



**SOUTH CAROLINA REVENUE AND FISCAL AFFAIRS OFFICE**  
**STATEMENT OF ESTIMATED FISCAL IMPACT**  
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**Bill Number:** H. 3612 Amended by House Education and Public Works on January 28, 2021  
**Author:** Lucas  
**Subject:** Computer Science  
**Requestor:** Senate Education  
**RFA Analyst(s):** Wren and A. Martin  
**Impact Date:** March 24, 2021

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### **Fiscal Impact Summary**

The amended bill requires the State Board of Education, in consultation with the Education Oversight Committee (EOC) and the Office of the Governor, to adopt a statewide computer science plan on or before December 31, 2022, and requires the State Board of Education to conduct a cyclical review of grade appropriate standards for computer science at least every five years. The bill also requires the State Department of Education (SDE) to create a career pathways system for the information technology cluster before July 1, 2023. Additionally, the bill requires SDE to develop, procure, or identify specified curricula before July 1, 2024. Further, the bill requires SDE to issue a report annually, beginning July 1, 2023, to the General Assembly on the number of students who have complete a career pathway in information technology.

This bill will increase General Fund expenses of the SDE by \$1,826,600 in FY 2021-22 and an additional \$8,445,000 in FY 2022-23. In FY 2021-22, \$1,701,600 is recurring for seven FTE's, professional development, and equipment. SDE indicates that the current computer science required courses are introductory only and that additional training is needed to develop teaching skills in intermediate and advanced level computer science courses above the introductory courses currently offered. These funds would allow SDE to provide professional learning opportunities and provide technical assistance as it relates to a statewide computer science plan at no cost to districts. Also, these funds will allow VirtualSC to be able to offer higher level computer science courses and employ full time staff in computer science. Non-recurring funds of \$100,000 are needed every five years to implement the standards revision requirement change from seven to five years, and \$25,000 in non-recurring funds are needed in FY 2022-23 for the required career pathways system. Additionally, SDE indicates that \$120,000 in recurring General Fund expenses of the agency beginning in FY 2022-23 are for additional state certified adjunct teachers, materials, and course development to meet expected course enrollment demands. The remaining \$325,000 in recurring General Fund expenses of the agency beginning in FY 2022-23 are for the required strategies and communications system on information about career pathways and training for teachers on coding and computer programming. Finally, SDE indicates that \$8,000,000 in non-recurring funds are needed in FY 2022-23 to procure 250,000 textbooks for the new curricula for students in kindergarten through twelfth grade.

SDE further indicates that the agency believes it would be best practice to double the recurring expenses associated with Sections 59-29-250(B) (D) (E) (F) in order to fully implement the provisions of this bill. These additional funds would provide more specialists to assist local districts, allow for more review and analysis on access and capacity at the local level, and provide professional training to education majors in computer science. This would increase recurring expenses of the agency by an additional \$1,501,600 beginning in FY 2021-22.

The amended bill is expected to increase expenditures for the state agency schools in FY 2021-22, however the amount is undetermined. Students attending the Governor's School for the Arts and Humanities currently complete computer science courses through VirtualSC. The school plans to continue offering computer science courses in this manner. However, if the school is required to hire a teacher for the course, the bill would increase expenses of the agency by \$16,000 for an adjunct position. Additional expenses for the Governor's School for Agriculture at John de la Howe will include new staff to teach the course, computer hardware and software, additional licensing, and additional classroom space. However, the amount of additional expenses for these two schools could not be quantified at this time.

The amended bill will have no expenditure impact on the Education Oversight Committee or the Commission on Higher Education (CHE) since the bill requires the agencies to perform activities that can be conducted within the normal course of agency business.

The amended bill is expected to increase local school district expenses by an undetermined amount in FY 2021-22. SDE indicates that some districts have the capacity to provide the required course with existing staff and resources, while other districts may need to hire additional staff, allow students to utilize dual enrollment to take the courses at a university or technical college, or utilize a virtual program. These expenses will vary by district and are undetermined.

## **Explanation of Fiscal Impact**

### **Amended by House Education and Public Works Committee on January 28, 2021 State Expenditure**

The following sections will affect state expenditures:

**Section 59-29-250(B).** This bill requires the State Board of Education, in consultation with EOC and the Office of the Governor, to adopt a statewide computer science plan on or before December 31, 2022.

**State Department of Education.** SDE indicates that this section will increase recurring General Fund expenses of the agency by \$480,000 beginning in FY 2021-22. Of this amount, \$130,000 is for meetings, creation and annual revisions for the statewide plan, publications, and communication for the statewide computer science plan. The remaining \$350,000 is for annual professional development for computer science courses.

**Education Oversight Committee.** EOC indicates that this bill requires the agency to perform activities that can be conducted within the normal course of agency business. Therefore, this bill will have no expenditure impact on EOC in FY 2021-22.

**Section 59-29-250(C).** This section requires the State Board of Education to conduct, at least every five years, a cyclical review of grade appropriate standards for computer science, computational thinking, and computer coding for kindergarten through grade twelve.

**State Department of Education.** SDE indicates that this section will increase non-recurring expenses of the agency by \$100,000 every five years to implement the standards revision requirement change from seven to five years.

**Section 59-29-250(D).** No later than the beginning of the 2022-23 school year, each public high school and public charter high school must offer at least one computer science course that meets certain criteria.

**State Department of Education.** SDE indicates that this section will increase recurring General Fund expenses of the agency by \$721,600 beginning in FY 2021-22. Of this amount, \$441,600 is for four regional kindergarten through twelfth grade implementation specialists. The remaining \$280,000 is for two FTEs, course materials, and design costs for the development of expanded computer science courses for VirtualSC. VirtualSC currently does not have full-time staff in the computer science subject area. The programs are currently taught by part-time teachers, and only the introductory courses in computer science are offered. Additional staff are needed to provide expanded courses in intermediate and advanced course levels and for increases in enrollment.

**State Agency Schools.** The Governor's School for the Arts and Humanities indicates that the school's students currently complete computer science courses through VirtualSC and plans to continue to offer computer science courses in this manner. If the school is required to hire a teacher for the course, the bill would increase expenses by \$16,000 for an adjunct position in FY 2021-22. The Governor's School for Agriculture at John de la Howe indicates that the bill would increase expenses in FY 2021-22 for new staff to teach the course, computer hardware and software, additional licensing, and additional classroom space. However, the agency could not quantify the amount of additional expenses at this time. The Wil Lou Gray Opportunity School indicates that any expenses associated with this bill can be managed within existing appropriations. Based upon these responses, the bill is expected to increase expenses for state agency schools for FY 2021-22, however the amount is undetermined.

**Section 59-29-250(E).** This section requires SDE, beginning in the 2022-23 school year, to perform the following:

- Employ one full-time employee to coordinate and lead the South Carolina Computer Science Education Initiative;
- Support kindergarten through twelfth grade academic and computer science teachers in designing interdisciplinary, project-based instruction and assignments

that engage students in applying literacy, math, and computational thinking skills to solve problems;

- Design career pathways that connect students to career pathways that connect students to postsecondary programs, degrees, or postsecondary credentials in high demand career fields;
- Offer professional development and teacher endorsements to new teachers who will teach computer science;
- Provide information and materials which identify emerging career opportunities in computer science and related fields to parents, students, teachers, and guidance counselors; and
- Assist districts in developing partnerships with business, industry, higher education, and communities to provide after school and extracurricular activities that engage students in computer science.

**State Department of Education.** SDE indicates that this section will increase recurring General Fund expenses of the agency by \$100,000 beginning in FY 2021-22 for one computer science specialist to implement the provisions of this section of the bill.

**Section 59-29-250(F).** This section requires the State Board of Education to promulgate regulations to create certification pathways for computer science teachers no later than July 1, 2023. Also, SDE must develop criteria for postsecondary computer science teacher preparation programs.

**State Board of Education.** SDE indicates that this section will increase recurring General Fund expenses of the agency by \$200,000 beginning in FY 2021-22 for computer science micro-credential framework for kindergarten through twelfth grade.

**Section 59-29-250(G).** This section requires SDE to develop guidelines for use by school districts and schools outlining the educational and degree requirements appropriate for computer science teachers no later than July 1, 2023. Also, CHE must determine if any financial incentives are needed by institutions of higher education to design programs to prepare and credential computer science teachers.

**State Department of Education.** SDE indicates that this section will increase recurring General Fund expenses of the agency by \$200,000 beginning in FY 2021-22. Of this amount, \$60,000 is for software licenses, and \$140,000 is for additional equipment to implement the provisions of this section of the bill.

**Commission on Higher Education.** The amended bill tasks the commission with determining what, if any, financial incentives are needed by institutions of higher learning to design programs to prepare and credential computer science teachers. These activities are conducted in the normal course of the commission's activities. Therefore, the amended bill will have no expenditure impact on the agency.

**Section 59-29-250(H)(1).** This section requires SDE to create a career pathways system before July 1, 2023, that does the following:

- Aligns public education and postsecondary education systems and the career and technology education services provided within and across program providers;
- Aligns with state and regional workforce needs;
- Provides students, teachers, parents, and families with general information about career pathways and with strategies to support students in acquiring the academic, employability, and technical skills that employers demand; and
- Promotes the involvement and cooperative effort of parents, teachers, and school counselors in assisting students in making these choices, in setting career goals, and in developing individual graduation plans to achieve these goals.

**State Department of Education.** SDE indicates that this section will increase General Fund expenses of the agency by \$350,000. Of this amount, \$25,000 is for non-recurring funds in FY 2021-22 to create the required career pathways system. The remaining \$325,000 is for recurring funds beginning in FY 2022-23. Of the recurring funds, \$75,000 is for the development of the required strategies and communications system on information about career pathways for students, teachers, parents, and other stakeholders beginning in elementary school and throughout secondary education. The remaining \$250,000 in recurring funds is needed for training for teachers on coding and computer programming beginning in the elementary school grades and to build professional capacity among educators.

**Section 59-29-250(H)(2).** This section requires SDE, before July 1, 2024, to develop, procure, or identify the following criteria that:

- Are aligned with state computer science standards;
- Are organized around the career pathways and aligned with state and regional workforce needs as determined by the Department of Commerce;
- Provide students with strong academic and real world problem-solving skills;
- Provide students with individualized educational, academic, and career-oriented choices and a greater exposure to career information and opportunities in information technology and computer programming; and
- Provide students beginning in elementary school with the opportunity to learn coding and computer programming.

**State Department of Education.** SDE indicates that this section will increase non-recurring General Fund expenses of the agency by \$8,000,000 in FY 2022-23 to procure 250,000 textbooks for the new curricula for students in kindergarten through twelfth grade.

**Section 59-29-250(H)(3).** This section requires SDE, beginning July 1, 2023, and annually thereafter to issue a report to the General Assembly that documents the number of students who have completed a career pathway in information technology and that documents student access to and participation in coding and computer programming in the state. The information must:

- Be provided at the state level and district level; and

- Report on the availability of such instruction to students, including enrollment, based on such student demographics as gender, race/ethnicity, special education status, and poverty status.

**State Department of Education.** SDE indicates that the requirements of this section can be accomplished within the normal course of business. Therefore, this section will have no expenditure impact on the agency.

*Also, SDE indicates that this bill as a whole could increase recurring General Fund expenses of the agency by \$120,000 in FY 2022-23 for additional state certified adjunct teachers, materials, and course development to meet expected course enrollment demands.*

*SDE further indicates that the agency believes it would be best practice to double the recurring expenses associated with Sections 59-29-250(B) (D) (E) (F) in order to fully implement the provisions of this bill. These additional funds would provide more specialists to assist local districts, allow for more review and analysis on access and capacity at the local level, and provide professional training to education majors in computer science. This would increase recurring General Fund expenses of the agency by an additional \$1,501,600 beginning in FY 2021-22*

#### **State Revenue**

N/A

#### **Local Expenditure**

This bill requires each public high school and public charter high school to offer at least one computer science course that meets certain criteria no later than the beginning of the 2022-23 school year.

SDE indicates that some districts have the necessary staff and resources to provide the required courses, while other districts may need to hire additional staff, allow students to utilize dual enrollment to take the courses at a university or technical college, or utilize a virtual program. The expenses related to additional FTEs vary by district. For dual enrollment, the state currently pays approximately \$261 per student for dual enrollment courses (EFA base student cost x 70% for state portion x .15 for the dual enrollment weight). SDE indicates that this is frequently insufficient to cover the cost of the dual enrollment courses, and any additional expenses would be the district's responsibility but are undetermined. SDE also indicates that schools could contract with VirtualSC for the required computer science course for a full class of students that would be taught by a VirtualSC teacher. Also, a district may contract with VirtualSC to work with their district to establish a local district operated virtual program using teachers from the district. In these cases, the school would pay a fee per license that is used by the school to cover the instructional materials for the course. Therefore, this bill is expected to increase local school district expenses by an undetermined amount in FY 2021-22.

#### **Local Revenue**

N/A

**Updated for Revised Agency Response on January 25, 2021**

**Introduced on January 12, 2021**

**State Expenditure**

The following sections will affect state expenditures:

**Section 59-29-250(B).** This bill requires the State Board of Education, in consultation with EOC and the Office of the Governor, to adopt a statewide computer science plan on or before December 31, 2022.

**State Department of Education.** SDE indicates that this section will increase recurring General Fund expenses of the agency by \$480,000 beginning in FY 2021-22. Of this amount, \$130,000 is for meetings, creation and annual revisions for the statewide plan, publications, and communication for the statewide computer science plan. The remaining \$350,000 is for annual professional development for computer science courses.

**Education Oversight Committee.** EOC indicates that this section requires the agency to perform activities that can be conducted within the normal course of agency business. Therefore, this section will have no expenditure impact on EOC in FY 2021-22.

**Section 59-29-250(C).** This section requires the State Board of Education to conduct, at least every five years, a cyclical review of grade appropriate standards for computer science, computational thinking, and computer coding for kindergarten through grade twelve.

**State Department of Education.** SDE indicates that this section will increase non-recurring expenses of the agency by \$100,000 every five years to implement the standards revision requirement change from seven to five years.

**Section 59-29-250(D).** No later than the beginning of the 2022-23 school year, each public high school and public charter high school must offer at least one computer science course that meets certain criteria.

**State Department of Education.** SDE indicates that this section will increase recurring General Fund expenses of the agency by \$721,600 beginning in FY 2021-22. Of this amount, \$441,600 is for four regional kindergarten through twelfth grade implementation specialists. The remaining \$280,000 is for two FTEs, course materials, and design costs for the development of expanded computer science courses for VirtualSC. VirtualSC currently does not have full-time staff in the computer science subject area. The programs are currently taught by part-time teachers, and only the introductory courses in computer science are offered. Additional staff are needed to provide expanded courses in intermediate and advanced course levels and for increases in enrollment.

**State Agency Schools.** The Governor's School for the Arts and Humanities indicates that the school's students currently complete computer science courses through VirtualSC and plans to continue to offer computer science courses in this manner. If the school is required to hire a

teacher for the course, the bill would increase expenses by \$16,000 for an adjunct position in FY 2021-22. The Governor's School for Agriculture at John de la Howe indicates that the bill would increase expenses in FY 2021-22 for new staff to teach the course, computer hardware and software, additional licensing, and additional classroom space. However, the agency could not quantify the amount of additional expenses at this time. The Wil Lou Gray Opportunity School indicates that any expenses associated with this bill can be managed within existing appropriations. Based upon these responses, the bill is expected to increase expenses for state agency schools for FY 2021-22, however the amount is undetermined.

**Section 59-29-250(E).** This section requires SDE, beginning in the 2022-23 school year, to perform the following:

- Employ one full-time employee to coordinate and lead the South Carolina Computer Science Education Initiative;
- Support kindergarten through twelfth grade academic and computer science teachers in designing interdisciplinary, project-based instruction and assignments that engage students in applying literacy, math, and computational thinking skills to solve problems;
- Design career pathways that connect students to career pathways that connect students to postsecondary programs, degrees, or postsecondary credentials in high demand career fields;
- Offer professional development and teacher endorsements to new teachers who will teach computer science;
- Provide information and materials which identify emerging career opportunities in computer science and related fields to parents, students, teachers, and guidance counselors; and
- Assist districts in developing partnerships with business, industry, higher education, and communities to provide after school and extracurricular activities that engage students in computer science.

**State Department of Education.** SDE indicates that this section will increase recurring General Fund expenses of the agency by \$100,000 beginning in FY 2021-22 for one computer science specialist to implement the provisions of this section of the bill.

**Section 59-29-250(F).** This section requires the State Board of Education to promulgate regulations to create certification pathways for computer science teachers no later than July 1, 2023. Also, SDE must develop criteria for postsecondary computer science teacher preparation programs.

**State Board of Education.** SDE indicates that this section will increase recurring General Fund expenses of the agency by \$200,000 beginning in FY 2021-22 for computer science micro-credential framework for kindergarten through twelfth grade.

**Section 59-29-250(G).** This section requires SDE to develop guidelines for use by school districts and schools outlining the educational and degree requirements appropriate for computer science teachers no later than July 1, 2023. Also, CHE must determine if any financial

incentives are needed by institutions of higher education to design programs to prepare and credential computer science teachers.

**State Department of Education.** SDE indicates that this section will increase recurring General Fund expenses of the agency by \$200,000 beginning in FY 2021-22. Of this amount, \$60,000 is for software licenses, and \$140,000 is for additional equipment to implement the provisions of this section of the bill.

**Commission on Higher Education.** The bill tasks the commission with determining what, if any, financial incentives are needed by institutions of higher learning to design programs to prepare and credential computer science teachers. These activities are conducted in the normal course of the commission's activities. Therefore, this bill will have no expenditure impact on the agency.

*Also, SDE indicates that this bill as a whole could increase recurring General Fund expenses of the agency by \$120,000 in FY 2022-23 for additional state certified adjunct teachers, materials, and course development to meet expected course enrollment demands.*

*SDE further indicates that the agency believes it would be best practice to double the recurring expenses associated with Sections 59-29-250(B) (D) (E) (F) in order to fully implement the provisions of this bill. These additional funds would provide more specialists to assist local districts, allow for more review and analysis on access and capacity at the local level, and provide professional training to education majors in computer science. This would increase recurring General Fund expenses of the agency by an additional \$1,501,600 beginning in FY 2021-22*

## **State Revenue**

N/A

## **Local Expenditure**

The amended bill requires each public high school and public charter high school to offer at least one computer science course that meets certain criteria no later than the beginning of the 2022-23 school year.

SDE indicates that some districts have the necessary staff and resources to provide the required courses, while other districts may need to hire additional staff, allow students to utilize dual enrollment to take the courses at a university or technical college, or utilize a virtual program. The expenses related to additional FTEs vary by district. For dual enrollment, the state currently pays approximately \$261 per student for dual enrollment courses (EFA base student cost x 70% for state portion x .15 for the dual enrollment weight). SDE indicates that this is frequently insufficient to cover the cost of the dual enrollment courses, and any additional expenses would be the district's responsibility but are undetermined. SDE also indicates that schools could contract with VirtualSC for the required computer science course for a full class of students that would be taught by a VirtualSC teacher. Also, a district may contract with VirtualSC to work with their district to establish a local district operated virtual program using teachers from the

district. In these cases, the school would pay a fee per license that is used by the school to cover the instructional materials for the course. Therefore, the amended bill is expected to increase local school district expenses by an undetermined amount in FY 2021-22.

### **Local Revenue**

N/A

### **Introduced on January 12, 2021**

#### **State Expenditure**

This bill requires the State Board of Education, in consultation with EOC and the Office of the Governor, to adopt a statewide computer science plan on or before December 31, 2022. The bill also requires the State Board of Education to conduct, at least every five years, a cyclical review of grade appropriate standards for computer science, computational thinking, and computer coding for kindergarten through grade twelve. No later than the beginning of the 2022-23 school year, each public high school and public charter high school must offer at least one computer science course that meets certain criteria. Beginning in the 2022-23 school year, SDE must follow certain criteria to coordinate and lead the South Carolina Computer Science Education Initiative. SDE must design career pathways that connect students to postsecondary programs, degrees, or postsecondary credentials in high demand career fields. The State Board of Education must promulgate regulations to create certification pathways for computer science teachers no later than July 1, 2023. SDE must develop criteria for postsecondary computer science teacher preparation programs. Additionally, SDE must develop guidelines for use by school districts and schools outlining the educational and degree requirements for computer science teachers. CHE must determine if any financial incentives are needed by institutions of higher education to design programs to prepare and credential computer science teachers.

**State Department of Education.** SDE indicates that this bill will increase General Fund expenses by \$3,380,000 in FY 2021-22. Of this amount, \$3,280,000 is recurring, of which \$3,000,000 is for professional development, certification attainment, and equipment for the required computer science courses. The remaining \$280,000 in recurring funds is for 2 FTEs, course materials, and design costs for the development of the required computer science courses for VirtualSC. Non-recurring funds of \$100,000 are needed every five years to implement the standards revision requirement change from seven to five years. Also, SDE indicates that this bill could increase recurring General Fund expenses of the agency by \$120,000 in FY 2022-23 for additional state certified adjunct teachers, materials, and course development to meet expected course enrollment demands. Further, SDE indicates that the State Board of Education approved standards for the development and approval of teacher preparation programs leading to certification in computer science in 2020.

**State Agency Schools.** The Governor's School for the Arts and Humanities indicates that the school's students currently complete computer science courses through VirtualSC and plans to continue to offer computer science courses in this manner. If the school is required to hire a teacher for the course, the bill would increase expenses by \$16,000 for an adjunct position in FY 2021-22. The Governor's School for Agriculture at John de la Howe indicates that the bill would increase expenses in FY 2021-22 for new staff to teach the course, computer hardware

and software, additional licensing, and additional classroom space. However, the agency could not quantify the amount of additional expenses at this time. The Wil Lou Gray Opportunity School indicates that any expenses associated with this bill can be managed within existing appropriations. Based upon these responses, the bill is expected to increase expenses for state agency schools for FY 2021-22, however the amount is undetermined.

**Education Oversight Committee.** EOC indicates that this bill requires the agency to perform activities that can be conducted within the normal course of agency business. Therefore, this bill will have no expenditure impact on EOC in FY 2021-22.

**Commission on Higher Education.** The bill tasks the commission with determining what, if any, financial incentives are needed by institutions of higher learning to design programs to prepare and credential computer science teachers. These activities are conducted in the normal course of the commission's activities. Therefore, this bill will have no expenditure impact on the agency.

### **State Revenue**

N/A

### **Local Expenditure**

This bill requires each public high school and public charter high school to offer at least one computer science course that meets certain criteria no later than the beginning of the 2022-23 school year.

SDE indicates that some districts have the necessary staff and resources to provide the required courses, while other districts may need to hire additional staff, allow students to utilize dual enrollment to take the courses at a university or technical college, or utilize a virtual program. The expenses related to additional FTEs vary by district. For dual enrollment, the state currently pays approximately \$261 per student for dual enrollment courses (EFA base student cost x 70% for state portion x .15 for the dual enrollment weight). SDE indicates that this is frequently insufficient to cover the cost of the dual enrollment courses, and any additional expenses would be the district's responsibility but are undetermined. SDE also indicates that schools could contract with VirtualSC for the required computer science course for a full class of students that would be taught by a VirtualSC teacher. Also, a district may contract with VirtualSC to work with their district to establish a local district operated virtual program using teachers from the district. In these cases, the school would pay a fee per license that is used by the school to cover the instructional materials for the course. Therefore, this bill is expected to increase local school district expenses by an undetermined amount in FY 2021-22.

### **Local Revenue**

N/A



Frank A. Rainwater, Executive Director