| **Virginia Board of Education Agenda Item** | **Seal of the Commonwealth of Virginia** |
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# Agenda Item: D

## Date: October 15, 2020

### Title: Final Review of the Proposed 2020 *Computer Technology Standards of Learning*

#### Presenter: Mr. Mark R. Saunders, Instructional Technology Coordinator

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## Purpose of Presentation:

Action required by Board of Education regulation.

## Executive Summary:

Using an established review process and criteria, Virginia Department of Education staff and several committees have conducted a review of the current *Computer Technology Standards of Learning* and present a draft of revised standards for final review.

The *Computer Technology Standards of Learning* provide a framework for technology-related knowledge and skills, focused on learning, that are needed by students to succeed in post-secondary education and the workforce. The Standards also provide guidance on the knowledge and skills that teachers in Virginia are expected to integrate into instruction in order for students to understand the role of technology in learning.

In many ways, the *Computer Technology Standards of Learning* complement some concepts and skills covered with the *Computer Science Standards of Learning*. However, there are distinct differences between computer technology and computer science. Since the adoption of the *Computer Science Standards of Learning* in 2017, there has been considerable misunderstanding of the distinctions between computer technology, computer science, and the standards for the two areas. Therefore, to avoid any misunderstanding and to emphasize the essential role of technologies in the deeper learning experiences of students as digital citizens in an ever-increasing digital world through integrated instruction in all content areas, it is proposed that the *Computer Technology Standards of Learning* be renamed the *Digital Learning Integration Standards of Learning*. The proposed 2020 *Computer Technology Standards of Learning* will also replace the current *Computer Technology Standards of Learning* byfocusing lesson actual technologies or devices (spreadsheets, word processors, keyboard, etc.) and the use (interact, edit, open, etc.) of them and more on the integration of the technologies in students’ learning experiences.The proposed Standards delineate seven roles students function in during their learning: 1) Empowered Learner, 2) Digital Citizen, 3) Knowledge Constructor, 4) Innovative Designer, 5) Computational Thinker, 6) Creative Communicator, and 7) Global Collaborator.

This item aligns with Priority 1 from the Board of Education’s Comprehensive Plan: 2018-2023, to provide high-quality, effective learning environments for all students.

## Action Requested:

Final review: Action requested at this meeting.

## Superintendent’s Recommendation:

The Superintendent of Public Instruction recommends that the Board of Education approve the proposed 2020 *Computer Technology Standards of Learning,* renamed *the Digital Learning Integration Standards of Learning,* and authorize the Department of Education to make clarifying and/or technical edits.

## Previous Review or Action:

Previous review and action. Specify date and action taken below:

Date: September 19, 2019

Action: Timeline for the development of the proposed revisions

Date: May 7, 2020

Action: First review

Date: September 14, 2020

Action: Virtual Public Hearing

Background Information and Statutory Authority:

The Board of Education has made a commitment to maintain rigorous and relevant expectations for student learning that meet or exceed national and international benchmarks for college and career readiness. The *Code of Virginia* requires a review of Virginia’s *Standards of Learning* every seven years.

*Code of* *Virginia*, Section 22.1-253.13:1-B… “The Board of Education shall establish a regular schedule, in a manner it deems appropriate, for the review, and revision as may be necessary of the Standards of Learning in all subject areas. Such review of each subject area shall occur at least once every seven years. Nothing in this section shall be construed to prohibit the Board from conducting such review and revision on a more frequent basis…”

In accordance with the timeline reported to the Board in September of 2019, the Virginia Department of Education (VDOE) produced a draft of the proposed 2020 *Computer Technology Standards of Learning* documents found in Attachment A. During the review and revision process several actions were taken.

Public comment was received from stakeholders on the development of the proposed 2020 *Computer Technology Standards of Learning*. During the period of October 11, 2019-February 11, 2020, a total of 13 comments were received.

A steering committee was convened to review public comments and make recommendations for revisions to the Standards. The steering committee of 13 was comprised of eight instructional technology resource teachers, two classroom teachers, one DOE Office of Special Education staff member, the DOE’s Computer Science Specialist, and a representative from the International Society for Technology in Education, one of the leading nonprofit instructional technology organizations in the world. A combination of in-person and online meetings were held with the steering committee on October 21 and 28, and November 6 of 2019 and on January 8, 15, 16, and 29 of 2020. The steering committee also met online as individual grade band teams at various times between November and January to complete tasks and revisions.

A teacher review committee was convened to review public comments and make recommendations for the development of the Standards. The teacher review committee was comprised of the 13 steering committee members and nine additional individuals including seven classroom teachers, an assistive technology specialist from a state institution of higher education with experience as a former special education teacher, and an instructional technology resource teacher. Teacher review committee members represented six of the eight Superintendents’ Regions: 2, 3, 4, 5, 6 and 8. The teacher review committee met in collaboration with the steering committee on January 15 and 16, 2020.

One external review committee meeting was also convened on January 24, 2020. Members of the following organizations were invited to participate on the committee:, Virginia Association of Elementary School Principals, Virginia Association of School Librarians, Virginia Association of School Superintendents, Virginia Association of Secondary School Principals, Virginia Community College System, Virginia School Boards Association, Virginia Society for Technology in Education, the College of William and Mary, James Madison University, Longwood University, Blue Ridge Governor’s School, Maggie Walker Governor’s School, Amazon, Apple, CodeVA, Common Sense Media, Dominion Power, Google, Microsoft, RichTech, and Virginia CyberRange from Virginia Tech.

During the external review committee meeting, input and feedback were received from members of the following organizations: The College of William and Mary, Longwood University, Maggie Walker Governor’s School, and CodeVA.

VDOE staff specializing in mathematics, science, business and information technology, fine arts, history and social science, and virtual learning also participated in an internal review of the proposed Standards.

Additional support during the review process was received from the Department of Learning and Innovation staff such as insights from work with existing content area standards, the relationship of proposed standards to existing content areas standards, and working with content review committees.

Using input received electronically and in person during meetings, along with support from VDOE staff, the steering committee developed a draft of the proposed Standards that was presented to the Board of Education on May 7, 2020.

A total of 5 public comments were received electronically for the Proposed 2020 *Computer Technology Standards of Learning* from May 14 to June 30.

A virtual public hearing was held on September 14, 2020. One individual provided verbal comments during the hearing that were submitted via email after the hearing on the proposed 2020 *Computer Technology Standards of Learning*.

Comments and Responses/Actions:

1. (a) “Our feedback specifically focuses on the Empowered Learner content strand. In this strand (Empowered Learner A (h) for example) we see the standard written as the "Students will articulate and set personal learning goals, develop strategies using appropriate technologies to achieve them... ." We would suggest including the term "advocate" in this standard as well to add student voice, as in: "Students will articulate and set personal learning goals, develop strategies, and advocate for using appropriate technologies to achieve them... ."

(b) “A second item that we would like to submit feedback on also falls under the Empowered Learner content strand. Empowered Learner C (i)(m) and (h) all suggest the students seek feedback from people included peers and teachers regarding the functionalities embedded in technologies. We would suggest inserting language to explicitly include "staff familiar with assistive technology" into this list of collaboration (another of Virginia's 5 C's) options. With assistive technology being included in the standard, we feel it makes sense to explicitly include this resource as AT knowledge can sometimes be grouped within certain school division staff.”

1. “We need to draw a clear distinction between computer science and technology literacy. We are seeing a huge gap in understanding of the breadth of computer science. STEM activities and coding activities are wonderful gateways to computer science, but programming while a critical skill is a truly low-level skill in terms of computer science. The cross over between the CS Standards and the Digital Literacy Standards, I believe is looking at two sides of the same coin. Thinking of it as looking at as a creator versus user of technology and its implications.”
2. “I really like everything about them. The continuity from K-12 was great and very helpful. I loved the organization and 5 C tie in. I also loved the focus of these new standards. I am really excited about supporting my teachers in adopting these.”
3. “Naturally, I was excited to review and comment on this document. If you have any questions, please feel free to email me or call me at… I will be happy to assist with your initiatives.”
4. “With the implementation of the 2020 Digital Learning Standards, Virginia takes an important step towards a future of well rounded, digitally literate citizens who are capable of living, working, and creating safely and ethically in the digital world. While Virginia has made tremendous progress in the implementation of the Computer Science Standards of Learning, it is important to recognize that while they complement and relate in some ways to the Digital Learning Standards, CS is a more complex and separate discipline. The Digital Learning Standards provide a foundation for all students to develop skills for research, independent learning, and thinking skills, as well as skills for creativity, collaboration, and innovation that could lead students to a deeper understanding of all subjects including computer science.”
5. “I would like to suggest that the Empowered Learner section (specifically EL-A-h) include more on what the student can do to advocate for what they need in their use of technology. I think what is being left out of the standard is how students will be able to communicate with others about their use of technology. So, I think the term articulate is just not a strong enough term. I think it needs to include the word “advocate” for the technology that they need.”

Comments #1a and #6 both suggest the use of the word “advocate” in the Empowered Learner strand or student role. The steering committee concurs with the suggestion, so in response to the suggestion, item EL.A.h of the Standards has been updated. See the highlighted text in the revised Standards (see attachment A). Comment #1b suggests the inclusion of “staff familiar with assistive technology" into this list of people that students seek feedback from. The steering committee concurs with the suggestion, so in response to the suggestion, items EL.C.i, m, and h have been updated. See the highlighted text in the revised Standards (see attachment A). Comments #2 and #5 reiterate the need for Computer Technology Standards that are separate and distinct from Computer Science Standards. Comments #3 and #4 are in support of the version of the Standards viewed during the public comment period.

During the May meeting, there were discussions about the differences between *Computer Technology Standards* and *Computer Science Standards*. You will notice in the agenda item that comments #2 and #5 addressed those differences and the need for separate standards. In addition to comments, emails were received from four individuals, including the Chief Executive Officer of the International Society for Technology in Education, better known as ISTE. ISTE referenced work done by the state of Connecticut, which includes a graphic that explains the distinction between *Computer Technology Standards* and *Computer Science Standards*. The text of the emails and the graphic by the state of Connecticut are included as attachment B to this agenda item.

Timetable for Further Review/Action:
Upon approval of the proposed 2020 *Computer Technology Standards of Learning*, renamed the *Digital Learning Integration Standards of Learning*, the Department of Education will begin work on guidance documents and resources that support the implementation of the Standards in teaching and learning.

## Impact on Fiscal and Human Resources:

The collection and analysis of public comment and additional revisions to the Standards can be absorbed by the agency’s existing resources at this time. If the agency is required to absorb additional responsibilities related to this activity, other services may be impacted.