



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

Date: 02/01/2021
Time: 03:00 PM
Location: 229
Committee: Senate Education

Department: Education

Person Testifying: Dr. Christina M. Kishimoto, Superintendent of Education

Title of Bill: SB 0242 RELATING TO EDUCATION.

Purpose of Bill: Requires public and charter schools to offer education in computer science. Requires annual reports.

Department's Position:

The Department of Education (Department) provides comments on S.B. 242 and will be prepared to submit the grant program summary report by December 1, 2022, and each December 1 thereafter as requested.

For the 2020-2021 school year, the Department has continued to collaboratively address the Computer Science Action Plan deliverables with the fifteen complex area computer science support teams to develop a comprehensive School Design for K-12 Computer Science Education Curricula and Implementation Plan. This planning effort includes the K-12 Computer Science curriculum and learning opportunities alignment with a focus on rigorous Computer Science instruction in kindergarten through grade 12 and high-quality professional opportunities that are essential to expanding the Computer Science teacher pipeline.

The Department offers comment on the following proposals in this measure:

Computer Science Definition (Page 4, Lines 12-14): In alignment with the national definition for Computer Science, the Department recommends using the definition for Computer Science by Allen Tucker from the K12 Computer Science Framework.

“Computer science is the study of computers and algorithmic processes, including their principles, their hardware and software designs, their [implementation], and their impact on society” (Tucker et. al, 2003, p. 6).

Additionally, through the efficiencies created as a result of our tri-level system of governance, the reporting information required through this measure does not need to be accumulated by complex areas and can be achieved through the state office. This would relieve the reporting burden from our complex area superintendents.

Thank you for this opportunity to provide testimony on S.B. 242.

The Hawai'i State Department of Education is committed to delivering on our promises to students, providing an equitable, excellent, and innovative learning environment in every school to engage and elevate our communities. This is achieved through targeted work around three impact strategies: school design, student voice, and teacher collaboration. Detailed information is available at www.hawaiipublicschools.org.

DAVID Y. IGE
GOVERNOR



JOHN S.S. KIM
CHAIRPERSON

LATE

STATE OF HAWAII
STATE PUBLIC CHARTER SCHOOL COMMISSION
(‘AHA KULA HO‘ĀMANA)

<http://CharterCommission.Hawaii.Gov>
1111 Bishop Street, Suite 516, Honolulu, Hawaii 96813
Tel: (808) 586-3775 Fax: (808) 586-3776

FOR: SB 242 Relating to Education
DATE: February 1, 2021
TIME: 3:00 P.M.
COMMITTEE: Committee on Education
ROOM: Conference Room 229
FROM: Yvonne Lau, Interim Executive Director
State Public Charter School Commission

Chair Kidani, Vice Chair Kim, and members of the Committee:

The State Public Charter School Commission (“Commission”) appreciates the opportunity to submit this testimony and **SUPPORTS THE INTENT of SB 242** which requires department public schools and public charter schools to offer education in computer science.

The success of Act 51, Session Laws of Hawaii 2018, in expanding opportunities for public school students to receive instruction in computer science is encouraging. The Commission is cautiously optimistic that these opportunities will be available at public charter schools but is aware that funding for this program appears to be currently limited to the grant program administered by the Department of Education (DOE) with the Computer Science Education Special Fund. Without any specific appropriations for this program, there is concern that public charter schools may not be able add this new program to the school’s curriculum and meet the requirements of this legislation.

The Commission is available to assist in facilitating any collaboration and input from the public charter schools to the Legislature and DOE to effectuate this program. Thank you for the opportunity to provide this testimony. I stand on my written testimony, but am available to answer any questions you may have.



david.miyashiro@hawaiikidscan.org
hawaiikidscan.org

David Miyashiro
Executive Director

February 1, 2021

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

State Capitol
415 South Beretania Street
Honolulu, HI 96813

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

HawaiiKidsCAN strongly supports SB242, which requires public and charter schools to offer education in computer science, and requires annual reports.

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 an organization that was proud to advocate in support of the legislation that was signed by Governor Ige as Act 51, HawaiiKidsCAN believes it is critical to build on this strong foundation in our state's efforts to expand access and equity in computer science education and increase our high-tech workforce. We supported the initial legislation after our *State of Computer Science Education in Hawaii 2018* report (accessible at <https://tinyurl.com/CSHawaii2018>) found that less than half of Hawaii public schools offered computer science courses, only 14 high schools offered Advanced Placement Computer Science (AP CS) courses, and only 32 percent of the 290 AP CS test takers in 2017 were female and only 4 percent—just 12 students statewide—identified as Native Hawaiian/Pacific Islander.

As disruptions by COVID-19 have demonstrated, Hawaii needs innovative learning experiences and a diversified economy, particularly where residents with computer

science skills can earn high incomes while working remotely for local, national, and global companies. Research continues to overwhelmingly show that jobs in Hawaii requiring computer science skills will grow twice as fast and pay twice as much versus the state average over the next ten years. An investment in computer science education is an investment in Hawaii's future resilience.

Early exposure

- Hawaii has made great progress since the passage of Act 51 in 2018 with expanding computer science at the high school level. Given that early exposure at the elementary and middle schools levels to these skills is incredibly important, especially for underrepresented students, SB242 is laser-focused on these foundational grades.
- [Research](#) has shown that early exposure to STEM initiatives and activities positively impacts elementary students' perceptions and dispositions. By capturing students' interest in STEM content at an earlier age, a proactive approach can ensure that students are on track through middle and high school to complete the needed coursework for adequate preparation to enter STEM degree programs at institutions of higher learning. As a result, programs focusing on STEM initiatives and content are a growing priority in American schools with aims to provide early exposure for elementary students
- The goals set forward by SB242 for all schools to offer computer science are ambitious but achievable. The bill recognizes this must be a multi-year process, driven by a clear and inspirational north star.

Better data

- SB242 promotes equity and access by providing better data on which students are included or excluded in computer science courses. This reporting is incredibly important as the state builds its computer science pipeline, given the gender and ethnic gaps that exist in STEM industries. According to the University of Hawaii's [landscape report](#), for example, Native Hawaiian and Micronesian students represented just 9% and 0.4% of advanced placement computer science test takers in the 2019-2020 school year, respectively. These gaps must be carefully tracked and addressed long before students reach these advanced courses.

Stronger partnerships

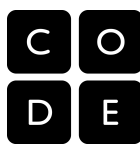
- Quality work-based learning and career readiness experiences are critical for ensuring students actually can and want to enter computer science fields. SB242 makes it easier for industry partners to support our students and schools financially.
- Given the difficult financial situation facing Hawaii's state revenues, private support is a powerful tool to ensure students' academic and career opportunities

do not suffer due to program cuts. As a co-convenor of the local CSforHI coalition with Code.org, HawaiiKidsCAN has already engaged a number of promising industry partners around supporting the special fund.

- Programs like IBM's P-TECH offer a strong example of students graduating from high school immediately ready to launch careers in high-wage, high-growth sectors. The special grant fund would enable employers to more effectively strengthen career and technical education partnerships with schools so that students have a clear pathway to a job.

Mahalo for your consideration,

David Miyashiro
Founding Executive Director
HawaiiKidsCAN



January 31, 2021

Re: SB 242; Support

Dear Members of the Senate Education Committee,

Code.org enthusiastically supports SB 242, which would: a) ensure that all elementary and middle schools offer computer science courses or content by the 2024-2025 school; b) ensure that each public charter school offers computer science courses or content such that students can study the content at the elementary, middle, and high school levels; and c) create a fund for gifts, donations, or future appropriations to expand K-12 computer science pathways and support teachers.

Hawaii has made incredible progress in ensuring that every DOE high school provides students with access to computer science courses. However, to build student interest, it is crucial that all students have opportunities to learn the fundamentals in elementary and middle school. Studies show that by middle school, students have already decided whether computer science is for them or not. Early access and exposure can help students see how the subject can enable them to explore their passions.

Computing is a foundational skill for K-12 students. It develops students' computational and critical thinking skills and teaches them how to create—not just use—new technologies. And Hawaii has averaged over 1,400 open computing jobs each month over the past year. Businesses in every industry are in need of students graduating with computing knowledge. There is incredible interest in supporting K-12 computer science education right now, and this bill furthers the DOE's existing initiatives and leverages the public support for K-12 computer science.

Thank you for your efforts in providing students in Hawaii with opportunities to pursue computer science education. If you have any questions, please contact Katie Hendrickson at Katie@code.org. Thank you for your consideration of this matter.

Sincerely,

Dr. Katie Hendrickson
Director of State Government Affairs
Code.org
www.code.org



February 1, 2021

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,

We are HSTTE - the Hawai'i Society for Technology in Education. Our organization has over 500 members in education hailing from public, private, and charter schools around the state, most of whom are teachers. Today we rise in proud support of SB242.

We live in a digital age in which computers are everywhere and have become an essential part of our lives, especially during this COVID19 pandemic. Every student should have access to technology, whether it be computers, smartphones, or tablets because almost everything we do requires some form of programming.

Coding or computer programming is writing a set of instructions that a computer understands so it will perform a task. There are several advantages of learning to code in elementary school. First, learning programming empowers kids. Coding puts children in control of the computer and through experimentation builds mastery in sequencing skills, counting, problem solving, logical thinking, cause and effect, and critical thinking. Additionally, children can express themselves through code and find it enthralling to create games, apps, and to even control robots.

The younger children are when we introduce them to coding, the more comfortable they will become with computers and technology. They will be more successful when presented with challenging learning opportunities. Developing the basics provides students with computer skills they will need for any career they choose in the future.

HSTTE supported the passage of Act 51 in 2018 with expanding computer science at the high school level. Given that early exposure at the elementary and middle schools levels to these skills is incredibly important, especially for underrepresented students, SB242 is focused on

these foundational grades. Having students entering high school already having a computer science background means a more skilled workforce for the future of our state.

SB242 promotes equity and access by providing better data on which students are included or excluded in computer science courses. Quality work-based learning and career readiness experiences are critical for ensuring students actually can and want to enter computer science fields. SB242 makes it easier for industry partners to support our students and schools financially growing opportunities for the expansion of the study of computer science. For these reasons and more, please move SB242 forward.

Mahalo,

Hawai'i Society for Technology in Education

SB-242

Submitted on: 1/31/2021 12:39:00 PM

Testimony for EDU on 2/1/2021 3:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Kirsten Naomi Rogers Chapman	Individual	Support	No

Comments:

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

My name is Kirsten Naomi Rogers Chapman and I was most recently an Evaluation Specialist at HIDOE. After ten years of serving in education in Hawai'i, I left the islands to pursue my doctorate in Education Leadership at the Harvard Graduate School of Education. I began my career in education in Hawai'i, as a teacher at Wheeler Middle School, and in my first year endured the furloughs that resulted from the 2008 economic crisis.

Over a decade later, the COVID-19 pandemic has wrought havoc not dissimilar to what we endured in 2008, and the need to diversity our state's economy is more clear than ever. To weather this crisis, which will likely continue and its effects continue to devastate, it's important we ensure students are equipped with the skills to thrive in high-wage, high-growth industries here in the state.

We've made great progress with Act 51; SB242 builds on that progress to promote and accelerate equity and access to computer science courses by providing better student data.

For these reasons, I urge you to consider and support this bill.

Me ka pono,

Kirsten

SB-242

Submitted on: 1/29/2021 5:19:08 PM

Testimony for EDU on 2/1/2021 3:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Allix Hessick	Individual	Support	No

Comments:

I vote yes on this bill to increase computer science literacy and further expanding and supporting the education of our future leaders in this industry.

SB-242

Submitted on: 1/30/2021 5:26:15 PM

Testimony for EDU on 2/1/2021 3:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Kaulana Dameg	Individual	Support	No

Comments:

Computer science education is essential. I strongly support SB242.

January 30, 2021

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

State Capitol
415 South Beretania Street
Honolulu, HI 96813



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

I teach Computer Science (CS) at Queen Ka'ahumanu School (QKS), where I gratefully get to inspire Preschool through 5th graders. I'm proud to support **SB242** because I have witnessed how CS grows imagination and a zest for learning discoveries in our youth. CS opens opportunities for students to think creatively and dream of new possibilities. At my school, we are all learning to be Technology Wizards in Training. Kindergarteners may get confused and think we are "Lizards in Training", but that is another story.

During one of my first years as a technology teacher at QKS, I surveyed my students to ask them what they wanted to learn in technology classes. A 5th grader gifted me an answer that has shaped my teaching since. She wrote that she wanted to learn how to get a good job. Whoa I thought, a 5th grader who was already thinking of working! Later, I heard from her teacher that her family was living out of their car. Every night, her father would worry when she had to use the park bathroom. The daughter was deeply concerned for her family and seriously wanted to help.

Soon after, I ran into my friend Chad, owner of a job placement company. I asked him what he thought would be the best type of job for our students to shoot for. He said that without a doubt, Hawai'i needs computer programmers. High pay partnered with high demand makes CS skilled workers totally marketable. Since then, I have bravely embarked on a quest to find invigorating ways to teach coding.

FREE magnificent code.org lessons teach students how to troubleshoot and create innovative solutions to diverse problems. Our youngest children fully love Code Yo' Choreo, when we learn about coding concepts through dance. Early childhood coding has strengthened CS in our upper grades. When we track code.org student progress, upper grade students who have been learning coding since kindergarten, far surpass code.org levels completed and lines of code written, compared to peers without earlier CS experiences.

Mahalo piha for your consideration of SB242,

Celeste Yukiko Endo

“ In the new
economy,
computer science
isn't an optional
skill —
It's a basic skill. ”

— President Barack Obama
Announcing the Computer
Science for All Initiative,
Jan. 30, 2016

February 1, 2021

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,

My name is Sarah “Mili” Milianta-Laffin, and I teach Computer Science at Ilima Intermediate School in Ewa Beach. I'm also a board member for the Hawaii Society for Technology in Education, an organization of over 500 public, private, and charter school teachers in our state. **I'm writing today in strong favor of SB 242 to expand Computer Science education in elementary and middle schools.**

I know that HSTE, and other organizations have submitted testimony on this issue, so I'm going to focus on the experience of being a Computer Science (CS) teacher in Hawaii. My initial teacher training was as a Science teacher. When you have a department like Science at a school, you work together with other Science teachers to make lessons, refine the curriculum, and reflect on data.

As the only teacher at my school who teaches CS, it's tough. I can't go to my department and ask questions. My “department” is mostly teachers I connect with on social media to talk about teaching CS in the #808Educate community on Twitter and Instagram, but even there, there aren't that many who teach what I teach. My hope is that SB242 would expand the number of

CS teachers who have training in the content in elementary and middle schools like mine, so that we can be a resource to each other and our students.

I was chosen to be part of the inaugural Hawaii Code.org cohort for CS through STEMworks in 2017. I was sent to Atlanta, Georgia for a week of training with teachers from around the country. We had about 30 teachers from Hawaii, but in the giant ballrooms there were hundreds of teachers present from multiple states.

I remember thinking 1) how awesome it would be to work with that many teachers passionate about CS, and 2) if this many teachers are taking CS back to their communities, will my Ewa Beach students fall behind their peers? The expanding of CS education with this bill would put those fears to rest. As President Obama said, "In the new economy, Computer Science isn't an optional skill -- it's a basic skill!"

My favorite Vice Principal would say, "In god we trust; all others bring data." We don't have data on CS in Hawaii, and we need quality data in education to make decisions. SB 242 would help us understand how our students are doing in CS, and what our students need. Using that data, teachers can then work together with local groups and industry to make a robust CS education in Hawaii a reality for all of our keiki.

Finally, CS education is an issue of equity. CS instruction has been happening for well over a decade at our state's elite and exclusive private schools. My public school is Title 1, meaning that we serve students who don't always have access to resources that their private school peers use daily. Public school students deserve to have an excellent and complete education, even if their families can't pay for it. My testimony today carries with me the weight of the 170 students I have this semester, who deserve the same access to CS education as their wealthy peers. Even if students like mine aren't present in today's Zoom hearing room, please keep them in your hearts and mind also, as you move through this legislative session; they're counting on you too.

Mahalo for reading, and supporting Computer Science students like mine at Ilima Intermediate School by moving SB242 forward.

Respectfully,

Sarah "Mili" Milianta-Laffin

2020 Hawaii State Finalist for the Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST)

2020 ISTE "Making IT Happen" Award Winner

2020 Hawaii State Teachers Association "Pono Award" Winner for Social Justice Advocacy in Education

PS: You are welcome to visit my CS classroom at Ilima Intermediate. Please email Sarah.Milianta-laffin@k12.hi.us if you'd like me to coordinate a virtual visit.

January 30, 2021

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

State Capitol
415 South Beretania Street
Honolulu, Hawaii, 96813

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

As a computer science teacher at Kalani High School, I wholeheartedly support SB242 and respectfully ask you to join me in doing so.

While the need to diversity Hawaii's economy predates the current COVID crisis, it has been brought to the forefront by the strain placed on our community with the abrupt shifts in the structure of the workplace and the importance of technology necessitated by our pandemic response. The need for not only computer literacy, but computational thinking skills has never been greater, and we cannot relegate the acquisition of them to a small privileged minority. All students need these skills, and our community needs workers with these skills if we are to thrive and compete in the coming decades.

As Kalani's computer science program has blossomed from just a couple of sections five years ago to a full slate of offerings spanning introductory to Advanced Placement classes, I have seen firsthand how a computer science education can broaden horizons, provide opportunities, and change lives. Students who would not have considered college have gone on to major in computer science because of their experiences in our program, and those students want to be able to have futures in Hawaii.

By promoting equity and access at all levels of our K-12 system, SB242 will establish a consistent and seamless pipeline for all of our keiki to gain the skills that will allow them (and our community by extension) to flourish in an increasingly unpredictable world.

Mahalo for your time and attention.

Respectfully,

Michael P. Ida, PhD

SB-242

Submitted on: 1/31/2021 6:29:20 AM

Testimony for EDU on 2/1/2021 3:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Kathryn Wild	Individual	Support	No

Comments:

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

I am a retired teacher and professor. My teaching career has covered classrooms K-12, community college, university level, two Native American reservations, foster middle and high school, and women's prison. As an educator and California Indian with 49 years working with students, I am a big proponent of SB242.

Native students everywhere must be equipped with skills to thrive in high-wage, high-growth industries. SB242 requires computer science courses to be offered at the elementary and middle school levels, improves data collection and reporting, and creates a special fund to improve public-private partnerships to promote career readiness.

Hawaii's Act 51 in 2018 expanded computer science at the high school level. It is imperative that we prepare and engage elementary and middle school students to be computer savvy in today's world. Outreach to low income and remote locations is crucial in order to bring computer science courses equitably to Hawai'i students. SB242 promises to fulfill this goal.

Mahalo, Kathryn Wild, PhD

SB-242

Submitted on: 1/31/2021 11:48:21 AM

Testimony for EDU on 2/1/2021 3:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Ryan Mandado	Individual	Support	No

Comments:

Aloha e Chairwoman Kidani and Vice-Chairwoman Kim,

My name is Ryan Mandado and I'm the Chief Academic Officer of DreamHouse 'Ewa Beach Public Charter School - Hawai'i's newest charter school in Kalaeloa. Our mission is to empower the future leaders of our island communities - to build the pipeline of community leaders for equitable changes in Hawai'i.

I'm in full support of SB 242 and ensuring that Computer Science is available to all children in Hawai'i's public schools. Computer Science (CS) education is crucial for our students because it provides them access points to future careers and economic stability. A big conversation in current policy making spaces is about diversifying Hawai'i's economy. By investing in CS programs in public schools, we can create CS pipelines and start to develop industries across islands to stimulate economic growth for local communities.

As someone who was born and raised low-income in Kalihi, I did not have access to many computer science programs. Access to CS programs is an equity issue and by providing low-income students with these opportunities will close opportunity gaps for majority Native Hawaiian and Pacific Islander youth.

Mahalo for allowing me to share my thoughts about computer science in Hawai'i's schools. Please support SB 242 and provide Hawai'i's children with equitable learning experiences.

With gratitude,

Ryan Mandado

ryanmandado@gmail.com

SB-242

Submitted on: 1/31/2021 2:14:09 PM

Testimony for EDU on 2/1/2021 3:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Burt Lum	Individual	Support	No

Comments:

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

As an individual committed to creating a prosperous Hawai'i, I SUPPORT SB242 , which requires public and charter schools to offer education in computer science. This bill is consistent with the goals set forth in the [Digital Equity Declaration](#) adopted by individuals and organizations in the Broadband Hui as well as recognized by the Association of Hawaiian Civic Clubs in [Resolution 2020 - 31](#).

Mahalo for this opportunity to testify.

SB-242

Submitted on: 1/31/2021 10:01:12 AM

Testimony for EDU on 2/1/2021 3:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Ron Matayoshi	Individual	Support	No

Comments:

Dear Legislator,

I am in support of SB242 that requires computer science courses to be offered at the elementary and middle school levels, improves data collection and reporting, and creates a special fund to improve public-private partnerships to promote career readiness.

I would like to include that reliable wifi access for education is accessible to all, including Adult Education, in Hawaii.

Thank you for your consideration.

January 31, 2021

Committee on Education

Senator Michelle N. Kidani, Chair

Senator Donna Mercado Kim, Vice Chair

State Capitol

415 South Beretania Street

Honolulu, HI 96813

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

"We're changing the world with technology" is a profound statement spoken by the co-founder of Microsoft Foundation, Bill and Melinda Gates Foundation, American business magnate, Software Developer, and philanthropist Bill Gates (Gates Foundation, 2021). Many of our students' academic, social, and emotional needs come from the lack of prior knowledge and experiences conducive to 21st Century learning concepts. Evidence-based qualitative and quantitative research studies conducted on primary school children show that emerging students in computer science technology concepts empowers student academic achievement. Research also supports that computer science lessons scaffold cognitive and problem-solving skill sets, promote growth mindsets, and encourages student motivation (Martín-Gutiérrez et al., 2017). Teachers, students, parents, and community partners are all stakeholders in providing an enriched computer science learning environment for our students. Educational curriculums immersed in computer science prepare our Keiki to visualize and form relationships through the digital sphere and digital competence, conducive to meeting the needs of the Hawai'i Department of Education's 2030 Promise Plan for students' college and career readiness.

Mahalo piha for your consideration of SB242,

Mary Eva Bonnetty

February 1, 2021

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,

When it comes to computer science in the state of Hawaii, my perspective comes from the many roles played within the community over the past decade. Having been an elementary school educator for the past sixteen years, and a complex area teacher for the past two, I am seeing the importance of computer science in our schools and in our system. As the current president of Hawaii Society for Technology in Education and the former president of Computer Science Teachers Association, I bring with me the perspective of community organizations looking to support our teachers during these transitional times. Finally, as a parent of two public school students, one in 2nd grade and the other in 4th grade, I understand the power of technology and how providing early opportunities can make all the difference in the learning experience.

When we look at the impact of computer science on our daily lives, we are hard pressed to find anything that has not been impacted by it. From a tissue to custom jewelry, computer science plays a part in the process of any industry. To prepare our students for the unknown future, we not only need to teach them computer literacy skills, but also computer science skills and computational thinking. Oftentimes we feel overwhelmed or even anxious when we are faced with this task. This is mainly because we don't know where to start or how to break down the problem into smaller, more manageable components. Computer science provides these types of thinking and problem solving skills in a way that no other subject can. Simply put, if we wait until high school to help students develop these skills, we are too late. Students as young as kindergarten should be exposed to developmentally appropriate computer science skills and practices to best prepare them for their pathway.

I often hear that computer science needs to be taught so that students will be better at using a computer. Although this is not false, it is also not telling the whole story. Students need computer science as part of their curriculum to be able to move beyond simple consumption and into more complex creation of technology. By providing our students with elementary (exposing) and middle school (exploring) computer science, we are opening up so many doors and opportunities for them to develop creativity and then apply it to solutions that matter. Let's not manufacture "real world" problems for them to solve, let's provide them with the tools necessary to actually solve real world problems.

Since 2015, I have offered training sessions attended by 1000 elementary school teachers and 50 middle school teachers statewide. Through survey feedback, a common theme that has come up has been the mindset change of teachers. Taking the first step and learning how to bring computer science to our students has reignited a love for learning and a new way of

thinking in them. It is amazing to see the apprehension of teaching computer science give way to excitement.

As a complex area teacher, I am fortunate to work for a Complex Area Superintendent that understands the value of computer science and the need to prepare our teachers. In the past year, over 45% of our elementary teachers have been trained to bring computer science to our students, understanding that computer science will be on the report cards for SY2021-2022. We have also doubled the capacity to provide computer science courses for our middle school students. Efforts are being aligned to create a PK-12 computer science pathway within the complex area.

For these many reasons, I am writing to state my support for SB242 and hope that the collective wisdom of our legislation can also see how this is a necessary step towards providing equitable, high quality computer science education for all students in Hawaii. Before you place your vote on SB242, take a look around your space and try to find something that hasn't been impacted by computer science. I hope that you can clearly understand the power of computer science and that providing early opportunities can make all the difference in preparing our students.

Mahalo,

Shane Asselstine

Hawaii Department of Education - Complex Area Computer Science Teacher

Hawaii Department of Education - State Workgroup Participant

Hawaii Society for Technology in Education - President

Computer Science Teachers Association - Past President

Code.org - K-8 CS Facilitator

Public School Parent - Grade 2 and Grade 4 Students

SB-242

Submitted on: 1/31/2021 3:00:04 PM

Testimony for EDU on 2/1/2021 3:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Hope McKeen	Individual	Support	No

Comments:

I will keep it short. Every school is in dire need of funding to support a computer science class at all grade levels for every student in order to produce ethical users of computer networks.

Hope McKeen

LATE

SB-242

Submitted on: 1/31/2021 9:48:26 PM

Testimony for EDU on 2/1/2021 3:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Feena Bonoan	Individual	Support	No

Comments:

Please pass this bill.

LATE

SB-242

Submitted on: 1/31/2021 11:14:35 PM

Testimony for EDU on 2/1/2021 3:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Regina Lee	Individual	Support	No

Comments:

As a high school student, I feel so fortunate to be exposed to a computer science curriculum. I feel if computer science was offered in my elementary and middle school experience, I would have found my passion in computing earlier in my educational development, opening up a greater time to fuel my ideas in computer science. Computer science has allowed me to not only participate in robotics tournaments and cybersecurity competitions building a family through the computer science community, but has been essential in developing my problem-solving and perseverance skills. With technology being an exponentially growing industry in today's day and age, it is of utmost importance to offer resources for the young audience interested in the basis of the very technology they use.

LATE

SB-242

Submitted on: 2/1/2021 10:51:33 AM

Testimony for EDU on 2/1/2021 3:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Mikaela Javillo	Individual	Comments	No

Comments:

Hi Senator,

My name is Mikaela and I am a STEM student at Roosevelt. I am writing in support of SB242 but I have concerns. I want to make sure that the curriculum is legitimate and vetted by industry professionals. My teacher, Mr. Kam, is strongly in favor of us learning real computer science. For example, we have learned HTML, CSS, Python, JavaScript, and now we are learning about Machine Learning Algorithms.