Contents

Minutes from the 2020 Content Standards for Computer Science, Library Media and Technology Negotiated Rulemaking Committee meeting January 10, 2020

Call to Order

The meeting was called to order at 9:35 am by Office of Public Instruction (OPI) Content Standards and Instruction Division Administrator Colet Bartow. Housekeeping items, such as internet connectivity and speakerphones, were discussed. Ms. Bartow reminded everyone that the meeting was a public meeting that was being recorded.

Review Negotiated Rulemaking Process

Ms. Bartow reviewed where the committee was in the negotiated rulemaking process. She reviewed the proposed timeline for the committee and states the dates in the timeline reflect the statutory deadlines. Ms. Bartow reviewed the Montana Administrative Procedures Act (MAPA) timeline.

Ms. Bartow reviewed the changes to the Technology content standards. She explained the new format for the standards, and the new program delivery standards. She said the big idea for these standards is the emphasis on technology integration.

Ms. Bartow highlighted some comments from the standards writing teams.

Establish Committee's Consensus Definition

Facilitator Kirsten Madsen lead the discussion on what consensus means to the committee. The committee agreed that a thumb up meant they understood and were in agreement with the proposal; a thumb sideways meant they did not understand the proposal; and a thumb down meant they understood the proposal and did not agree with it.

Discussion of the proposed Computer Science Content Standards

The committee continued its discussion about the proposed standards, picking where they left off after the December committee meeting. Ms. Madsen led the discussion on the rule recommendations. The rule recommendations were reviewed section by

section. The committee started its review where they left on in the Proposed Content Standards for Second Grade.

Proposed Content Standards for Second Grade

The committee reviewed the proposed content standards for Second Grade. The committee discussed the integration of Indian Education for All and where to appropriately include it in Content Standard 4.a. Committee member Mistyne Hall reviewed her discussions with members of her community about this standard for the committee. OPI Mathematics Instructional Coordinator Marisa Graybill reviewed her discussion about this standard with OPI's Indian Education for All division.

The committee revised proposed Content Standard 4.a from:

"identify how computing technology has changed how the people, including American Indians, live and work"

to

"identify how computing technology has changed how people live and work"

After reviewing the revised content standards, the committee reached a consensus and approved proposed Content Standard 4 as revised.

Proposed Content Standards for Fifth Grade

The committee reviewed the proposed content standards for Fifth Grade. The committee discussed the integration of Indian Education for All and where to appropriately include it in Content Standard 4.a.

The committee revised Content Standard 4.a from:

"explain how computing technologies have changed Montana and the world, and express how those technologies influence, and are influenced by, cultural practices, including American Indians"

to

"explain how computing technologies have changed Montana and the world, and express how those technologies influence, and are influenced by, cultural practices"

After reviewing the revised content standards, the committee reached a consensus and approved proposed Content Standard 4 as revised.

Proposed Content Standards for Sixth through Eighth Grade

The committee reviewed the proposed content standards for Fifth Grade. The committee discussed the integration of Indian Education for All and where to appropriately include it in Content Standard 4.a.

The committee revised Content Standard 4.a from:

"compare tradeoffs associated with computing technologies that affect people's everyday activities and career options in Montana and the world, including American Indians"

to

"compare tradeoffs associated with computing technologies that affect people's everyday activities and career options in Montana and the world, urban, rural, and reservation communities"

After reviewing the revised content standards, the committee reached a consensus and approved proposed Content Standard 4 as revised.

Proposed Content Standards for Ninth through Twelfth Grade

The committee reviewed the proposed Content Standard 4 for Ninth through Twelfth Grade. The committee discussed the integration of Indian Education for All and where to appropriately include it in the standard.

The committee revised Content Standard 4.a from:

"evaluate the ways computing technologies, globally and locally, impact personal, ethical, social, economic, and cultural practices, including American Indians"

to

"a. evaluate the ways computing technologies, globally and locally, impact personal, ethical, social, economic, and cultural practices
b. evaluate the ways computing technologies impact American Indian communities in Montana"

The committee revised Content Standard 4.e from:

"evaluate the impact of equity, access, and influence on the distribution of computing resources in a global society, including with respect to American Indians"

to

"evaluate the impact of equity, access, and influence on the distribution of computing resources in a global society, including the impact on American Indians living in urban, rural, and reservation communities"

The committee revised Content Standard 4.g from:

"use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields"

to

"use tools and methods to connect and work with others on a project including people in different cultures and career fields"

After reviewing the revisions, the committee reached a consensus and approved the proposed Content Standard 4 as revised.

Discussion of the proposed Technology Integration Content Standards

Ms. Madsen led the discussion on the rule recommendations. Ms. Bartow explained the title change of the standards, and how the proposed standards were developed. The rule recommendations were reviewed section by section. The committee started its review with Content Standard 1.

Proposed Content Standard 1

The committee read and discussed the proposed Content Standard. There was a discussion about how the standard is worded and the need for flexibility of implementation.

The committee revised Content Standard 1 from:

"The technology integration standards may include skills for"

to

"The content areas covered by the technology integration standards include skills for"

After reviewing the revised content standards, the committee reached a consensus and approved the content standard as revised.

Proposed Content Standards for Kindergarten

The committee reviewed the proposed content standards for Kindergarten. The committee discussed the wording of the standards. Committee member Steve Qunell voiced his concerns about how the standards lacked efficiency. The committee reached a consensus on the content standards for Kindergarten, and approved the content standards as written.

After reviewing and discussing the grade level progression of difficulty of the proposed content standards for First Grade, the committee returned to the proposed content standards for Kindergarten. The committee discussed revising the standards to include grade level progression of difficulty, and including the measurability of standards for the teachers.

The committee revised prosed Content Standard 1.a from:

"explore a variety of technologies that will help them in their learning"

to

"identify a variety of technologies that will help them in their learning"

The committee revised prosed Content Standard 2 from:

"a. explore appropriate use of devices
b. explore sharing of information and how to respect the work of others
c. explore the importance of keeping their information private"

to

"a. practice appropriate use of devices
b. share information and respect the work of others
c. recognize the importance of keeping personal information private"

The committee revised prosed Content Standard 3.a from:

"a. explore a design process with digital and non-digital tools"

to

"a. use a design process with digital and non-digital tools"

The committee revised prosed Content Standard 4.a from:

"explore how technology is used to make a task easier"

to

"identify how technology is used to make a task easier"

After reviewing the revised content standards, the committee reached a consensus and approved the content standards as revised.

Proposed Content Standards for First Grade

The committee reviewed the proposed content standards for First Grade. OPI Professional Learning Coordinator Carli Cockrell explained how the writing team drafted the standards and how they did not want to "lock" educators into something undeliverable. The committee discussed the measurability of the proposed standards as they were drafted. The committee reached a consensus on the content standards for First Grade, and approved the content standards as written.

The committee discussed the grade level progression of difficulty of the proposed standards, and how the standards reflect the progression. They agreed to revisit the proposed content standards for Kindergarten.

After revisiting the proposed content standards for Kindergarten, the committee returned to their review of the proposed content standards for First Grade.

The committee revised prosed Content Standard 1.a from:

"explore a variety of technologies that will help them in their learning"

to

"identify a variety of technologies that will help them in their learning"

The committee revised prosed Content Standard 2 from:

"b. explore appropriate use of devices and how to be safe online
c. explore sharing of information and how to respect the work of others
d. explore the importance of keeping their information private"

to

"b. practice appropriate use of devices
c. share information and respect the work of others
d. recognize the importance of keeping personal information private and how to be safe online"

The committee revised prosed Content Standard 3 from:

"a. explore digital and non-digital tools to design a product
b. explore a design process to develop ideas or creations"

to

"a. use a design process to develop ideas or creations
b. use digital and non-digital tools to design a product"

The committee revised prosed Content Standard 4.a from:

"explore breaking down a problem into parts and identify ways to solve the problem"

to

"break down a problem into parts and identify ways to solve the problem"

After reviewing the revised content standards, the committee reached a consensus and approved the content standards as revised.

Proposed Content Standards for Second Grade

The committee reviewed the proposed content standards for Second Grade. The committee agreed to bring some of the language in Kindergarten and First Grade standards to the Second Grade standards.

The committee revised proposed Content Standard 1.a from:

"explore a variety of technologies that will help them in their learning"

to

"identify a variety of technologies that will help them in their learning"

The committee revised prosed Content Standard 2 from:

"b. explore appropriate use of devices and how to be safe online
c. explore ownership of information and how to respect the work of others
d. explain the importance of keeping their information private"

to

"b. practice appropriate use of devices
c. identify ownership of information and acknowledge the work of others
d. explain the importance of keeping personal information private and how to be safe online"

The committee revised proposed Content Standard 3.a from:

"explore a variety of tools to organize information"

to

"identify a variety of tools to organize information"

The committee revised prosed Content Standard 4 from:

"a. explore digital and non-digital tools to design a product
b. explore a design process to develop ideas or creations"

to

"a. use a design process to develop ideas or creations
b. use digital and non-digital tools to design a product"

The committee revised proposed Content Standard 6.a from:

"explore different tools for creating something new or for communicating with others"

to

"use tools to create something that communicates an idea to others"

After reviewing the revised content standards, the committee reached a consensus and approved the content standards as revised.

Proposed Content Standards for Third Grade

The committee reviewed the proposed content standards for Third Grade. The committee discussed the appropriateness of some of the standards for third graders and grade level progression of difficulty. Ms. Cockrell read the suggested grade band standards from the International Society for Technology in Education (ISTE).

The committee revised Content Standard 1 from:

"a. set personal learning goals and use appropriate technologies that will demonstrate knowledge
b. recognize how knowledge can be transferred between tools"

to

"a. set personal learning goals and use appropriate technologies to set and support a personal learning goal
b. recognize how skills can be transferred between tools"

The committee revised Content Standards 2 from:

"a. identify and practice responsible use of technology
b. identify appropriate use of devices and how to be safe online
c. identify ownership of information and how to respect the work of others
d. recognize the importance of keeping their information private"

to

"a. practice responsible use of technology
b. demonstrate appropriate use of devices
c. demonstrate how to be safe online
c. demonstrate ownership of information and acknowledge the work of others
d. recognize the importance of keeping personal information private"

The committee revised Content Standards 5.b from:

"evaluate data in order to identify patterns and categories"

to

"identify patterns and categories in a data set"

After reviewing the revised content standards, the committee reached a consensus and approved proposed content standards as revised.

As part of reviewing the proposed content standards for Fourth Grade, the committee moved proposed Content Standard 7.c in the Fourth Grade standards to the Third Grade standards:

"7. The global collaborator content standards for third grade are that each student will:
    a. practice working with others using collaborative technologies"

Proposed Content Standards for Fourth Grade

The committee reviewed the proposed content standards for Fourth Grade. The committee discussed the appropriateness of some of the standards for fourth graders and grade level progression of difficulty. There was a discussion regarding the wording of the standards.

The committee revised Content Standard 1.b from:

"explore technologies and transfer their learning to different tools or learning environments"

to

"explore technologies and transfer their learned skills to different tools or learning environments"

The committee revised Content Standard 2.c from:

"define ownership of intellectual property and appropriate sharing of information"

to

"identify ownership of intellectual property and acknowledge the work of others"

The committee revised Content Standard 3.b from:

"evaluate sources for accuracy, perspective, cultural sensitivity, credibility, and relevance"

to

"explore the accuracy, perspective, cultural sensitivity, credibility, and relevance of sources"

The committee revised Content Standard 4.b from:

"practice using a cyclical design process to develop prototypes and reflect on the role that trial error and play"

to

"use a design process to solve a problem"

The committee revised Content Standard 5 from:

"a. explore or solve problems by selecting technology, analyzing data, and creating models
b. break down problems into smaller parts, identify key information, and propose solutions
c. explore basic concepts related to automation, patterns, and algorithmic thinking"

to

"a. solve problems by selecting technology, analyzing data, and creating models
b. break down problems into smaller parts, identify key information, and propose solutions"

The committee decided to move Content Standard 5.c to the Fifth Grade standards.

The committee decided to remove Content Standard 7.a and Content Standard 8 from the Fourth Grade standards, as they are part of the standards for the higher grades. They also moved Content Standard 7.c to the Third Grade standards.

The committee revised Content Standard 7.b from:

"b. identify collaborative technologies to connect with others, including peers, experts and community members, to explore different points of view on various topics"

to

"a. use collaborative technologies to connect with people from different backgrounds or cultures, including peers, experts and community members, to explore different points

of view on various topics"

After reviewing the revised content standards, the committee reached a consensus and approved proposed content standards as revised.

Proposed Content Standards for Fifth Grade

The committee reviewed the proposed content standards for Fifth Grade. The committee discussed the appropriateness of some of the standards for fifth graders and grade level progression of difficulty. There was a discussion regarding the wording of the standards. Committee member Shelly Stanton voiced her concerns about these standards would impact the current workload of fifth grade teachers. The committee agreed to bring some of the language in Fourth Grade standards to the Fifth Grade standards.

The committee revised Content Standard 1.b from:

"transfer their learning to different tools or learning environments"

to

"transfer their learned skills to different tools or learning environments"

The committee revised Content Standard 2.a from:

"demonstrate an understanding of the role an online identity plays in the digital world and permanence of their decisions when interacting online"

to

"demonstrate an understanding of the role an online identity plays in the digital world and the permanence of their decisions when interacting online"

The committee revised Content Standard 3.b from:

"evaluate sources for accuracy, perspective, cultural sensitivity, credibility, and relevance"

to

"explore the accuracy, perspective, cultural sensitivity, credibility, and relevance of sources"

The committee agreed to remove Content Standard 4.a from the standards. The committee revised the remainder of Content Standard 4 from:

"b. use digital and non-digital tools to plan and manage a design process
c. use a cyclical design process to develop prototypes and reflect on the role that trial and error play"

to

"a. use digital and non-digital tools to plan and manage a design process
b. use a design process to develop and test prototypes"

The committee revised Content Standard 7.a from:

"use appropriate digital tools to work with friends and people from different backgrounds or cultures"

to

"use appropriate digital tools to work with people from a variety of different backgrounds or cultures"

The committee agreed to move Content Standard 8 from the Fifth Grade standards to the Sixth through Eighth Grade standards.

After reviewing the revised content standards, the committee reached a consensus and approved proposed content standards as revised.

Proposed Content Standards for Sixth through Eighth Grade

The committee reviewed the proposed content standards for Sixth through Eighth Grade. There was a discussion regarding the wording of the standards, and the rational for using some of the wording.

The committee revised Content Standard 1 from:

"a. define personal learning goals, select and manage appropriate technologies to achieve them, and reflect on their successes and areas of improvement in working toward their goals
b. navigate a variety of technologies and transfer their knowledge and skills to learn how to use new technologies"

to

"a. define personal learning goals, select and manage appropriate technologies to achieve them, and reflect on their successes and areas of improvement in working toward those goals
b. navigate a variety of technologies and transfer personal knowledge and skills to learn how to use new technologies"

The committee revised Content Standard 2 from:

"a. manage their digital identities and reputations, including demonstrating an understanding of how digital actions are permanent and never fully erasable
c. demonstrate and model the use of intellectual property of print and digital media, including copyright, permission and fair use, by creating a variety of media products that include appropriate citation and attribution elements"

to

"a. manage digital identities and demonstrate an understanding of how digital actions are permanent and can impact reputation
c. demonstrate and model the appropriate use of intellectual property of print and digital media, including copyright, permission and fair use, by creating a variety of media products that include appropriate citation and attribution elements"

The committee revised Content Standard 3 from:

"a. use research strategies effectively to locate appropriate digital resources in support of their learning
b. evaluate sources for accuracy, perspective, cultural sensitivity, credibility, and relevance
c. locate and collect resources from a variety of sources and organize into collections for a range of projects and purposes"

to

"a. use research strategies effectively to locate appropriate digital resources in support of learning
b. evaluate the accuracy, perspective, cultural sensitivity, credibility, and relevance of resources
c. define and consider potential biases in resources
d. locate and collect resources from a variety of sources and organize into collections for a range of projects and purposes"

The committee agreed to remove Content Standard 4.a from the standards. The committee revised the remainder of Content Standard 4 from:

"b. select and use digital tools and support design processes, identity constraints and trade-offs, and weigh risks
c. engage in design processes to develop, test and revise prototypes, use the cyclical process of trial and error, and understanding problems or setbacks as potential opportunities for improvement"

to

"a. select and use digital tools and support design processes, identity constraints and trade-offs, and weigh risks

b. engage in a design process to develop, test and revise prototypes or create innovative products
c. use the process of trial and error, and understand problems or setbacks as potential opportunities for improvement"

The committee revised Content Standard 6.c from:

"communicate complex ideas clearly using various digital tools to convey the concepts textually, visually, or graphically"

to

"communicate complex ideas clearly using various digital tools to convey the concepts in a variety of accessible formats"

The committee revised Content Standard 7 from:

"a. identify and use collaborative technologies to connect with others, including peers, experts, and community
b. determine their role on a team to meet goals, based on their knowledge of technology and content, as well as personal preference"

to

"a. identify and use collaborative technologies to connect with others
b. identify and select a role within a team to meet goals, based on knowledge of technology and content, as well as personal preference"

The committee replaced Content Standard 8 with the Fifth Grade Content Standard 8:

"evaluate personal preferences for use of technology tools for different tasks or purposes"

After reviewing the revised content standards, the committee reached a consensus and approved proposed content standards as revised.

Proposed Content Standards for Ninth through Twelfth Grade

The committee discussed reviewing the proposed content standards for Ninth through Twelfth Grade. The committee agreed to review the proposed content standards at their next meeting.

Ms. Bartow explained she briefly met with Pad McCracken, the legislative staffer for the Education Interim Committee, and explained the interim committee would not be reviewing the proposed content standards until its June meeting. Ms. Bartow proposed to the committee to meet on Friday, January 31, 2020 or at the next scheduled meeting of Wednesday, February 12, 2020, to review the proposed Library Media standards and the draft Economic Impact Survey since the committee did not have time to review them

at this meeting. Ms. Bartow suggested having a fourth meeting in March 2020 to review the Economic Impact Survey results. The committee agreed to meet on February 12, 2020 to continue the discussion about the proposed Technology Standards and review the proposed Library Media standards, and meet in March 2020 to review the Economic Impact Survey results.

Public Comment and Adjournment

Ms. Bartow reviewed where the committee was in the negotiated rule making process. The next meeting date was announced as Wednesday, February 12, 2020. Ms. Madsen thanked the committee for its work.

Ms. Madsen asked for public comment about the committee's work and the day's proceedings. Finding none, the meeting was adjourned at 4:24 pm.