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AMENDED IN ASSEMBLY APRIL 13, 2016
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CALIFORNIA LEGISLATURE—2015–16 REGULAR SESSION

ASSEMBLY BILL

No. 2329

**Introduced by Assembly Member Bonilla
(Principal coauthor: Assembly Member Chiu)
(Coauthors: Assembly Members *Travis Allen, Calderon, Chang,
Dababneh, Gonzalez, Kim, Lackey, Low, Obernolte, and Olsen*)**

February 18, 2016

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 require the ~~State Department of Education Superintendent~~ to ~~establish~~, *convene*, on or before ~~July~~ *September* 1, 2017, a computer science strategic implementation advisory ~~board~~, *panel* composed of 20 members, as specified, ~~to report necessary legislative changes related to computer science education to the~~

~~department and the state board on or before January 1, 2018, and to develop and submit recommendations for a computer science strategic implementation plan to the department and State Department of Education, the state board board, and the Legislature on or before March July 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, panel’s recommendations, 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 would require the Superintendent to appoint a statewide computer science liaison to serve the advisory panel, as provided. The bill would authorize the advisory panel, if state or federal funds are not available or sufficient for purposes of the bill’s provisions, to evaluate the process and ability to accept grants and receive donations and other financial support from public or private sources for purposes of convening the advisory panel, preparing the computer science strategic implementation plan, and ensuring that the recommendations are considered by the appropriate stakeholders. 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, by 2018, 51 percent of all
- 16 science, technology, engineering, and mathematics (STEM) jobs

1 are projected to be in computer science-related fields. In California,
2 there are currently 86,436 open computing jobs, which is four
3 times the average demand rate in California.

4 (3) Computing occupations make up two-thirds of all projected
5 new jobs in STEM fields, making computer science one of the
6 most in-demand college degrees. However, California only had
7 3,525 computer science graduates in 2014 with only 15 percent
8 female graduates.

9 (4) There are fewer advanced placement (AP) examinations
10 taken in computer science than in any other STEM subject area.
11 Of the high school pupils in California who took the AP computer
12 science examination in 2015, only 26 percent were female, only
13 973 were Latino, and only 148 were African American. Only 242
14 schools in California, or 16 percent of California schools with AP
15 programs, offered the AP computer science course in the 2013–14
16 school year.

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

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

36 (7) Exposure to computer science at a young age has the
37 potential to address the diversity gap in computer science fields.
38 Girls who take AP computer science in high school are 10 times
39 more likely to major in computer science in college. African

1 American and Latino pupils who take this course in high school
2 are over seven times more likely to major in this field.

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

7 (9) Computer science has often been confused with broader
8 technology education in schools. California should adopt distinct
9 standards for computer science focused on both the creation and
10 use of software and computing technologies at all levels of K-12
11 education.

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

17 (c) *It is the intent of the Legislature that the only predetermined*
18 *outcome be to increase access to computer science in California*
19 *schools and to account for disparate views as recommendations*
20 *are provided.*

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

23
24 CHAPTER 19. COMPUTER SCIENCE STRATEGIC IMPLEMENTATION
25 PLAN
26

27 53310. On or before ~~July~~ *September 1, 2017, the Superintendent*
28 *shall convene* a computer science strategic implementation advisory
29 ~~board shall be established by the department panel~~ *panel* to develop
30 recommendations for a computer science strategic implementation
31 plan. *The advisory panel shall hold public meetings, post the*
32 *location and time of the meetings, and post agendas online.*
33 *Members of the advisory panel shall possess expertise in computer*
34 *science. The advisory board shall be comprised of panel shall*
35 *consist of, but not necessarily be limited to, the following members:*

36 (a) *The Superintendent or his or her designee, who shall serve*
37 *as the cochair of the advisory panel.*

38 (a)

39 (b) ~~A representative appointed by~~ *of the Governor, who shall*
40 ~~serve as the chair cochair of the advisory board.~~ *panel.*

- 1 ~~(b)~~
- 2 (c) A representative ~~appointed~~ *designated* by the Senate
- 3 Committee on Rules.
- 4 ~~(e)~~
- 5 (d) A representative ~~appointed~~ *designated* by the Speaker of the
- 6 Assembly.
- 7 ~~(d) A representative representing the Superintendent.~~
- 8 ~~(e) A representative representing the state board.~~
- 9 ~~(f) A representative representing a K-12 teacher or faculty~~
- 10 ~~association, appointed by the Governor.~~
- 11 (e) (1) *Three K-12 teacher representatives, designated by the*
- 12 *Superintendent.*
- 13 (2) *It is the intent of the Legislature that these representatives*
- 14 *include one elementary teacher, one middle school teacher, and*
- 15 *one high school teacher.*
- 16 (3) *It is further the intent of the Legislature that these*
- 17 *representatives include one teacher from a large urban school*
- 18 *district and one from a rural school district.*
- 19 ~~(g)~~
- 20 (f) A representative representing the Commission on Teacher
- 21 Credentialing.
- 22 ~~(h)~~
- 23 (g) A representative representing the Computer Science Teachers
- 24 Association.
- 25 ~~(i) A representative representing a large urban school district,~~
- 26 ~~appointed by the Governor.~~
- 27 ~~(j) A representative representing a rural school district, appointed~~
- 28 ~~by the Governor.~~
- 29 ~~(k)~~
- 30 (h) A representative of the private sector technology industry,
- 31 ~~appointed by the Governor.~~ *designated by the Superintendent.*
- 32 ~~(t)~~
- 33 (i) A representative from the University of California.
- 34 ~~(m)~~
- 35 (j) A representative from the California State University.
- 36 ~~(n)~~
- 37 (k) A representative from the California Community Colleges.
- 38 (l) *A representative from a private postsecondary educational*
- 39 *institution, designated by the Superintendent.*
- 40 ~~(o)~~

- 1 (m) A representative from the Instructional Quality Commission.
- 2 ~~(p)~~
- 3 (n) A representative from a computer science/STEM education
- 4 and research program, ~~appointed by the Governor.~~ *designated by*
- 5 *the Superintendent.*
- 6 ~~(q) A representative from a nonprofit student/school advocacy~~
- 7 ~~organization, appointed by the Governor.~~
- 8 ~~(r)~~
- 9 (o) A representative from a parent organization, ~~appointed by~~
- 10 ~~the Governor.~~ *designated by the Superintendent.*
- 11 ~~(s)~~
- 12 (p) A representative representing school administrators and
- 13 superintendents, ~~appointed by the Governor.~~ *designated by the*
- 14 *Superintendent.*
- 15 ~~(t)~~
- 16 (q) A pupil enrolled in a public school, ~~appointed~~ *designated*
- 17 *by the Superintendent.*
- 18 (r) *A representative from a county office of education,*
- 19 *designated by the Superintendent.*
- 20 53311. (a) On or before ~~March~~ *July 1, 2018,* the *computer*
- 21 *science strategic implementation advisory board panel* shall submit
- 22 recommendations for a computer science strategic implementation
- 23 plan to the ~~department and department,~~ the state ~~board board,~~ and
- 24 *the Legislature* that includes, at a minimum, recommendations on
- 25 all of the following:
- 26 ~~(a)~~
- 27 (1) Broadening the pool of teachers to teach computer science.
- 28 These recommendations may provide, among other things, for the
- 29 following:
- 30 ~~(1)~~
- 31 (A) Providing training and professional development for
- 32 education in computer ~~science.~~ *science pursuant to Section*
- 33 *60605.4.*
- 34 ~~(2)~~
- 35 (B) Creating a teacher certification pathway in computer science.
- 36 ~~(3)~~
- 37 (C) Expanding scholarship eligibility and loan forgiveness
- 38 programs for computer science teachers in low-income and
- 39 underserved school districts and rural and urban school districts.

- 1 ~~(b) Developing computer science content standards. These~~
2 ~~recommendations may provide, among other things, for the~~
3 ~~following:~~
- 4 ~~(1)~~
5 (2) Defining computer science education principles that meet
6 the needs of pupils in kindergarten and grades 1 to 12, inclusive.
7 ~~(2) Building on the successful integration of computer science~~
8 ~~into the California science standards.~~
- 9 ~~(3) Adapting computer science education standards being~~
10 ~~developed in other states to address the needs of California pupils.~~
- 11 ~~(4) Building on computer science frameworks for kindergarten~~
12 ~~and grades 1 to 12, inclusive, developed by nationally recognized~~
13 ~~computer science organizations and experts.~~
- 14 ~~(e)~~
15 (3) Ensuring that all pupils have access to quality computer
16 science courses. These recommendations may provide, among
17 other things, for the following:
- 18 ~~(1)~~
19 (A) Scaling up computer science education coursework so that
20 all high schools teach at least one computer science course.
21 ~~(2) Procuring a pathway for computer science to count toward~~
22 ~~high school graduation and college admission requirements.~~
- 23 ~~(3)~~
24 (B) Providing access to computer science in both college and
25 career pathways.
- 26 ~~(4)~~
27 (C) Ensuring school districts have adequate broadband
28 connectivity and infrastructure and access to hardware and
29 software. *This may include, but is not limited to, the development*
30 *of grant programs that prioritize high-need school districts.*
- 31 ~~(5)~~
32 (D) Removing local *policy and regulatory* barriers that local
33 educational agencies face when implementing computer science
34 education.
- 35 ~~(6)~~
36 (E) Increasing the participation of pupils traditionally
37 underrepresented in computer science education.
- 38 (b) *The recommendations shall be submitted to the Legislature*
39 *in conformance with Section 9795 of the Government Code.*

1 (c) Upon completion of the recommendations for a computer
 2 science strategic implementation plan, the computer science
 3 strategic implementation advisory panel established pursuant to
 4 Section 53310 shall cease.

5 53312. (a) The ~~Governor~~ Superintendent shall appoint a
 6 statewide computer science liaison *within the department* to serve
 7 the *computer science strategic implementation advisory board,*
 8 *panel*, including, but not limited to, ~~by coordinating in the following~~
 9 *the actions:*

10 (1) ~~Coordinating the efforts of the advisory board and ensuring~~
 11 *panel by writing up the recommendations of the advisory panel*
 12 *members and disseminating them to all stakeholders.*

13 (2) *Soliciting input and public comments.*

14 (3) *Preparing the necessary legislative reports to share the*
 15 *advisory panel's recommendations.*

16 (4) *Ensuring that the advisory board's panel's recommendations*
 17 *are implemented considered in order to achieve the intentions of*
 18 *the computer science strategic implementation plan.*

19 (b) *The duration of the liaison's role shall only be through the*
 20 *implementation of the computer science content standards and*
 21 *curriculum frameworks in order to ensure that the*
 22 *recommendations from the computer science strategic*
 23 *implementation advisory panel are considered for implementation.*

24 53313. (a) ~~The advisory board shall report any necessary~~
 25 ~~legislative changes related to computer science education to the~~
 26 ~~state board and to the department on or before January 1, 2018.~~

27 (b) ~~The department and state board shall consider the~~
 28 ~~recommendations submitted by the computer science strategic~~
 29 ~~implementation advisory board panel pursuant to Section 53311~~
 30 ~~and the recommendations submitted to the state board by the~~
 31 ~~Instructional Quality Commission pursuant to Section 60605.4,~~
 32 ~~53311, shall develop and adopt a computer science strategic~~
 33 ~~implementation plan, and shall submit the plan to the Legislature~~
 34 ~~in conformance with Section 9795 of the Government Code on or~~
 35 ~~before January 1, 2019.~~

36 53314. *If state or federal funds are not available or sufficient*
 37 *for purposes of this chapter, the computer science strategic*
 38 *implementation advisory panel may evaluate the process and ability*
 39 *to accept grants and receive donations and other financial support*
 40 *from public or private sources for purposes of convening the*

1 *advisory panel, preparing the computer science strategic*
2 *implementation plan, and ensuring that the recommendations are*
3 *considered by the appropriate stakeholders.*

4 ~~53314.~~

5 53315. This chapter shall become inoperative on July 31, 2020,
6 and, as of January 1, 2021, is repealed, unless a later enacted
7 statute, that becomes operative on or before January 1, 2021,
8 deletes or extends the dates on which it becomes inoperative and
9 is repealed.

O