Computer Science Informational Update

Oregon Department of Education (ODE)
Higher Education Coordinating Commission (HECC)

Why Computer Science Education?

- The study of computer science leads to high wage, high demand careers

- Algorithms, AI, and large data sets are increasingly used to make decisions that impact our daily lives

- Computing technologies influence our world

- Supports a well-rounded education.

Economic Implications & Opportunities

- Currently, there are approximately 6,000 open computing positions in Oregon.

- There were 1,137 computer science graduates in 2020.

- The Oregon Employment Department forecasts that the five largest core high-tech industries will grow by 15% between 2020 and 2030.

Sources: Code.org; OED 2022

Computer Science Learning Landscape

- K-12 Computer Science Courses
  - CTE Programs of Study
  - Advanced Courses (i.e. AP)
- Community College
  - 2-yr degrees
  - Stackable Credentials
- Universities & Colleges
  - 4-yr degrees
  - Advanced degrees
- Workforce Training Programs
- Summer, Out-of-School, and Career Connected Learning

- Career Connected Learning
- Industry Partnerships
- STEM Hub Network
- Community Based Organizations
- Computer Science Partner Organizations

CTE Computer Science HS Participation & Access

- 63 Approved CTE Programs of Study in Oregon High Schools across 53 districts.

- 18 new Start Up CTE Programs of Study in Computer Science in 2022-2023

- In 2020-2021 school year 19,727 high school students participated in a Computer Science CTE Program of Study.

Postsecondary Participation in Computer Science in Oregon

Of the **42,599** community college Career Technical Education (CTE) participants enrolled during the 2021-22 academic year, **9.5%** participated in a Computer Science CTE program.

Participation & Access to K-12 Computer Science

- Less than **9%** of Oregon students participate in a computer science course.

- In 2022, **22%** of high school students participated in a Computer Science course before they graduated.

- Disparities in access and participation exist across gender, geography, race, and for students experiencing disabilities.

Computer Science Directive

In May 2022, former Governor Brown directed ODE and the HECC to develop a statewide implementation plan for computer science education to provide access to comprehensive computer science education opportunities to every public school student in Oregon by the 2027-2028 school year.

Additionally, $6 million in GEER funds were awarded in the form of grants to the regional STEM Hubs to increase access to computer science education opportunities statewide during the 2022-2023 school year.

STEM Hub Computer Science Grants ($6M GEER)

Between December 2022 and March 2023, these grant activities engaged:

- 4,861 students
- 75 Community Based Organizations
- 362 Education Partners
- 20 Business Partners
- 276 Educators completing professional development,
- 404 Educators preparing to offer CS

Statewide Computer Science Implementation Plan

- Goals include:
  - Equitable access to computer science education
  - Based on a framework informed by national frameworks and standards.
  - Aligning computer literacy standards and curricula with community colleges and public universities
  - Identifying immediate, practical changes and systemic changes that with a focus on equity and inclusion.

- Anticipated release date of September 2023.

Statewide Computer Science Implementation Plan: Engagement

- First round engagement:
  - 550 Oregonians
    - 18 engagement sessions
    - Survey
  - Over 1,500 responses, feedback, and comments.

- Consult Group formed to provide feedback and inform the plan

Statewide Computer Science Implementation Plan: Engagement (cont'd)

General Audience Sessions:

- Career Connected Partners - including industry professionals and those working in fields related to computer science.
- Education Partners - including teachers, para-educators, administrators, college instructors, and university professors.
- Students, Families, and Community Members

Sessions with Specific Organizations:

- African American/Black Student Success Advisory Group
- Confederated Tribes of Umatilla
- Expanding Computer Science Pathways - ECEPs Alliance Team
- LGBTQ2SIA+ Student Success Advisory Group
- Oregon Advisory Council on Special Education
- Oregon Association for Comprehensive Education Conference (in Spanish)
- Oregon Computer Science Teachers Association

Themes Emerging From Engagement

Computer Science Education Awareness and Access
- Access to Computer Science Education
- Awareness and Perceptions of Computer Science
- Benefits of Computer Science Education
- Challenges and Barriers to Computer Science Education
- Resources and Funding

Broadening Participation in Computer Science
- Equity as the North Star
- Need for K-12 Computer Science Content Standards
- Promising Practices

Computer Science Pathways
- Importance of Early Computer Science Education
- Implications for Graduation
- College and Career Connections

Educator Professional Learning
- Teacher Training and Professional Development

Thank you

Oregon Department of Education (ODE)
Higher Education Coordinating Commission (HECC)