Senate of Maine
Senate District 15

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TESTIMONY OF SENATOR MATTHEW POULIOT

Sponsor of LD 127

"Resolve, To Establish a Pilot Program To Provide Grants for Professional Development in Computer Science Instruction"

Public Hearing: February 17, 2021

Senator Daughtry, Representative Brennan, and Members of the Joint Standing Committee on Education and Cultural Affairs. I am Senator Matt Pouliot and I represent Senate District 15, which consist of the towns of Augusta, China, Oakland, Sidney and Vassalboro. I am here to present LD 127 " Resolve, To Establish a Pilot Program To Provide Grants for Professional Development in Computer Science Instruction"

This resolve establishes a 2-year pilot program to provide grants for professional development in computer science instruction. Also after discussing this bill with stakeholders, it became clear that we could benefit from making sure programs that students take in the high school grades could lead to college credit, providing a double benefit of education and student loan debt relief.

Currently, Maine has 833 openings for computing jobs, three times the average demand compared to other opportunities, but the data shows that only 56% of Maine public high schools teach at least one computer science class. This is concerning because it means that 44% of schools are not offering computer science classes to introduce students to a field that is in high demand.

We do have some amazing educators for computer science in our schools but we often hear that schools need more teachers teaching it. As important, the teachers need more training and professional development in this area. The grant program that would be set-up by this legislation would allow districts to apply for funds to help more teachers within districts learn how to teach computer science as you can see by the data is desperately needed.

Also you may be aware the Maine Department of Education has developed a state plan for computer science with specific goals, activities and a timeline. We must support the implementation of this plan in order for Maine Students to have the skills they need for jobs of the future. This legislation addresses the need for additional teacher professional development in computer science which is outlined in several portions of the state plan for computer science. I have included this plan with my testimony for your review.

In closing I think it is important that we invest in computer science education so that students are introduced to the STEM field, growing a workforce of graduates with computer science skills to take jobs right here in Maine. In setting your priorities for spending I ask that you take a serious look at this legislation.

Thank you for your time and I would be happy to answer any questions you may have.

CS - State Education Plan

Statewide Awareness

Establish statewide public awareness for what computer science is and why it is important for students to develop related knowledge and skills. Work with cross-sector partners to create a shared vision, definitions, goals, and desired outcomes.

Number	Activities	Involved Parties	Timeline
1.1	Develop and share a vision for Computer Science instruction in Maine PreK-12 schools	DOE, teacher leader cohort, partners	2020-2021
1.2	Identify and share a list of essential learning outcomes and transferable skills that should be developed by students because of Computer Science instruction	DOE (conversations between educators and industry partners)	April-July 2021
1.3	Establish "Look Fors" to help educators/students identify evidence of learning as a result of computer science instruction and "Look Fors" to help administrators support educators who are teaching computer science	DOE, teacher leader cohort	Summer 2021
1.4	Design and implement a research study to track progress toward achieving the goals	DOE, research partner	Fall 2021
1.5	Establish an advisory board composed of educators and administrators from Maine schools and higher education as well as other stakeholders	DOE, advisory board, districts	Feb-March 2021
1.6	Orchestrate awareness campaigns (social media, community events, etc.)	DOE, districts, teacher leader cohort, partners	2020-2021 (ongoing)

Coordinate Efforts

Coordinate computer science related efforts in order to connect people and organizations to each other and to students, educators, and schools, and to align resources toward a common goal.

Number	Activities	Involved Parties	Timeline
2.1	Establish a clearinghouse of freely available resources for computer science instruction	DOE, teacher leader cohort, partners	Fall 2021
2.2	Facilitate connections between districts and educators with invested groups (higher education, nonprofits and businesses)	DOE, teacher leader cohort, advisory board, schools and districts, higher education, partners	Ongoing
2.3	Establish a list of organizations that can provide additional (non-financial) support	DOE, teacher leader cohort, advisory board, partners	Summer 2021
2.4	Establish a grant program that provides funds/materials to get high need schools to the minimum required to offer computer science	DOE	2020-2021
2.5	Explore, and if necessary, establish long term plan for teacher preparation and credentialing (micro-credentials, courses, certificates, endorsements, or certifications)	DOE and higher education partners	Fall 2021
2.6	Establish model policies for computer science as a local graduation requirement, teacher qualifications, etc.	DOE and association partners	Summer 2021
2.7	Explore creating a pathway similar to a CTE pathway for students interested in computer science	DOE, teacher leader cohort	2021-2022

Resources Needed:

- Competitive grant funding

Computer Science and Graduation

Count high school level computer science courses toward a local graduation requirement that is above and beyond the state mandated graduation requirements; districts will determine both local graduation requirement substitution as well as the criteria for these computer science courses.

Number	Activities	Involved Parties	Timeline
3.1	Ensure all students are notified of computer science instruction opportunities	Districts and schools	Ongoing

Number	Activities	Involved Parties	Timeline
3.2	Notify school administration, computer science teachers and students of course opportunities for students	DOE, districts, higher education	Ongoing
3.3	Determine and share with students the ways in which a computer science course can count toward a local graduation requirement	DOE, districts, advisory board, higher education	Ongoing
3.4	Develop and share resources that educators can use to guide the development of a high school course	DOE, advisory board	Summer 2021
3.5	Lead online methods course with yearlong PLC for teachers	DOE, districts, higher education	2021-2022
3.6	Provide an online computer science class that's free and available to all public high school students in the state, in addition to the computer science programming provided by local school districts.	DOE, districts, higher education, partners	Fall 2021

Resources Needed:

- Materials costs for online course for students
- Materials costs for online methods course for teachers

Professional Learning

Provide professional learning to PreK-8 teachers in computer science instruction that is integrated into the pre-existing requirements of each grade level and shows a progression of learning with a clear increase in rigor.

Number	Activities	Involved Parties	Timeline
4.1	Establish a cohort of regional teacher leaders	DOE, teacher leader cohort	Spring - Summer 2021
4.2	Share models with respect to district size and location.	DOE, teacher leader cohort	Ongoing
4.3	Model integrating computer science with other content areas	DOE, teacher leader cohort, and districts	Ongoing
4.4	Provide models which incorporate differentiated instruction that address all learners	DOE, teacher leader cohort, and districts	Fall 2021

Resources Needed:

- Professional Learning Costs
- Stipends for Teacher Leaders

Guidance

Ensure educators have clear and consistent district-wide guidance on desired learning outcomes through district selected computer science standards.

Number	Activities	Involved Parties	Timeline
5.1	Offer SAUs a menu of suggested standards to choose from or criteria from which they can develop their own criteria from which they can develop their own	DOE, teacher leader cohort, partners, schools and districts, regional superintendent associations, Maine Principals Association, regional curriculum coordinators associations	Fall 2021
5.2	Create a capacity matrix for meeting HS and PreK-8 goals by self-assessing	DOE, teacher leader cohort, schools and districts, regional superintendent associations, Maine Principals Association, regional curriculum coordinators associations	2020-2021
5.3	Maine DOE content specialists will work with teachers to identify where computer science standards intersect with the content areas of the Maine Learning Results	DOE, districts, intersections team	Ongoing
5.4	Provide professional learning opportunities for administrators and curriculum coordinators	DOE, regional superintendent associations, Maine Principals Association, regional curriculum coordinators associations	Ongoing

Resources Needed:

- Intersections team subs, travel and lodging costs

Implementation

Encourage each district to develop an implementation plan to ensure all students have access to high quality computer science instruction to prepare them for success in college, career, and civic life.

Number	Activities	Involved Parties	Timeline
6.1	Provide guidance and support for districts as they develop implementation plans	DOE, regional superintendent associations, Maine Principals Association, regional curriculum coordinators associations, districts, teacher leaders cohort	Ongoing
6.2	Develop "Like me" models with respect to delivery approach, school size and geography, etc.	DOE, teacher leader cohort, districts, regional superintendent associations, Maine Principals Association, regional curriculum coordinators associations	Ongoing

Number	Activities	Involved Parties	Timeline
6.3	Develop a SAU implementation plan capacity matrix for self-assessment	DOE, teacher leader cohort, districts, regional superintendent associations, Maine Principals Association, regional curriculum coordinators associations	Fall 2021
6.4	Develop suggested pathways for teachers of other content who want to teach computer science	DOE, districts, higher education, interested teachers	Fall 2021

Resources Needed:

- Travel and lodging for transitioning teachers' CS training

Sharing Success

Invite districts to share the progress toward achieving the vision by sharing their successes on their computer science implementation plan and requesting professional learning.

Number	Activities	Involved Parties	Timeline
7.1	Develop HS goal capacity matrix for self-assessment	DOE, teacher leader cohort, districts, advisory board	Fall 2021
7.2	Develop PreK-8 goal capacity matrix for self-assessment	DOE, teacher leader cohort, districts, advisory board	Fall 2021
7.3	Establish an advisory board (who will monitor progress toward state plan, serve as ambassadors, help draft legislative reports, approve grant funding)	DOE, advisory board	Spring - Summer 2021
7.4	Assist with statewide, regional and districtwide capacity studies to guide decision-making and adjustments	DOE, advisory board	Spring 2020 and ongoing until 2028
7.5	Continuously identify needs and target them with appropriate supports		Ongoing

Resources Needed:

- Advisory board travel and lodging costs

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