection, the "arts" means any form of visual or performing arts,
33 which may include, but not be limited to, dance, music, art and theatre.

34 Sec. 2. Subsection (d) of section 10-145a of the general statutes is
35 repealed and the following is substituted in lieu thereof (*Effective July*
36 *1, 2019*):

37 (d) On and after July 1, [1998] 2019, any [candidate in a] program of
38 teacher preparation leading to professional certification shall [complete
39 a] include, as part of the curriculum, instruction in computer science,
40 and other information technology skills, [component of such program,]
41 as applied to student learning and classroom instruction,
42 communications, [and] data management, programming and coding.

43 Sec. 3. Section 10-155d of the general statutes is repealed and the
44 following is substituted in lieu thereof (*Effective July 1, 2019*):

45 (a) The Office of Higher Education shall encourage and support
46 experimentation and research in the preparation of teachers for public
47 elementary and secondary schools. To help fulfill the purposes of this
48 section, the Office of Higher Education shall appoint an advisory
49 council composed of qualified professionals which shall render
50 assistance and advice to the office. In carrying out its activities
51 pursuant to this section, the office shall consult with the State Board of
52 Education and such other agencies as it deems appropriate to assure
53 coordination of all activities of the state relating to the preparation of
54 teachers for public elementary and secondary schools.

55 (b) The Office of Higher Education, with the approval of the
56 Commissioner of Education, shall expand, within available
57 appropriations, participation in its summer alternate route to
58 certification program and its weekend and evening alternate route to
59 certification program. The office shall expand the weekend and
60 evening program for participants seeking certification in a subject
61 shortage area pursuant to section 10-8b. The office, in collaboration
62 with the Department of Education, shall develop (1) a regional
63 alternate route to certification program targeted to the subject shortage
64 areas, [and] (2) an alternate route to certification program for former
65 teachers whose certificates have expired and who are interested in
66 resuming their teaching careers, and (3) an alternate route to
67 certification program targeted for computer science teachers.

68 (c) The Office of Higher Education, in consultation with the
69 Department of Education, shall develop alternate route to certification
70 programs for (1) school administrators and superintendents, [and] (2)
71 early childhood education teachers, and (3) computer science teachers.
72 The programs shall include mentored apprenticeships and criteria for
73 admission to the programs.

74 Sec. 4. (NEW) (*Effective July 1, 2019*) (a) The State Board of
75 Education, upon the request of a local or regional board of education
76 or a regional educational service center, may issue an adjunct
77 computer science instructor permit to any applicant with specialized

78 training, experience or expertise in computer science. Such permit shall
79 authorize a person to hold a part-time position as a teacher of
80 computer science. Such applicant shall (1) hold a bachelor's degree
81 from an institution of higher education accredited by the Board of
82 Regents for Higher Education or Office of Higher Education or
83 regionally accredited, (2) have a minimum of three years of work
84 experience in computer science, or one year of work experience and
85 two years of specialized schooling related to computer science, and (3)
86 achieve a satisfactory evaluation on the appropriate State Board of
87 Education approved subject area assessment.

88 (b) During the period of employment as a computer science
89 instructor, any person holding an adjunct computer science instructor
90 permit shall be under the supervision of the superintendent of schools
91 or of a principal, administrator or supervisor designated by such
92 superintendent who shall regularly observe, guide and evaluate the
93 performance of assigned duties by such holder of an adjunct computer
94 science instructor permit.

95 (c) Each adjunct computer science instructor permit shall be valid
96 for three years and may be renewed by the Commissioner of
97 Education for good cause upon the request of the superintendent of
98 schools for the district employing such person or the regional
99 educational service center employing such person.

100 (d) Any board of education or regional educational service center
101 employing a person who holds an adjunct computer science instructor
102 permit issued under this section shall provide a program to assist each
103 such person. Such program, developed in consultation with the
104 Department of Education, shall include academic and classroom
105 support service components.

106 (e) No person holding an adjunct computer science instructor
107 permit shall fill a position that will result in the displacement of any
108 person holding a teaching certificate under section 10-145b of the
109 general statutes who is already employed at such school.

110 (f) Any person holding an adjunct computer science instructor
 111 permit pursuant to this section shall not be deemed to be eligible for
 112 membership in the teachers' retirement system solely by reason of such
 113 permit, provided any such person who holds a regular teacher's
 114 certificate issued by the State Board of Education shall not be excluded
 115 from membership in said system.

116 Sec. 5. Subsection (e) of section 10-145d of the general statutes is
 117 repealed and the following is substituted in lieu thereof (*Effective July*
 118 *1, 2019*):

119 (e) [The] Not later than July 1, 2020, the State Board of Education
 120 shall adopt regulations, in accordance with chapter 54, to provide
 121 standards for the certification of computer science teachers. Such
 122 regulations shall create a computer science endorsement and make
 123 provision for certification requirements to be met by either (1)
 124 completion of prescribed courses of study, or (2) such other experience
 125 as the state board shall deem appropriate.

This act shall take effect as follows and shall amend the following sections:		
Section 1	<i>July 1, 2019</i>	10-16b(a)
Sec. 2	<i>July 1, 2019</i>	10-145a(d)
Sec. 3	<i>July 1, 2019</i>	10-155d
Sec. 4	<i>July 1, 2019</i>	New section
Sec. 5	<i>July 1, 2019</i>	10-145d(e)

ED *Joint Favorable Subst.*

The following Fiscal Impact Statement and Bill Analysis are prepared for the benefit of the members of the General Assembly, solely for purposes of information, summarization and explanation and do not represent the intent of the General Assembly or either chamber thereof for any purpose. In general, fiscal impacts are based upon a variety of informational sources, including the analyst's professional knowledge. Whenever applicable, agency data is consulted as part of the analysis, however final products do not necessarily reflect an assessment from any specific department.

OFA Fiscal Note

State Impact:

Agency Affected	Fund-Effect	FY 20 \$	FY 21 \$
Higher Ed., Off.	GF - Cost	At least 5,000	At least 5,000
Board of Regents for Higher Education	Various - Cost	128,000 to 256,000	128,000 to 256,000
UConn	Various - Cost	45,500 to 200,000	45,500 to 200,000
Higher Education Constituent Units	Tuition Fund - Potential Revenue Gain	See Below	See Below

Note: GF=General Fund; Various=Various

Municipal Impact:

Municipalities	Effect	FY 20 \$	FY 21 \$
Various Local and Regional School Districts	STATE MANDATE ¹ - Cost	Potential	Potential

Explanation

The bill, which makes several changes related to computer science instruction, results in potential costs to various local and regional school districts, a cost to the Office of Higher Education, costs to the higher education constituent units, and a potential revenue gain to the constituent units, annually beginning in FY 20.

Section 4 could result in a state mandate and an additional cost to

¹ State mandate is defined in Sec. 2-32b(2) of the Connecticut General Statutes, "state mandate" means any state initiated constitutional, statutory or executive action that requires a local government to establish, expand or modify its activities in such a way as to necessitate additional expenditures from local revenues.

various local and regional school districts that employ individuals with an adjunct computer science instructor permit. Under the bill districts who employ these individuals must offer them a support services program. The cost to the district will be dependent upon the type of program developed and the number of employees who will be required to use the support program.

Section 3 results in a cost to the Office of Higher Education of \$5,000 for the operation of an alternative route to certification (ARC) program to certify students in computer science. The office would also require an additional \$900 per student plus travel for the practicum related to such certification.

Section 2 results in a cost to the Board of Regents and to the University of Connecticut (UConn), which under the bill will need to add a teacher preparation program course involving programming and coding. The cost may be offset at some universities, to the extent that the bill's course requirement results in additional revenue.

The constituent unit programs do not currently include these skills in their teacher preparation programs, which collectively enroll approximately 2,300 students. The total annual cost among the state universities is anticipated to range from approximately \$128,000 to \$256,000 beginning in FY 20, depending on how the requirement is implemented (e.g., class size and whether the requirement is implemented in the junior year or the senior year in FY 20). The estimate is based on roughly 50 students per three-credit class, at an estimated cost of \$5,200 in wages per course, and a fringe benefits rate of up to 97.18 percent,² except that due to Central Connecticut State University's high teacher preparation program enrollment, up to 2.5 FTE professors at a salary of approximately \$72,000 would need to be

² The fringe benefit costs for employees funded out of non-appropriated funds are charged to those funding sources, as opposed to the fringe benefit accounts within the Office of the State Comptroller. The estimated active employee fringe benefit cost associated with most personnel changes for non-appropriated fund employees is 97.18% of payroll in FY 20 and FY 21. The fringe benefit impact reflects an upper limit as the funding source for additional personnel is unspecified.

hired. The University of Connecticut's cost to offer the additional course could range from approximately \$45,500 in salary and benefits, using the same methodology, up to roughly \$200,000 if a full professor is hired.

The costs to the constituent units may be borne by the General Fund and/or revenues from students. At a few universities, the total number of credits required to graduate may increase due to the requirement, and therefore tuition paid by these students would also rise. For example, adding a three-credit course at the FY 20 state universities' per-credit rate yields \$741 per student in tuition revenue (excluding any fee revenue).

The Out Years

The annualized ongoing fiscal impact identified above would continue into the future subject to inflation and the number of students enrolled at teacher preparation programs at the constituent units.

OLR Bill Analysis**sSB 957*****AN ACT CONCERNING THE INCLUSION OF COMPUTER SCIENCE INSTRUCTION IN THE PUBLIC SCHOOL CURRICULUM, PROGRAMS OF TEACHER PREPARATION AND ALTERNATE ROUTE TO CERTIFICATION PROGRAMS AND THE CREATION OF AN ADJUNCT COMPUTER SCIENCE INSTRUCTOR PERMIT AND A COMPUTER SCIENCE ENDORSEMENT.*****SUMMARY**

This bill adds computer science to the list of subjects that must be taught in public schools (§ 1). It makes computer programming a required component of computer science instruction, rather than a stand-alone instruction topic as under current law.

Additionally, the bill makes the following changes in teacher preparation and certification laws relating to computer science:

1. requires teacher preparation programs that lead to professional certification to add “programming and coding” to their existing computer and information technology skills curriculum, which the bill renames “computer science,” (§ 2);
2. allows the State Board of Education (SBE) to issue “adjunct computer science instructor permits” that authorize certain individuals to hold part-time computer science teacher positions (§ 4);
3. requires the Office of Higher Education (OHE), in collaboration and consultation with the State Department of Education (SDE), to develop an alternate route to certification (ARC) program for computer science teachers, which must include mentored apprenticeships and program admission criteria (§ 3); and
4. requires SBE to adopt regulations by July 1, 2020, that provide

computer science teaching certification standards, which must (a) create a computer science endorsement and (b) allow applicants to fulfill certification requirements by completing prescribed courses of study or other experience that SBE deems appropriate (§ 5).

EFFECTIVE DATE: July 1, 2019

§ 4 — ADJUNCT INSTRUCTOR PERMIT

The bill allows SBE to issue, at the request of a local or regional board of education or a regional education service center (RESC), an “adjunct computer science instructor permit” to any applicant with specialized training, experience, or expertise in computer science. The permit authorizes its holder to work as a part-time computer science teacher for up to three years, but the education commissioner may renew it for good cause upon the request of the employing district’s superintendent or RESC.

The bill prohibits individuals who hold this permit from (1) displacing any certified teachers who currently work at a school and (2) joining the teachers’ retirement system, unless they also hold a regular teacher certificate issued by SBE.

Additionally, the bill establishes applicant qualifications for the permit, prescribes a supervisory structure for permit-holders’ employment, and requires employing boards or RESCs to provide support services to instructors who hold this permit.

Applicant Qualifications

Under the bill, to be eligible for an “adjunct computer science instructor permit,” an applicant must meet the following criteria:

1. hold a bachelor’s degree from a higher education institution accredited by the Board of Regents for Higher Education or OHE or regionally accredited;
2. have at least three years of computer science work experience, or

one year of such work experience and two years of specialized computer science schooling; and

3. achieve a satisfactory score on the SBE-approved subject area test.

Supervision

The bill requires regular supervision of permit-holders while they are employed in public schools. Specifically, the school superintendent, principal, an administrator, or another supervisor must regularly observe, guide, and evaluate their performance.

Support Services

Under the bill, boards of education or RESCs that employ individuals with this permit must offer them a support services program. The program must be developed in consultation with SDE and must include academic and classroom support service components.

COMMITTEE ACTION

Education Committee

Joint Favorable Substitute

Yea 35 Nay 0 (03/25/2019)