

AMENDED IN ASSEMBLY APRIL 13, 2016

AMENDED IN ASSEMBLY MARCH 28, 2016

CALIFORNIA LEGISLATURE—2015–16 REGULAR SESSION

**ASSEMBLY BILL**

**No. 2329**

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**Introduced by Assembly Member Bonilla**  
**(Principal coauthor: Assembly Member Chiu)**  
**(Coauthors: Assembly Members ~~Dababneh and Low~~ Chang,**  
***Dababneh, Low, and Olsen*)**

February 18, 2016

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An act to add and repeal Chapter 19 (commencing with Section 53310) of Part 28 of Division 4 of Title 2 of the Education Code, relating to school curriculum.

LEGISLATIVE COUNSEL'S DIGEST

AB 2329, as amended, Bonilla. Computer science strategic implementation plan.

Existing law requires the Instructional Quality Commission, on or before July 31, 2019, to consider developing and recommending to the State Board of Education computer science content standards for kindergarten and grades 1 to 12, inclusive, pursuant to recommendations developed by a group of computer science experts convened by the Superintendent of Public Instruction in consultation with the state board.

This bill would ~~provide for the establishment of~~ *require the State Department of Education to establish, on or before July 1, 2017, a computer science strategic implementation advisory board, composed of 20 members, as specified, to report necessary legislative changes related to computer science education to the ~~State Department of Education~~ department and the state board on or before January 1, 2018,*

and to submit recommendations for a computer science strategic implementation plan to the department and the state board on or before March 1, 2018. The bill would require the department and the state board to consider the advisory board’s recommendations and the recommendations of the commission specified above, to develop and adopt a computer science strategic implementation plan, and to submit the plan to the Legislature on or before January 1, 2019. The bill’s provisions would be repealed on January 1, 2021.

Vote: majority. Appropriation: no. Fiscal committee: yes.  
State-mandated local program: no.

*The people of the State of California do enact as follows:*

1 SECTION 1. (a) The Legislature finds and declares all of the  
2 following:

3 (1) Computer science education is not only about access to  
4 computers. It is about innovation and development of technology.  
5 Computer science education builds pupils’ computational and  
6 critical thinking skills, which enables them to create, and not simply  
7 use, the next generation of technological tools. This fundamental  
8 knowledge is needed to prepare pupils for the 21st century  
9 regardless of their ultimate field of study or occupation.

10 (2) Computer science drives job creation and innovation  
11 throughout our state’s economy. Providing access to computer  
12 science education is a critical step for ensuring that California  
13 remains competitive in the global economy and strengthens its  
14 cybersecurity. Last year, there were over 600,000 technology jobs  
15 open across the United States, ~~and~~ and, by 2018, 51 percent of all  
16 science, technology, engineering, and mathematics (STEM) jobs  
17 are projected to be in computer science-related fields. In California,  
18 there are currently 86,436 open computing jobs, which is four  
19 times the average demand rate in California.

20 (3) Computing occupations make up two-thirds of all projected  
21 new jobs in STEM fields, making computer science one of the  
22 most in-demand college degrees. However, California only had  
23 3,525 computer science graduates in 2014 with only 15 percent  
24 female graduates.

25 (4) There are fewer advanced placement (AP) examinations  
26 taken in computer science than in any other STEM subject area.  
27 Of the high school pupils in California who took the AP computer

1 science examination in 2015, only 26 percent were female, only  
2 973 were Latino, and only 148 were African American. Only 242  
3 schools in California, or 16 percent of California schools with AP  
4 programs, offered the AP computer science course in the  
5 2013–2014 2013–14 school year.

6 (5) President Obama’s Computer Science for All initiative builds  
7 on the momentum at the state and local level. The President’s  
8 upcoming budget proposes funding for the United States  
9 Department of Education, available over three years, for states to  
10 increase access to computer science education in elementary and  
11 secondary education classrooms. Under the program, states would  
12 submit comprehensive five-year “Computer Science for All” plans  
13 in order to be eligible for federal funding, and every state with a  
14 well-designed strategy would receive funds. In addition to  
15 state-level grants, the budget will also dedicate funds for  
16 competitive grants specifically for leading districts to execute  
17 ambitious computer science education expansion efforts for all  
18 pupils, including traditionally underrepresented pupils, with those  
19 efforts to serve as models for national replication.

20 (6) However, access to computer science education for all pupils  
21 is still a challenge especially for underrepresented communities.  
22 Only one out of four K–12 schools teaches any computer science,  
23 leaving 75 percent of pupils today without the opportunity to  
24 develop skills that could help them thrive in the future.

25 (7) Exposure to computer science at a young age has the  
26 potential to address the diversity gap in computer science fields.  
27 Girls who take AP computer science in high school are 10 times  
28 more likely to major in computer science in college. African  
29 American and Latino pupils who take this course in high school  
30 are over seven times more likely to major in this field.

31 (8) A Google-Gallup survey found that 9 out of 10 parents say  
32 they want computer science taught in their schools, and the  
33 majority of parents and teachers believe it should be required  
34 learning for 21st century pupils.

35 (9) Computer science has often been confused with broader  
36 technology education in schools. California should adopt distinct  
37 standards for computer science focused on both the creation and  
38 use of software and computing technologies at all levels of K–12  
39 education.

1 (b) It is the intent of the Legislature that all pupils in  
2 kindergarten and grades 1 to 12, inclusive, have access to computer  
3 science education, with a strong focus on pupils underrepresented  
4 in computer science, including girls, low-income and underserved  
5 school districts, and rural and urban school districts.

6 SEC. 2. Chapter 19 (commencing with Section 53310) is added  
7 to Part 28 of Division 4 of Title 2 of the Education Code, to read:

8  
9 CHAPTER 19. COMPUTER SCIENCE STRATEGIC IMPLEMENTATION  
10 PLAN  
11

12 53310. On or before ~~March 1, 2017~~, *July 1, 2017*, a computer  
13 science strategic implementation advisory board shall be  
14 established by the department to develop recommendations for a  
15 computer science strategic implementation plan. The advisory  
16 board shall be comprised of the following members:

17 (a) A representative appointed by the Governor, who shall serve  
18 as the chair of the advisory board.

19 (b) A representative appointed by the Senate Committee on  
20 Rules.

21 (c) A representative appointed by the Speaker of the Assembly.

22 (d) A representative representing the Superintendent.

23 (e) A representative representing the state board.

24 ~~(f) A representative representing the department.~~

25 ~~(g)~~

26 (f) A representative representing a K–12 teacher or faculty  
27 association, appointed by the Governor.

28 ~~(h)~~

29 (g) A representative representing the Commission on Teacher  
30 Credentialing.

31 ~~(i)~~

32 (h) A representative representing the Computer Science Teachers  
33 Association.

34 ~~(j)~~

35 (i) A representative representing a large urban school district,  
36 appointed by the Governor.

37 ~~(k)~~

38 (j) A representative representing a rural school district, appointed  
39 by the Governor.

40 ~~(l)~~

1 (k) A representative of the private sector technology industry,  
2 appointed by the Governor.

3 ~~(m)~~

4 (l) A representative from the University of California.

5 ~~(n)~~

6 (m) A representative from the California State University.

7 ~~(o)~~

8 (n) A representative from the California Community Colleges.

9 ~~(p)~~

10 (o) A representative from the Instructional Quality Commission.

11 ~~(q)~~

12 (p) A representative from a computer science/STEM education  
13 and research program, appointed by the Governor.

14 ~~(r)~~

15 (q) A representative from a nonprofit student/school advocacy  
16 organization, appointed by the Governor.

17 ~~(s)~~

18 (r) A representative from a parent organization, appointed by  
19 the Governor.

20 ~~(t)~~

21 (s) A representative representing school administrators and  
22 superintendents, appointed by the Governor.

23 (t) *A pupil enrolled in a public school, appointed by the*  
24 *Superintendent.*

25 53311. On or before March 1, 2018, the advisory board shall  
26 submit recommendations for a computer science strategic  
27 implementation plan to the department and the state board that  
28 includes, at a minimum, recommendations on all of the following:

29 (a) Broadening the pool of teachers to teach computer science.  
30 These recommendations may provide, among other things, for the  
31 following:

32 (1) Providing training and professional development for  
33 education in computer science.

34 (2) Creating a teacher certification pathway in computer science.

35 (3) Expanding scholarship eligibility and loan forgiveness  
36 programs for computer science teachers in low-income and  
37 underserved school districts and rural and urban school districts.

38 (b) Developing computer science content standards. These  
39 recommendations may provide, among other things, for the  
40 following:

- 1 (1) Defining computer science education principles that meet
- 2 the needs of pupils in kindergarten and grades 1 to 12, inclusive.
- 3 (2) Building on the successful integration of computer science
- 4 into the California science standards.
- 5 (3) Adapting computer science education standards being
- 6 developed in other states to address the needs of California pupils.
- 7 (4) Building on computer science frameworks for kindergarten
- 8 and grades 1 to 12, inclusive, developed by nationally recognized
- 9 computer science organizations and experts.
- 10 ~~(5) Ensuring~~
- 11 *(c) Ensuring that all pupils have access to quality computer*
- 12 *science courses, which may include scaling courses. These*
- 13 *recommendations may provide, among other things, for the*
- 14 *following:*
- 15 *(1) Scaling up computer science education coursework so that*
- 16 *all high schools teach at least one computer science course.*
- 17 ~~(6)~~
- 18 *(2) Procuring a pathway for computer science to count toward*
- 19 *high school graduation and college admission requirements.*
- 20 ~~(7)~~
- 21 *(3) Providing access to computer science in both college and*
- 22 *career pathways.*
- 23 ~~(8)~~
- 24 *(4) Ensuring school districts have adequate broadband*
- 25 *connectivity and infrastructure and access to hardware and*
- 26 *software.*
- 27 *(5) Removing local barriers that local educational agencies*
- 28 *face when implementing computer science education.*
- 29 *(6) Increasing the participation of pupils traditionally*
- 30 *underrepresented in computer science education.*
- 31 53312. The Governor shall appoint a statewide computer
- 32 science liaison to serve the advisory board, including, but not
- 33 limited to, by coordinating the efforts of the advisory board and
- 34 ensuring that the advisory board's recommendations are
- 35 implemented to achieve the intentions of the computer science
- 36 strategic implementation plan.
- 37 53313. (a) The advisory board shall report any necessary
- 38 legislative changes related to computer science education to the
- 39 state board and to the department on or before January 1, 2018.

1 (b) The department and state board shall consider the  
2 recommendations submitted by the advisory board pursuant to  
3 Section 53311 and the recommendations submitted to the state  
4 board by the Instructional Quality Commission pursuant to Section  
5 60605.4, shall develop and adopt a computer science strategic  
6 implementation plan, and shall submit the plan to the Legislature  
7 on or before January 1, 2019.

8 53314. This chapter shall become inoperative on July 31, 2020,  
9 and, as of January 1, 2021, is repealed, unless a later enacted  
10 statute, that becomes operative on or before January 1, 2021,  
11 deletes or extends the dates on which it becomes inoperative and  
12 is repealed.

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