Computer Science, Library Media, Technology Negotiated Rulemaking Committee Minutes 12.5.19

Contents

Computer Science, Library Media, Technology Negotiated Rulemaking Committee Minutes 12.5.19

Call to Order

The meeting was called to order at 10:05 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.

Committee Introductions

Committee members, OPI staff, and facilitator Kirsten Madsen, introduced themselves and discussed how their experiences, expertise, and representation contributes to the committee's work. Committee member Richard Gross was unable to attend the meeting. Board of Public Education (BPE) Executive Director Pete Donovan thanked the committee for their work.

Confirm Facilitator

Ms. Madsen reviewed her role as facilitator for the committee and asked for confirmation of her nomination as facilitator. The committee voted unanimously to confirm Kirsten Madsen as facilitator of the negotiated rulemaking process. After she was confirmed as facilitator, Ms. Madsen reviewed the meeting agenda.

Confirm Committee Membership

Ms. Madsen asked the committee to verify their intent to part of the committee. Everyone present and virtually confirmed their intent to part of the committee.

Review Negotiated Rulemaking Roles, Responsibilities, and Process

Ms. Madsen reviewed the roles and responsibilities of the committee in the negotiated rulemaking process, and the process itself. Ms. Madsen read a passage from the 1889 Course of Study for the Common Schools of Montana. The committee confirmed that the groups that would be the most impacted by the rule changes were represented. Ms. Madsen said that OPI is not required to accept the committee's recommendations, and for the committee to aim for the "sweet spot" of including enough details in the standards while allowing flexibility for local school districts to meet their individual needs.

Provide OPI's Background and Context behind Rule Recommendations

Ms. Bartow gave the big picture view as to why the committee was meeting. 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 led the discussion about OPI's background and context behind the rule recommendations, and the work of the standards writing teams. She reviewed the guidelines approved by the Board of Public Education (BPE) and that the board approved the change to make all content standards go from kindergarten to grade 12 in 2016. She explained that the new content standards had to be free of jargon, measurable, and included the integration of Indian Education for All.

Ms. Bartow said the Computer Science content standards are brand new, and explained the need and the big ideas behind the standards. The concern for Computer Science standards was that high school was too late to introduce students to computer science.

Ms. Bartow reviewed the changes to the Library Media content standards. She explained the new format for the standards, and the need for updated program delivery standards. She said the big idea for these standards is the importance of information literacy.

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
Ms. 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
Ms. Madsen led the discussion on the rule recommendations. The rule recommendations were reviewed section by section. The committee started its review with Content Standard 1 and 2.

Proposed Content Standard 1 and 2

The committee read and discussed the proposed Content Standard 1 and 2. There was a discussion about keeping the standards clear of jargon versus the use of computer science industry language. Committee member Renee Rasmussen voiced her concern about kindergarten to grade 2 teachers being able to understand the standards. OPI Mathematics Instructional Coordinator Marisa Graybill said OPI will prepare a glossary and curriculum supports for the standards. The committee made no changes to Content Standard 1.

The committee read and discussed the proposed Content Standard 2. The committee revised Content Standard 2.f from:

"testing and refining computational artifacts"

to

"testing and refining computational artifacts; and"

After reviewing the revised content standards, the committee reached a consensus and approved the content standards 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 explained the writing team's thinking about the wording. Ms. Bartow explained the need for the "sweet spot" in the standards. Ms. Graybill explained the national computer standards was written in grade bands of K-2 and 3-5, and the writing team aligned the standards to the K-2 grade band. The committee reached a consensus on the content standards for Kindergarten, and approved the content standards as written.

Proposed Content Standards for First Grade

The committee reviewed the proposed content standards for First Grade. The committee discussed the grade level progression of difficulty, and how the standards reflect the progression. After reviewing the revised content standards, the committee reached a consensus and approved the content standards as written.

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. Mr. Qunell said the writing team's thinking was what do the teachers want students to know and what second graders can do at this level. There

was a discussion about the rigor of the standards and the concern about "locking in" the standard into something undeliverable.

The committee revised proposed Content Standard 2.a from:

"select and operate appropriate devices to perform a variety of tasks"

to

"select and operate appropriate tools and devices to perform a variety of tasks"

The committee did not reach consensus on how re-word Content Standard 4.a and agreed to review the standard again when it meets in January.

The committee revised proposed Content Standard 5 from:

"a. explain what passwords are and why we use them
b. recognize that computing devices and the internet enable us to connect with other people, places, information, and ideas"

to

"a. explain what passwords are and why they are used
b. recognize that computing devices and the internet enable people to connect with other people, places, information, and ideas"

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

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. Committee member Gary Myers voiced his concerns about introducing third graders to topic of laws and intellectual property they have not been introduced to before third grade. The integration of Indian Education for All and where to include it was discussed by the committee.

The committee revised Content Standard 4 from:

"a. seek diverse perspectives for the purpose of improving computational artifacts
b. apply laws associated with digital information"

to

"a. collect diverse perspectives for the purpose of improving computational artifacts
b. identify rules associated with the appropriate use of digital information when creating computational artifacts"

The committee revised Content Standards 5 from:

"a. identify real-world cybersecurity problems and how personal information can be protected"

to

"a. identify cybersecurity problems and how personal information can be protected"

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

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:

"decompose problems into smaller, manageable subproblems to facilitate the program development process"

to

"break down problems into smaller, manageable subproblems to facilitate the program development process"

The committee revised Content Standard 4 from:

"a. collect diverse perspectives for the purpose of improving computational artifacts
b. apply laws associated with digital information"

to

"a. collect diverse perspectives for the purpose of improving computational artifacts
b. identify rules associated with the appropriate use of digital information when creating computational artifacts"

The committee revised Content Standard 5 from:

"a. identify real-world cybersecurity problems and how personal information can be protected"

to

"a. identify cybersecurity problems"

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 revised Content Standard 1.d from:

"modify, remix, or incorporate portions of an existing program into one's one work, to develop something new or add more advanced features"

to

"modify, remix, or incorporate portions of an existing program to develop something new or add more advanced features"

The committee revised Content Standard 5 from:

"a. explain real-world cybersecurity problems and how personal information can be protected
b. model how information is broken down and transmitted through multiple devices over networks and the internet and reassembled at the destination"

to

"a. explain cybersecurity problems
b. how personal information can be protected
c. model how information is broken down and transmitted through multiple devices over networks and the internet and reassembled at the destination"

The committee did not reach a consensus on Content Standard 5.c at this point in the meeting. While reviewing the proposed content standards for sixth through eighth grade, the committee did reach a consensus that Content Standard 5.c was a better fit for sixth to eighth graders, and moved the standard there.

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 4.c from:

"collaborate with many contributors when creating a computational artifact"

to

"collaborate with other contributors when creating a computational artifact"

The committee revised Content Standard 5 from:

"b. apply multiple methods of encryption to model the secure transmission of information
c. model the role of packets and protocols in transmitting data across networks and the internet"

to

b. apply multiple methods of encryption to demonstrate how to securely transmit information
c model how information is broken down and transmitted through multiple devices over networks and the internet and reassembled at the destination"

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

Committee member Renee Rasmussen voiced her concerns as superintendent of a small school district about the K-8 content standards, and asked at what point can she put a thumb down on all of it. Ms. Rasmussen explained the difficulties in recruiting teachers to teach in her district. BPE Executive Director Pete Donovan explained the BPE's process once they receive the standards from OPI, and the opportunities for public comment in their process. Ms. Graybill explained the standards writing team was focused on what the standards would like in the long term. Committee member Ann Ewbank stated her university would like strong standards to help educate pre-service and in-service teachers.

Proposed Content Standards for Ninth through Twelfth Grade

The committee reviewed the proposed content standards for Ninth through Twelfth Grade. There was a discussion regarding the wording of the standards, the rational for using some of the wording, and how the standards were formatted. The committee reviewed the content standards one by one since the standards for Ninth through Twelfth Grade covered four grade levels.

The committee removed the phrase "such as" from Content Standard 1.l.

After reviewing the revisions, the committee reached a consensus and approved the proposed Content Standard 1 as revised.

The committee reviewed Content Standards 2 and 3. The committee changed the phrases "real-world" to "authentic" and "such as" to "including" in Content Standard 3. Several committee members voiced their concerned over the wording in Content Standards 2 and 3. Ms. Madsen explained that state law prevents committee members from having off the record conversations between them. The committee did not reach consensus on Content Standards 2 and 3, and agreed to visit these standards at the January meeting.

The committee reviewed Content Standard 4. The committee discussed the integration of Indian Education for All and where to appropriately include it.

The committee revised Content Standard 4.2 from:

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

to

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

The committee did not reach consensus on how re-word Content Standard 4.e and 4.g, and agreed to review the standard again when it meets in January.

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

The committee reviewed Content Standard 5. The committee changed the phrase "such as" to "including" in Content Standard 5.a.

The committee revised Content Standard 5.d from:

"evaluate the scalability and reliability of networks by describing the relationship between routers, switches, servers, topology, and addressing"

to

"evaluate the scalability and reliability of networks by describing the relationship between routers, addressing, switches, servers, and topology"

After reviewing the revisions, the committee reached a consensus and approved the proposed Content Standard 5 as revised.

Proposed Computer Science Program Delivery Standards

The committee reviewed and discussed the proposed program delivery standards as revised by the writing team. Ms. Bartow reviewed the background and context of the program delivery standards.

The committee revised Program Delivery Standard 1.a.i from:

"provide a well-articulated integrated curriculum that challenges students to learn increasingly more sophisticated computer science concepts"

to

"provide a well-articulated integrated curriculum that challenges students to learn increasingly more sophisticated computer science concepts across all grade levels and content areas wherever appropriate"

The committee revised Program Delivery Standard 1.b.iii from:

"ensure students understand the role of computing in the world around them, leveraging computer technology to create solutions"

to

"ensure students understand the role and impact of computing in the world around them, leveraging computer technology to create solutions"

After reviewing the revisions, the committee reached a consensus and approved the proposed program delivery standards as revised.

Economic Impact Statement survey

Ms. Bartow led the review of the draft Economic Impact Statement survey. Ms. Madsen explained the statutory requirement for the survey. Ms. Bartow said the estimated deadline for school districts to reply to the survey would be January 24, 2020. The committee made suggestions to the survey to include infrastructure, grant writing and

updates. The committee also recommended that school IT departments be included in the list of survey recipients. Committee member Melody Lee asked if the computer science high schools credits would be a local credit or a statewide credit. Ms. Bartow said the credit issue was a separate issue being looked at currently.

Ms. Bartow proposed to the committee keep the January 10, 2020 meeting on the schedule since the committee did not have time to review the proposed Library Media and Technology standards. Ms. Bartow asked that any revisions to the survey be to her by December 13, 2019.

Public Comment and Adjournment

Ms. Bartow reviewed where the committee was in the negotiated rule making process. The next meeting date was announced as Friday, January 10, 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 3:51 pm. Committee member Mistyne Hall thanked the committee for their consideration of Indian Education for All.