



STATE OF HAWAII
DEPARTMENT OF EDUCATION
KA 'OIHANA HO'ONA'AUAO
P.O. BOX 2360
HONOLULU, HAWAII 96804

Date: 02/06/2023

Time: 03:00 PM

Location: CR 229 & Videoconference

Committee: Senate Education

Department: Education

Person Testifying: Keith T. Hayashi, Superintendent of Education

Title of Bill: SB 0816 RELATING TO COMPUTER SCIENCE EDUCATION.

Purpose of Bill: Allows students to complete computer science courses as a substitute for science credits at the high school level to count towards graduation requirements. Requires a computer science course credit as a graduation requirement at the high school level beginning with the 2030-2031 school year. Appropriates funds for teacher professional development in computer science.

Department's Position:

The Hawaii State Department of Education (Department) respectfully offers comments on SB 816.

The Department agrees that Computer Science (CS) education is very important and that many job opportunities are computer-based. However, CS is only a piece of the knowledge that emerging scientists and engineers will need. Substituting CS for a science credit would not be aligned to the state-adopted next generation science standards (NGSS).

Further, the Department considers CS as a separate subject area with standards adopted by the Hawaii State Board of Education (Board), and is not considered as an equivalent substitute for high school level science courses. Although having CS as a "substitute" for a required science credit may increase the number of students who take CS and possibly open pathways for students to pursue a career in science or engineering, it should be noted that highly selective colleges seek students who have 3 or 4 pure science credits for admission.

The Department has begun preliminary internal discussions and plans to propose CS as a program of study option to fulfill a graduation requirement per Board Policy 102-15. As graduation requirements fall within the purview of the Board, the Department respectfully requests time to allow the Board the opportunity to consider whether CS should be part of the graduation requirements.

Thank you for this opportunity to provide testimony on SB 816.



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hawaiikidscan.org

David Miyashiro
Executive Director

February 6, 2023

Committee on Education
Senator Michelle N. Kidani, Chair
Senator Donna Mercado Kim, Vice Chair

Aloha Chair Kidani, Vice Chair Kim, and Members of the Committee,

HawaiiKidsCAN strongly supports SB816, which allows students to complete computer science (CS) courses as a substitute for science credits at the high school level to count towards graduation requirements; requires a computer science course credit as a graduation requirement at the high school level beginning with the 2030-2031 school year; and appropriates funds for teacher professional development in computer science.

Founded in 2017, HawaiiKidsCAN is a local nonprofit organization committed to ensuring that Hawaii has an excellent and equitable education system that reflects the true voices of our communities and, in turn, has a transformational impact on our children and our state. We strongly believe that all students should have access to excellent educational opportunities, regardless of family income levels and circumstances.

As CS skills become more foundational to quality academic and career success, Hawaii must ensure that students have equitable access to CS courses and credits. In Hawaii, we've made good progress, thanks to strong efforts from the Legislature, Hawaii Department of Education (DOE), and other partners, but much work remains. For example, just 20% of elementary schools offer computer science learning, and just 13.9% of students in the DOE were enrolled in a CS course in the 2021-2022 school year.¹ When you consider that Hawaii currently has 2,718 open computing jobs, and that these open jobs have an average salary of \$83,548, it's clear that we are not fully setting our kids up for success.² Additionally, the COVID-19 pandemic has cemented remote work in computing as a normal and common career choice, particularly in STEM fields, which opens up additional opportunities for employment for Hawaii residents without forcing them to leave for the continent to pursue high-quality jobs.

¹ <https://public.tableau.com/app/profile/hidoe.dga/viz/ACT158PublicDashboard/Cover>

² <https://code.org/advocacy/state-facts/HI.pdf>

SB816 proposes a simple yet extremely powerful change Hawaii could make to change how CS credits are recognized in a student's path to graduation. States that count computer science as a core graduation requirement see 50% more enrollment in their AP Computer Science courses and increased participation from underrepresented minorities. Hawaii could follow suit by doing more than simply offering honors credit for Advanced Placement CS (which is the current case), and instead make CS count as a core requirement.

We respectfully request the following amendments:

- Computer Science Graduation Credit Requirement (Page 3, Lines 18-20): Change the credit substitution from a science course to an additional program of study option to the current high school diploma two (2) credit requirement in world language, fine arts, or career and technical education/JROTC. This will allow students to choose whether to fulfill this requirement with two (2) credits in one of the specified programs of study with the additional CS option.
- Computer Science Graduation Requirement (Page 4, Lines 1-3 and 16-20): We have been supporting the DOE in its efforts to propose computer science as a graduation requirement option to the Hawaii State Board of Education (BOE) and respectfully request the start date for this implementation be revised from the 2030-2031 school year to 2025-2026 school year for the graduation class of 2030.

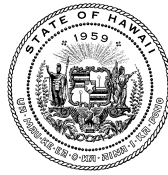
Finally, there is one essential element required to ensure that every school can offer computer science, and that every school has the capacity to offer a range of introductory, intermediate, and advanced coursework: highly-qualified and well-trained computer science educators. There is clear evidence of this from other states, such as Arkansas, which first began investing in computer science education in 2015. Thanks to their strategic planning and large investments in computer science professional development, the state was able to remove computer science teachers from its critical teacher shortage list within five years. Therefore, we applaud this legislation for its inclusion of much-needed funding for computer science professional development to grow our computer science teaching staff and meet the needs and ambitions of our Hawaii students.

This bill builds on recent efforts by the legislature – Act 51 in 2018 and Act 158 in 2021 – to significantly boost computer science access and equity. Without additional action by the legislature, it's unclear if the Hawaii DOE will meet the ambitious targets of these laws, including:

- Beginning with the 2021-2022 school year, ensure that each public high school offers at least one computer science course during each school year.
- Beginning with the 2024-2025 school year, all public elementary, middle, and intermediate schools shall offer computer science courses or computer science content.

Mahalo for your consideration,

David Miyashiro
Founding Executive Director
HawaiiKidsCAN



**STATE OF HAWAII
BOARD OF EDUCATION**
P.O. BOX 2360
HONOLULU, HAWAII 96804

Senate Committee on Education

Monday, February 6, 2023
3:00 p.m.
Via Videoconference
Hawaii State Capitol, Room 229

Senate Bill 816, Relating to Computer Science Education

Dear Chair Kidani, Vice Chair Kim, and Members of the Committee:

The Board of Education (“Board”) respectfully provides **comments** on SB 816, which would, among other things, allow students to complete computer science courses as a substitute for science credits at the high school level to count towards graduation requirements and would require a computer science course credit as a graduation requirement at the high school level beginning with the 2030-2031 school year.

The Board generally opposes proposed legislation that diminishes the Board’s power to formulate statewide educational policy as envisioned and established by Article X, Section 3, of the Constitution of the State of Hawaii.

To this end, the Board has **strong concerns** with the intent and language of this bill. This measure would essentially alter the Board’s graduation requirements it set through Board Policy 102-15. Setting graduation requirements should be the role of the Board, and we believe the Legislature should leave the responsibility of determining educational requirements to the Board as a foundational part of statewide educational policy.

If the Legislature believes computer science education is a high priority, an appropriate alternative to the current language of this measure could be to require the Board and the Department of Education to analyze the need, impact, and feasibility of making computer science a graduation requirement and, based on this analysis, require the Board to determine whether such a change to the graduation requirements would be in the best interests of students and the public. The House Committee on Education was

receptive to this suggestion and subsequently amended HB 503, the companion to SB 816, accordingly. We ask that this committee give the same consideration.

Thank you for this opportunity to testify on behalf of the Board.

A handwritten signature in cursive script that reads "William N. Arakaki".

Sincerely,

Bill Arakaki

Chairperson, Board of Education 2023 Legislative Ad Hoc Committee



TECHNET
THE VOICE OF THE
INNOVATION ECONOMY

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February 3, 2023

The Honorable Michelle Kidani
Chair, Senate Education Committee
Hawaii State Capitol
415 Beretania Street, Room 214
Honolulu, HI 96813

The Honorable Donna Mercado Kim
Vice Chair, Senate Education Committee
Hawaii State Capitol
415 South Beretania Street, Room 218
Honolulu, HI 96813

Re: SB 816 – Relating to Computer Science Education – SUPPORT

Dear Chair Kidani, Vice Chair Kim, and Members of the Committee,

TechNet respectfully submits this letter in support of SB 816, which would allow students to complete computer science courses as a substitute for science credits at the high school level to count towards graduation requirements and require a computer science course credit as a graduation requirement at the high school level beginning with the 2030-2031 school year. This bill would also appropriate funds to the department of education for teacher professional development in computer science, which is a critical component of the skills development pipeline.

TechNet is the national, bipartisan network of technology CEOs and senior executives that promotes the growth of the innovation economy by advocating a targeted policy agenda at the federal and 50-state level. TechNet's diverse membership includes dynamic American businesses ranging from startups to the most iconic companies on the planet and represents over five million employees and countless customers in the fields of information technology, e-commerce, the sharing and gig economies, advanced energy, cybersecurity, venture capital, and finance.

Computing is the fastest-growing, highest-paying, and largest sector of new jobs in the country. In Hawaii, open computing jobs have an average salary of \$83,548. Computing skills are needed in virtually every field, making it foundational knowledge for those entering the job market. All students in Hawaii need and deserve access to the computer science education they will need to succeed in the future. SB 816 is a critical step towards ensuring that the next generation of Hawaii residents remain competitive in our increasingly global, interconnected, and technology-driven economy.

For these reasons, TechNet strongly supports SB 816. If you have any questions regarding TechNet's position on this bill, please contact Lia Nitake, Deputy Executive Director, at Lnitake@technet.org or 310-940-5506.

Sincerely,



Lia Nitake
Deputy Executive Director for California and the Southwest
TechNet

SB-816

Submitted on: 2/2/2023 6:14:51 PM

Testimony for EDU on 2/6/2023 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
cheryl Burghardt	Individual	Comments	Written Testimony Only

Comments:

COMMENTS

As an educator, I can understand stressing the importance of Computer Education in our schools. What I don't understand is that it's 2023 and a viable path for high school students to learn all or any science within the umbrella of computer ed. or the other way around is not being discussed. Upon reading the bill, it seems that a concern is that not that many students are signing up for the courses. Do we know the reason for that? Is it that they have too many other courses or perhaps they don't feel they need a basic computer course since most high school students are quite adept at basic skills? Is there data to answer that question? Most students use their phones these days for almost everything. Have the policies and procedures for their use been established for use on curricular-related work? It's hard reading the bill to see upon what foundational research it is based. Yes, computer education is important but this bill seems more like the year 2000 rather than looking to 2050 and beyond.



Chamber of Commerce HAWAII

The Voice of Business

**Testimony to the Senate Committee on Education
Monday, February 5, 2023, at 3:00 P.M.
Conference Room 229 & Videoconference**

RE: SB 816 Relating to Computer Science

Aloha Chair Kidani, Vice Chair Mercado Kim, and Members of the Committee:

The Chamber of Commerce Hawaii ("The Chamber") **strongly supports** SB 816, which Allows students to complete computer science courses as a substitute for science credits at the high school level to count towards graduation requirements. Requires a computer science course credit as a graduation requirement at the high school level beginning with the 2030-2031 school year. Appropriates funds for teacher professional development in computer science.

This bill aims to expand the availability of computer science education across the state, offering students of all ages the opportunity to gain valuable knowledge and skills in a necessary and increasingly important subject. We believe that providing students with a comprehensive computer science education will open up new pathways to success, both in the classroom and in their future careers.

This bill is especially important in light of Hawaii's rapidly-growing tech industry. With tech companies such as Google, Apple, and Microsoft investing in the state, there is a need for a highly-skilled workforce. With the passage of this bill, Hawaii can ensure that its students are equipped with the skills to fulfill these jobs and contribute to the state's success.

We also believe that this bill could have a positive effect on the state's economy. By providing students with the skills to fill these tech jobs, the state can attract more businesses and increase job opportunities. This could lead to a rise in wages and an overall improvement in the economic conditions of the state.

Finally, we recognize the importance of computer science education to improving the overall quality of life in Hawaii. With more people having access to this knowledge, more people can use it to innovate and create new products and services, improving the state's overall quality of life.

The Chamber is Hawaii's leading statewide business advocacy organization, representing about 2,000+ businesses. Approximately 80% of our members are small businesses with less than 20 employees. As the "Voice of Business" in Hawaii, the organization works on behalf of members and the entire business community to improve the state's economic climate and to foster positive action on issues of common concern.



Chamber *of* Commerce HAWAII

The Voice of Business

Based on feedback from our membership and the business community, the Chamber strongly supports this bill.

Thank you for the opportunity to testify.