Believes

**Computer Science Education
Advisory Commission
June 28, 2023**

Agenda

I. Call to order
II. Roll call
III. Approval of the minutes of the meeting held May 3, 2023
IV. Consideration of a discussion regarding computer science as a foreign language
V. Consideration of a report regarding the integration of Artificial Intelligence (AI) into Louisiana's Computer Science Framework
VI. Consideration of the status report regarding stakeholder feedback
VII. Consideration of a proposal regarding initial certification of computer science teachers
VIII. Consideration of a proposal regarding a computer science high school graduation requirement, postsecondary entrance, and eligibility for the Taylor Opportunity Program for Students (TOPS)
IX. Consideration of a proposal of funding strategies for computer science teacher training and expansion of computer science courses offered in public schools
X. Consideration of a proposal for technical assistance grants to expand computer science in Louisiana public schools

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Computer Science (CS) Education Advisory Commission

Louisiana Act 541 (2022), the Computer Science Education Act, establishes the Computer Science Education Advisory Commission to **provide recommendations** to the State Board of Elementary and Secondary Education through the Department of Education for the **development and implementation of a state action plan** for the delivery of education in computer science in all public schools.

Believes

CS Education Advisory Commission Progress

Recommendation	Status	
State content standards for K-12	✓	**(5/3)**
Coordination of CS education for K-16 and workforce	✓	**(5/3)**
Graduation requirement, postsecondary entrance, and TOPS	Agenda item 6/28	
Standardized CS teacher training	✓	**(5/3)**
Technical assistance grants for creation and expansion of CS courses	Agenda item 6/28	
Funding strategies for CS teacher training and CS expansion	Agenda item 6/28	
Utilize Nat. K-12 CS Framework as a model for creating the LA CS Framework	✓	**(10/27)**

Believes

Vote to approve the minutes from the May 3 meeting

Consideration of a discussion regarding computer science as a foreign language

Considerations

Computer science as a foreign language

- Requires compliance with the Act 502 (2022).

- New course codes allow for systems to be responsive to new and emerging industry demands.

- Alignment to Industry Based Certifications (IBCs) ensures the content in the course is age appropriate.

  - Requires a school system to initiate the process.

Consideration of a report regarding the integration of Artificial Intelligence (AI) into Louisiana's Computer Science Framework

Integration of Artificial Intelligence

Integration of artificial intelligence (AI) in the Louisiana Computer Framework

- Core Concept 2
    - Data and Analysis
- Core Concept 5
    - Impacts of Computing
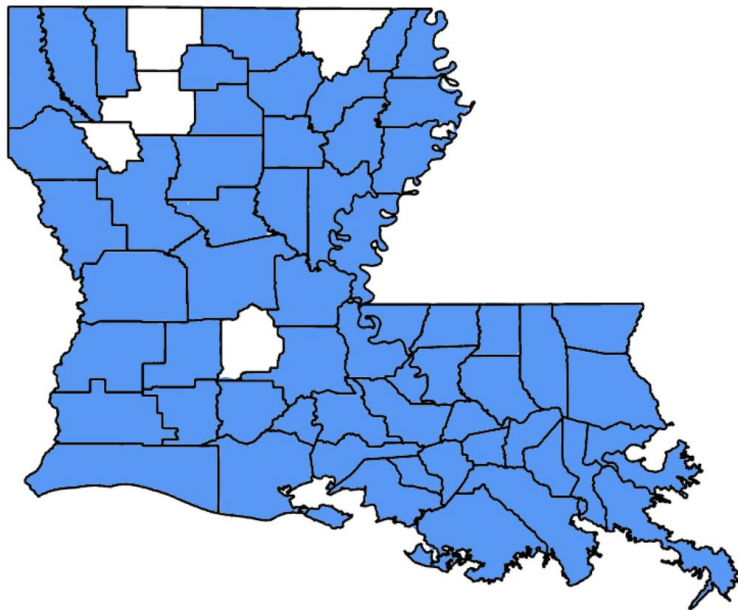
Additional consideration regarding AI

- Regulation of AI
- How the use of AI is taught

Consideration of the status report of stakeholder feedback

CS Feedback Updates

- The Department conducted direct outreach to the 24 parishes we had not heard from prior to the previous commission meeting. This resulted in responses being provided from an additional 19 parishes.

- Additionally, an in-person listening session was held during the 2023 Teacher Leader Summit May 30 - June 1.

- We are now representing feedback from 59 of the 64 parishes in the state, which equates to 92%.
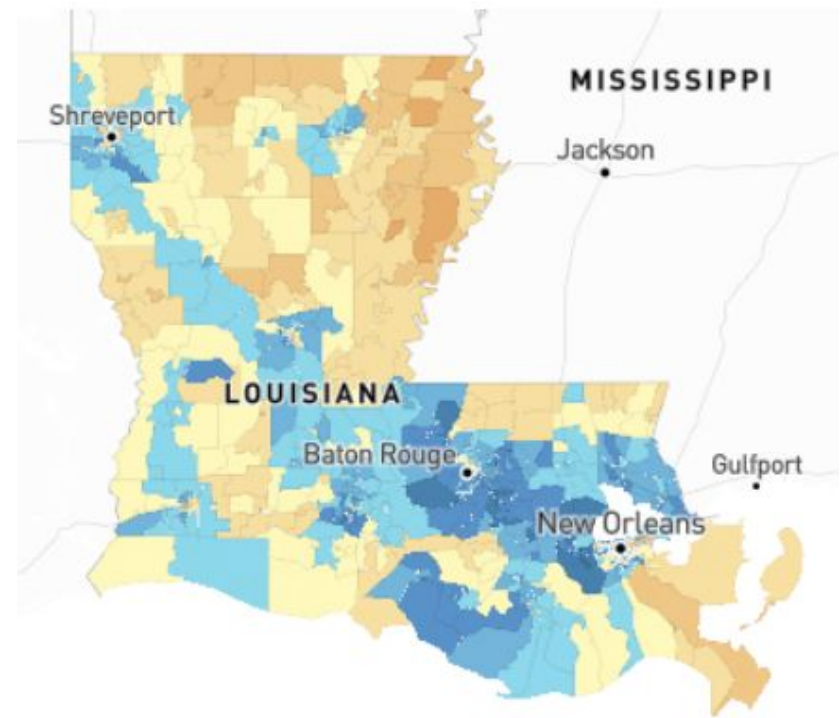
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Digital Divide in Louisiana

Inputs to determine digital balance

- Households without a desktop or a laptop
- Without an internet subscription or broadband of any kind
- % of high schools without a foundational CS course

As the shade of tan gets darker, greater digital imbalance is present.

As the shade of blue gets darker, less digital imbalance is present.

Feedback from Teacher Leader Summit

The teachers in attendance were encouraged by the Computer Science Education Advisory Commission's decision to recommend a K-5 computer science certification option as an add-on endorsement.

Additional feedback from participants

- Funding is needed to train, attract, and keep computer science teachers.
- All attendees wanted
  - more computer science teachers statewide,
  - guidance with selection of materials,
  - computer science embedded in K-5 lessons and not as a separate subject,
  - guidance and support to administrators as they scheduled computer science, and
  - computer science to be connected to jobs/careers in their specific regions.

Spring 2023 Survey Feedback

The survey responses supported the Commission's recommendations for more computer science teacher certification options and computer science training opportunities.

The top three funding priority areas shared were for

- the need for teacher peer learning communities and planning time,
- the need for more guidance on computer science resources and materials for K-12 instruction, and
- the need for funding to maintain 1:1 student devices.

Spring 2023 Survey Feedback Continued

The majority of responses noted that a K-12 computer science education would

- improve the opportunities for success as students pursue careers,
- improve the development of how core subject practices are utilized in real world settings, and
- improve student computer literacy skills.

The top two barriers to computer science were identified as

- the funding and support needed for teacher training and certification add-ons, and
- the need for a designated annual source of funding to support school systems in developing and expanding computer science courses.

Consideration of a recommendation for initial certification of computer science teachers

Current Initial Certification for Computer Science Teachers

In-state teacher preparation providers that offer a teacher preparation program in computer science for initial teacher certification:

- Louisiana Christian University

- Louisiana State University - Alexandria

- Louisiana State University - Baton Rouge

- iTeach

Initial Teacher Certification Recommendation

Initial computer science teacher certification, in addition to the general teacher certification requirements in *Bulletin 746 - Louisiana Standards for State Certification of School Personnel*

- Recommend that a passing score be defined for the Computer Science (5652) Praxis exam,

- Recommend that BESE request the LDOE to explore expanding the number of colleges and universities that offer the computer science teacher preparation certification program in collaboration with Board of Regents.

Consideration of a proposal regarding a computer science high school graduation requirement, postsecondary entrance, and eligibility for the Taylor Opportunity Program for Students (TOPS)

National Computer Science Graduation Requirement Data

- Only **six states** (Arkansas, Nebraska, Nevada, North Dakota, South Carolina, and Tennessee) have a computer science course graduation requirement for students in grades 9-12.

- Mississippi began requiring high school students to take **one course in either computer science or technology** in the 2022-2023 school year.

- Currently, 27 states **require** all of their high schools to provide computer science courses as a course option for students.

Current Computer Science Options

- The following specialized high school course sequences, or pathways, that emphasize computer science are currently available statewide through the Jump Start and STEM Pathways initiative:

  - Computing

  - Cybersecurity

  - Digital Design and Emergent Media

  - Pre-Engineering

  - Information Technology

- Pathways offer students the opportunity to take **58 courses** that involve CS

- Grades 9-12 TOPS university students only have 3 elective courses that are not predesignated

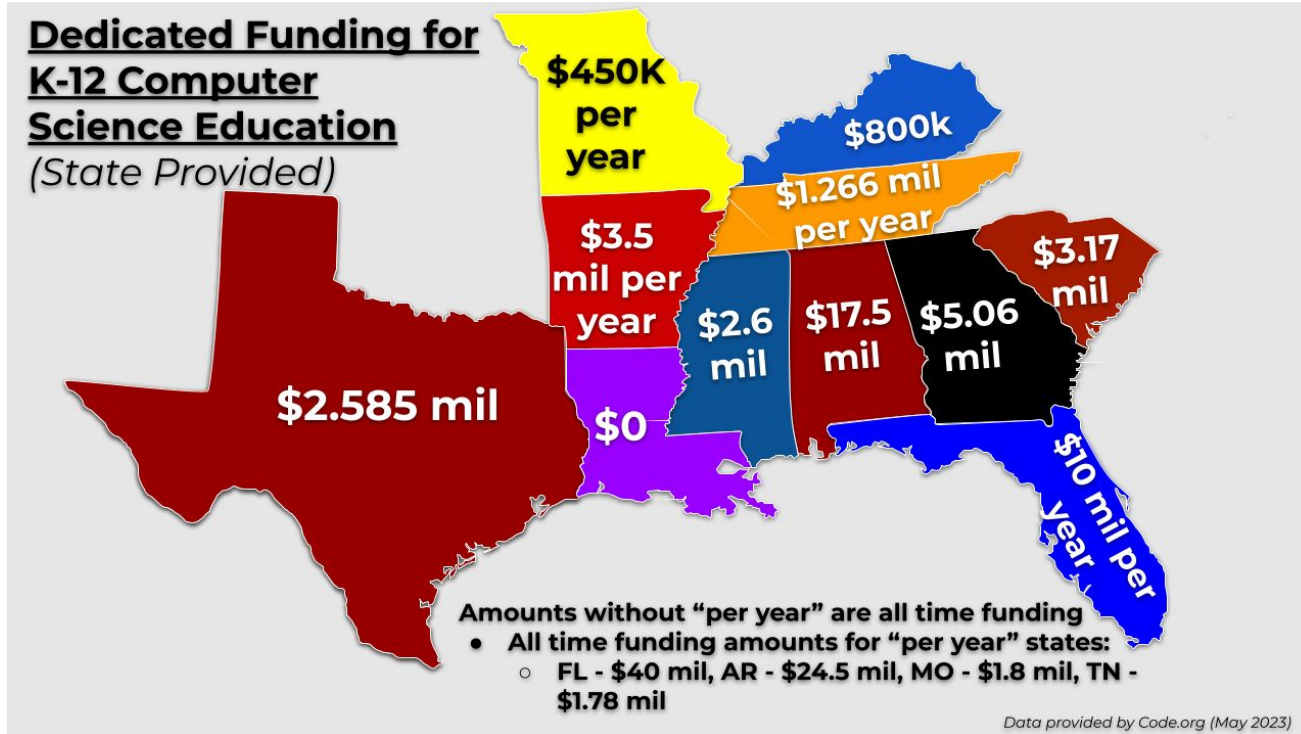Believes

Recommendation for CS Graduation Requirement

Considering the current computer science landscape in Louisiana, the following recommendations are proposed:

- All 9-12 high schools provide computer science as a course offering each school year for students.
- All 9-12 high schools provide students with course offerings that include computer science industry based certification opportunities.
- All 9-12 high schools provide students with the opportunity to take an Advanced Placement and/or an International Baccalaureate computer science course.
- The graduation requirement be addressed three years after the implementation of statewide computer science plan and adoption of new state computer science teacher certification options.

Consideration of a proposal of funding strategies for computer science teacher training and expansion of computer science courses offered in public schools

Computer Science Funding in Other States

Dedicated Funding for K-12 Computer Science Education *(State Provided)*

$450K per year

$800k

$1.266 mil per year

$3.5 mil per year

$3.17 mil

$2.585 mil

$2.6 mil

$17.5 mil

$5.06 mil

$0

$10 mil per year

Amounts without "per year" are all time funding
- All time funding amounts for "per year" states:
  - FL - $40 mil, AR - $24.5 mil, MO - $1.8 mil, TN - $1.78 mil

Data provided by Code.org (May 2023)

Computer Science Education Funding

To support the successful expansion of computer science education in Louisiana, funding is needed for the following:

- Technical assistance grants awarded to school systems;

- Employment of dedicated computer science staff at the LDOE to provide support for

  - facilitating standards writing committees,
  - program implementation,
  - teacher preparation, and
  - teacher professional learning;

- Potential credentialing/certification for teachers;

- Creation of course materials and implementation guidance for school systems.

Recommendation of Funding Strategies

The following funding strategies are recommended to ensure initial and recurring funding for computer science education:

- Create a computer science education fund.

- Establish an annual appropriation to the fund for dedicated computer science staff and ongoing grants to school systems for the establishment and expansion of computer science programs.

- Appropriate a one-time sum for initial teacher training and expansion of computer science courses.

- LDOE computer science staff, once funded, will pursue technical assistance grants and other federal funding for expanding computer science education in schools.

Consideration of a proposal for technical assistance grants to expand computer science in Louisiana public schools

Technical Assistance Grant Recommendation

Recommendation that the state appropriate a designated recurring sum of funds, managed by the Louisiana Department of Education, with the expressed purposes of

- increasing the enrollment of students traditionally underrepresented in computer science,

- prioritization of awards to support school systems with few or no computer science programs, and

- up to 20% of the technical assistance funds may be utilized for hardware.

Revisiting Our Meeting Timeline

August 3, 2022	October 27, 2022	February 1, 2023	May 3, 2023	June 28, 2023	July 25, 2023	August 2, 2023
Alignment	Framework	Teacher PL	K-16 and Career Alignment	Grad. Requirement and Funding	Report Draft	Finalize Report

research

analyze findings

draft report

draft recommendations

finalize report

BESE receives October 11

ongoing stakeholder engagement

Believes

Meeting Schedule

Date and Time	Meeting and Location
August 3, 2022 1:30 p.m.	Meeting 1 Claiborne Building, Baton Rouge
October 27, 2022 1:30 p.m.	Meeting 2 Claiborne Building, Baton Rouge
February 1 1:30 p.m.	Meeting 3 Claiborne Building, Baton Rouge
May 3 1:30 p.m.	Meeting 4 Claiborne Building, Baton Rouge
June 28 1:00 p.m.	Meeting 5 Claiborne Building, Baton Rouge
July 25 1:00 p.m.	Meeting 6 Claiborne Building, Baton Rouge
August 2 1:30 p.m.	Meeting 7 (Finalize report draft for BESE) Claiborne Building, Baton Rouge
October 11 TBA	October BESE Meeting Claiborne Building, Baton Rouge

Adjournment

Please email ashley.townsend@la.gov with questions.