JOSH GREEN, M.D.
GOVERNOR

BRUCE D. VOSS
CHAIRPERSON

STATE OF HAWAII
BOARD OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

Senate Committee on Ways and Means

Tuesday, April 4, 2023
10:30 a.m.
Via Videoconference
Hawaii State Capitol, Room 211

House Bill 503, House Draft 2, Senate Draft 1, Relating to Computer Science Education

Dear Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Committee:

The Board of Education ("Board") respectfully provides **comments** on HB 503 HD2 SD1, which would, among other things, require the Board to work with the Department of Education to conduct an analysis on the need, impact, and feasibility of making computer science a graduation requirement and require the Board to determine whether making computer science a graduation requirement would be in the best interests of public school students and the public.

We appreciate the amendments made by the House Committee on Education and believe this bill now respects the education policymaking role the Board plays. 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. The Board had strong concerns with the original version of this bill, which would have essentially altered the Board's graduation requirements it set through Board Policy 102-15.

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

Sincerely,

Bill Arakaki
Chairperson, Board of Education 2023 Legislative Ad Hoc Committee

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

Date: 04/04/2023
Time: 10:30 AM
Location: CR 211 & Videoconference
Committee: Senate Ways and Means

Department:	Education
Person Testifying:	Keith T. Hayashi, Superintendent of Education
Title of Bill:	HB 0503, HD2, SD1 RELATING TO COMPUTER SCIENCE EDUCATION.
Purpose of Bill:	Requires the Board of Education to work with the Department of Education to conduct an analysis on the need, impact, and feasibility of making computer science a graduation requirement. Requires the Board of Education to determine whether making computer science a graduation requirement would be in the best interests of public school students and the public. Requires a report to the Legislature. Appropriates funds for teacher professional development in computer science. Effective 7/1/2050. (SD1)

Department's Position:
DRAFT 03/31/2023 bt

The Hawaii State Department of Education (Department) respectfully offers comments on HB 503, HD2 SD1.

The Department defers to the Board of Education as to the responsibilities described in Section 2 of the bill.

The Department supports the additional funding that will help expand the number of Hawaii Qualified Teachers in Computer Science to meet the goal of providing all students with computer science learning opportunities, as long as it does not impact the priorities identified in the Department's Hawaii State Board approved budget.

Thank you for this opportunity to provide testimony on HB 503, HD2 SD1.

April 4, 2023

Committee on Ways and Means
Senator Donovan M. Dela Cruz, Chair
Senator Gilbert S.C. Keith-Agaran, Vice Chair

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Committee,

HawaiiKidsCAN strongly supports HB503 HD2 SD1, which requires the Board of Education to work with the Department of Education to conduct an analysis on the need, impact, and feasibility of making computer science a graduation requirement; requires the Board of Education to determine whether making computer science a graduation requirement would be in the best interests of public school students and the public; requires a report to the Legislature; 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 computer science (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, just 20% of public elementary schools offer computer science learning, and just 13.9% of all public school students were enrolled in a CS course in the 2021-2022 school year. 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.[1] 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.

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[1] https://code.org/advocacy/state-facts/HI.pdf

As amended, HB503 HD2 SD1 recognizes and respects the authority of the Board of Education (BOE) to set education policy for the state. At the same time, it ends years of inaction at the BOE on this topic, putting the urgency and responsibility on the BOE to ensure that computer science is a core part of the student experience. This change is vital in order to achieve equity, as 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 groups of students.[2] We do not believe the BOE has put computer science on their agenda since 2018, when they adopted the Computer Science Teachers Association's K-12 Computer Science Standards.[3] In the absence of BOE action, the legislature has responded to growing interest and frustration from community members, students, and teachers.

HB503 HD2 SD1 also supports Hawaii's hard working public school teachers by investing in high-quality professional development. All teachers deserve the opportunity to learn from great local programs like STEMworks. 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

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[2] https://code.org/files/Making_CS_Fundamental.pdf
[3]
https://www.hawaiipublicschools.org/TeachingAndLearning/StudentLearning/CSforHI/Pages/default.aspx

HawaiiKidsCAN

HB-503-SD-1
Submitted on: 4/3/2023 7:17:57 AM
Testimony for WAM on 4/4/2023 10:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Amber Davis	Testifying for Code.org	Support	Written Testimony Only

Comments:

Dear Chair, Vice Chair, and members of the committee:

Thank you for your consideration of HB 503 HD2 SD1

If this bill passes, this will be an important step forward for Hawaiʻi students. Allowing the board of education to determine the feasibility of a computer science graduation requirement will help ensure all Hawaiian students learn computer science, and to especially close the gaps in computer science for girls and underrepresented students.

Currently in Hawaiʻi, every school is required to offer computer science, but yet there are still 23% of schools that do not provide this foundational learning opportunity to students.

Every student is capable of learning computer science. We believe that it is a foundational subject that every student would benefit from learning. In a 21st century economy, computer science gives students the chance to learn how to create technology, and use critical thinking and problem solving skills to solve the problems of tomorrow. With over 2500 jobs posted per month in computing with salaries exceeding 80,000 dollars annually, it is crucial that students are exposed to this content area at an early age.

It has become increasingly clear that we cannot leave those opportunities to chance for Hawaiian students. There is a stark gender gap amongst students who enroll in computer science. While this gap is narrowing every year, unfortunately who enrolls in computer science is not equitable amongst all students. When you look at the gender breakdown, of the 3.8% of students that are enrolled in a computer science course, only 23.8% of those students are female.

This gender gap is not unique to Hawaiʻi. The only states that we have seen solve this problem have been states that have passed a Computer Science Graduation Requirement, and that is why we are advocating for this policy. We are encouraged by this legislation to require the Board of Education to evaluate this policy.

Thank you for your time and consideration of this good bill.

Testimony to the Senate Committee on Ways and Means
Tuesday, April 4, 2023, at 10:30 A.M.
Conference Room 211 & Videoconference

RE: HB 503 HD2 SD1 Relating to Computer Science Education

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Committee:

The Chamber of Commerce Hawaii ("The Chamber") **supports HB 503 HD2 SD1**, which requires the board of education to work with the department of education to conduct an analysis on the need, impact, and feasibility of making computer science a graduation requirement. Requires the board to determine whether making computer science a graduation requirement would be in the best interests of public-school students and the public. Requires a report to the legislature. 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.

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

Thank you for the opportunity to testify.

HB-503-SD-1
Submitted on: 3/31/2023 11:26:07 AM
Testimony for WAM on 4/4/2023 10:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Leah Gouker	Individual	Oppose	Written Testimony Only

Comments:

In opposition.

Submitted By	Organization	Testifier Position	Testify
Jake Ishikawa	Individual	Oppose	Written Testimony Only

Comments:

Chair Dela Cruz, Vice Chair Keith-Agaran, and members of the Senate Ways and Means Committee,

My name is Jake Ishikawa, and I am a junior at Kapolei High School. I am testifying in opposition to House Bill 503 HD2 SD1. I am not going to deny the benefits to computer science courses and the need to be digitally literate in this evolving 21st century. However, I do not support the idea of making a computer science course mandatory for graduation in the State of Hawaiʻi and therefore do not support the idea of the Department of Education conducting an analysis to see if a computer science course for graduation is needed. Some schools already offer courses on computer science, such as computer literacy courses and even Advanced Placement computer science courses. Students who are interested in these courses have the opportunity to take them as an elective course. There are students, however, that are not interested in taking a computer science course. Furthermore, with the shortage of teachers, schools would need to find qualified teachers to teach these courses because it would be mandatory to graduate. It is highly likely that students will end up with an unqualified teacher, not really teaching computer science; it is possible that the course will be unengaging and not teach students the skills you hope it will teach them. Teachers assign coursework to be completed at home and for students who live in rural communities with limited computer or internet access, they will struggle to complete necessary coursework to be successful in a computer science course. There are already set graduation requirements for students, and adding to it may cause confusion and will prohibit students from taking courses they are actually interested in. If this bill were to pass, a student may have to forgo taking a course they are interested in, like a foreign language course or art course to meet this requirement. High school is the time for students to explore career options and take courses meaningful to them. Seldom do students take courses that they have no interest in. Adding a computer science course requirement in order to graduate creates an unnecessary burden on students and possibly schools.

Once again, I do not support House Bill 503 HD2 SD1. Thank you for the opportunity to testify.

With gratitude,

Jake Ishikawa

Committee on Ways and Means   April 4, 2023
Senator Donovan M. Dela Cruz, Chair
Senator Gilbert S.C. Keith-Agaran, Vice Chair

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran, and
Members of the Committee,

I am a mother of a sophomore son at Kalani High and a
Computer Science Teacher at Queen Kaʻahumanu
School. I wholeheartedly support HB503 HD2 SD1 that
would motivate kids to take Computer Science in High
School. My son successfully took CS as a freshman, yet
without CS as a core grad requirement, he is not
interested in taking AP Computer Science.

CS opens opportunities! Here are recent photos of our
wonderful students learning CS from each other. In one
photo, 1st graders learn to read blockly code that upper
grades code into dances. Another shows learning CS
vocabulary "conditional" with code.org's unplugged lesson "Conditionals with Cards".
Kids create their very own card games! Then, we have students proudly sharing their
code that uses conditionals to program Dash robots for a dance party! 31 students from
the thriving University of Delaware Computer Science & Engineering visited to teach our
Hawaii students. In exchange, our kids taught the genius bar wise "16th graders" how to
program Dash robots. Let's keep everyone learning from preschool through college!
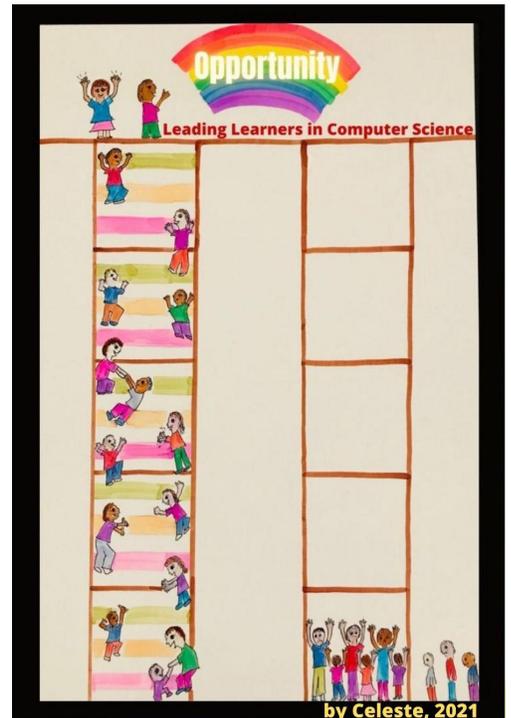
                       Mahalo,
                       Celeste Yukiko Endo
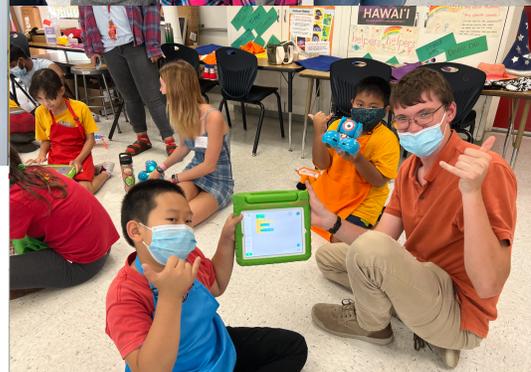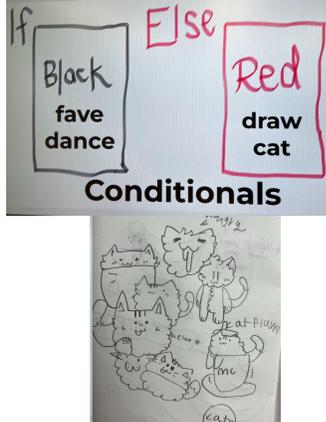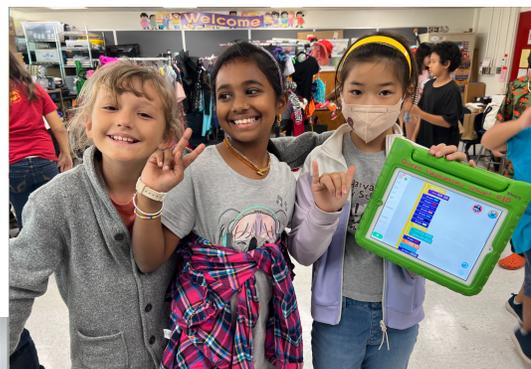
HB-503-SD-1
Submitted on: 4/3/2023 10:11:55 AM
Testimony for WAM on 4/4/2023 10:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Tabatha Mitchell	Individual	Support	Written Testimony Only

Comments:

Aloha Senator Dela Cruz,

I am writing in strong support if HB593 HD2 SD1. Computer science education is critical for our kids to remain competitive in all industries.

Please move this bill forward.