

Notes From The State Superintendent's Standards Review Council

September 28, 2016

GEF 3, Room P41
125 South Webster Street,
Madison, WI 53707

Standards Review Council Members	
<p>Mike Beighley Kim Brown Representative Dave Considine Anne Heck Jenni Hofschulte Stephen Kolison Howard Kruschke</p>	<p>Heather Mielke Carrie Morgan Senator Luther Olsen Lisa Sanderfoot Representative Jeremy Thiesfeldt Connie Valenza</p>

The State Superintendent's Standards Review Council was called to order at 9:03 a.m. by John Johnson.

9:03 AM	<p>Purposes and Introductions Mike Thompson</p> <ul style="list-style-type: none"> ● Reviewed the purpose of the State Superintendent's Standards Review Council ● Reviewed purposes of today's meeting ● Introduction of Council members
9:13 AM	<p>Overview of Academic Standards Brent Kindred, Dave Thomas, Al Gomez, Debbie Stanislowski</p> <ul style="list-style-type: none"> ● Reviewed what academic standard are and are not. Emphasized that standards are not curriculum and do not replace educator innovation. ● Explained the role of academic standards within Wisconsin's vision for all learners ● Explained process of writing standards for Career and Technical Education (2012 - 2013) ● Explained how UW-Stout used standards for Career and Technical Education in educator preparation, including: <ul style="list-style-type: none"> ○ Decisions about necessary courses and content ○ Help candidates understand what their future students should

know and be able to do, including rigor (verbs from standards), important content-area vocabulary

- Explained the importance of standards, including:
 - Help new teachers understand what to teach
 - Validate existing teachers' choices about what to teach
 - "Without standards teacher have nothing to aim for"
 - "Synergies" between school districts
 - Ability to "scale professional development" between districts
 - Challenges in working in states or nations that don't have academic standards
 - Room within standards for differences based on community and industry needs

Questions about academic standards

- Are standards voluntary for institutions? If adoption is voluntary, does this put students in institutions who don't adopt the standards at a disadvantage?
 - Standards adoption is voluntary; most standards are used by most districts (in part because of the cost and expertise needed to write their own standards).
 - Parents and families could select a different school if they are unhappy with the standards a district has selected.
 - When new standards are made available, a district begins by considering where they might already be meeting some of the new standards.
 - Educators request to use national standards that they see as superior to Wisconsin's standards, but educator choices impact students more than the standards.
 - Standards (especially for ELA and mathematics) allow for movement between districts, including open enrollment. Shared standards between districts and states also allow for national community programs, like Junior Achievement.
- The question isn't whether we should have standards in computer science but more what should be in the standards to keep them relevant. We must have a system in place for updating standards (praised the system DPI put in place). "These are *model* academic standards; we don't force them on people."
- If these are model standards, they are something for people to aspire to. How do we ensure that all people have access to and knowledge of these standards?
 - Standards are posted on DPI's website and influence professional learning from DPI and CESAs.
 - Professional organizations support standards dissemination and implementation.
- How do the standards impact youth apprenticeship programs?
 - Work-based learning models lead to students that are employable and provide opportunities to work with community

	<p>members and stakeholders. Academic standards let community and business know what students are learning in the classroom.</p> <ul style="list-style-type: none"> ● Standards are for the masses, rather than to develop intricate knowledge about a content area (such as what is required by specialty certifications or job training). How do we write computer science standards that reflect the different levels of knowledge that people need about computer science? Rather than seeking input from community, business, and industry, the Council should focus on basic things one needs to know about computer science when graduating from high school. ● Are the standards we are putting together intended for all students or for those who take elective courses? <ul style="list-style-type: none"> ○ Standards give information that might help students develop an interest in learning more. ○ These standards ensure that later pathways are available for students. ○ Standards allow schools to create pathways in which knowledge build on each other (such as middle school to high school) ○ We need to delineate what we want all students to know and be able to do and which standards are for students who chose to learn further (especially in the area of computer science). ● Important that computer science standards allow for flexibility, including development of new types of technology. Standards shouldn't limit learning. ● Standards set a minimum. Standards provide basis to work from; industry provides specific training and advanced skills. Computer science standards should develop logical thinking. ● Are the standards meant to be used as a goal (something we're aspiring to) or an expectation? We should clearly and continually communicate this.
<p>10:06 AM</p>	<p>Wisconsin's Process for Reviewing, Revising, and Creating Academic Standards John Johnson</p> <ul style="list-style-type: none"> ● Reviewed steps in Academic Standard Review Process <ul style="list-style-type: none"> ○ Request to review process for notice of intent. Who starts the process? Who receives the notice? How do teachers in the field know the notice of intent exists? <ul style="list-style-type: none"> ■ State Superintendent issues notice of intent and simultaneously creates opportunity for public input about the need for standards. Use professional organizations, contacts (including superintendents and curriculum directors), and social media to publicize notice of intent. ○ Will the legislative standing committees hold public hearings? <ul style="list-style-type: none"> ■ Anticipates opportunity for public hearing with testimony given back to DPI. Acknowledged that DPI is probably better suited (because of contacts) to host hearings. ● Chose computer science as starting point because of expressed need

	<p>from multiple stakeholders. Also, it is an area where we do not currently have standards.</p> <ul style="list-style-type: none"> ● Next meeting of the Council would be to review Draft 2.0 of computer science standards - to review process and incorporation of public comments into Draft 2.0 in order to make recommendation about whether to move the standards to the State Superintendent for adoption <ul style="list-style-type: none"> ○ Council makes recommendation about whether to move standards forward to State Superintendent. Council <i>does not</i> make recommendation about specific content. Council exists to review process and ensure public comments have been addressed. ○ Version 1.0 will be shared with Council members so they can seek feedback from their stakeholders to influence Version 2.0
10:20	Break
10:30	<p>What is computer science as an academic subject? What is the current status nationally and in Wisconsin? Joe Kmoch</p> <ul style="list-style-type: none"> ● How would you define computer science? What are key ideas for the definition? <i>From the Council</i> <ul style="list-style-type: none"> ○ Human interaction with machines ○ Coding / Programming ○ Integration of technology into everyday life ○ How the computer works ○ Digital citizenship ● Reviewed key ideas from new AP computer science course (Principles in Computer Science, Fall 2016). <ul style="list-style-type: none"> ○ Programming is one of the seven areas. Several areas are about higher order thinking (creativity and abstraction). ○ Computational thinking practices can be developed throughout K - 12 education (especially the dispositions). ● Reviewed resources that could assist with standards writing: Exploring Computer Science (curriculum already in use at ninth and tenth grade level), Computer Science Teachers Association, and already developed computer science standards (such as APCS Principles, ECS, and CSTA) ● Computer science is about problem solving and creativity. It is not just vocational; it is foundational. ● Reviewed availability of jobs vs graduations (in 2013) and stats about where AP computer science is available (and who takes it). Emphasis on lack of diversity (racial and gender) in both coursework, graduates, and the work force. ● Questions: <ul style="list-style-type: none"> ○ Media portrays women in technology in a non-flattering way that perpetuates stereotypes. ○ How do we define jobs in computer science? Does it include all STEM jobs?

	<ul style="list-style-type: none"> ○ Critical thinking practices listed are what all areas need - not just computer science. Also, schools need resources necessary for kids to reach their potential.
<p>11:01</p>	<p>Computer Science Occupations in Wisconsin Dan Younan, Department of Workforce Development (DWD)</p> <ul style="list-style-type: none"> ● Skills that are cultivated when studying computer science will always been relevant (like creativity, problem solving, or logical thinking) ● Growth in computer science occupations in increasing quickly and pay significantly better than median wage. These jobs generally require at least a bachelor's degree. ● Questions and comments: <ul style="list-style-type: none"> ○ Movement to place those interested in computer science into a two-year program to transition into four-year program (beginning with dual credit courses in high school). There are also opportunities for businesses to pay to continue education of employees with two-year degrees. ○ DWD is developing applicable adult apprenticeship program ○ Computer science is infused in many job areas - including agriculture. People working in these fields wouldn't necessarily identify as needing to study computer science.
<p>11:15</p>	<p>What is the current status of computer science education in a Wisconsin school district? Jill Underly, Cade Bush, Doug Pibal</p> <ul style="list-style-type: none"> ● Background of Pecatonica's work - began with interest from families and expertise of staff ● Begins in kindergarten, includes required classes in middle school ● Needed vision to develop a program that isn't "typical" of rural school districts ● Need to be able to find qualified educators - which content standards could help with. This could be especially true in rural districts ● Pecatonica's work includes distance learning programs ● Student access to computers impacts pacing of course. Student access to computers could impact their ability to meet standards ● Learning happens through doing and experimentation; standards should reflect this. ● What attracts people to computer science varies. Pecatonica is trying an animation club with the hope of attracting more females to computer science. ● Course map allows interested students to build skills from grades 9 - 12. ● Cade spoke about flexibility he learned in computer science - doesn't expect to know all the computer science languages but knows he needs to transition between what already exists and what might be developed.

	<p>Recognized that there are many uses for computer science beyond coding (and applications of coding you might not expect - like animation).</p> <p>Questions</p> <ul style="list-style-type: none"> ● Which standards for computer science is Pecatonica using? <ul style="list-style-type: none"> ○ Using standards from national computer science organization (CSTA standards). Wisconsin standards would make teacher requirement easier. ○ Wants to have best local program possible based on his vision. Would then look at standards to see what his program might be missing. For example, the standards might provide guidance around things that aren't his passion. Feels that standards might not be helpful to him at this point because of his level of experience and intense personal interest in coding. ○ Standards writing committee should consider existing documents and resources in their work. ○ WI standards should align with national teacher prep standards (ISDE) because IHEs must be aligned to these standards for accreditation. ● Be sure to look at licensure requirements to allow for multiple pathways (besides those in the math world) to become licensed computer science teachers. <ul style="list-style-type: none"> ○ Can add computer science certification through a Praxis test in computer science (emergency rule).
<p>11:46</p>	<p>Discussion of Notice of Intent to Review Computer Science and Public Commitment John Johnson</p> <p>Reviewed information from public survey (more than 150 respondents)</p> <ul style="list-style-type: none"> ● Teachers were wide majority of respondents (particularly high school) ● More than 65% of respondents felt a need for computer science academic standards ● Survey indicated that academic standards won't "cure" things. Local resources and decisions are also needed. ● Respondents supported strands included in national computer science standards <p>Reviewed checklist to determine need for academic standard review/development</p>
<p>11:56</p>	<p>Conclusion and Next Steps John Johnson</p> <p>Is there consensus on the council about drafting computer science standards?</p> <ul style="list-style-type: none"> ● Many head nods and verbal agreement from Council ● Concern that seven years might not be frequent enough to update

computer science. Is it possible that computer science could be updated before seven years?

- Amount of work that happens locally in incorporating new standards into teaching and learning takes time. Changing standards more frequently than seven years doesn't give time to actually implement standards.
- Standards should be broad enough that they wouldn't be outdated in seven years.
- Must have enough time to measure the impact of standards.
- Used example of ITLS (Information Technology Literacy Standards) as things that don't need to be frequently updated.
- With 28 sets of academic standards, we need to review four sets of standards per year. Do we have the capacity to do that, much less review more often than every seven years?

Asked again to consensus on moving forward with standards

- What would happen if the Council said no?
 - State Superintendent could still choose to move forward

What input does the Council have for standards writing? Could also make recommendations for people to be part of writing committee.

- Writing committee should include 2-year or 4-year computer science and mathematics faculty.
- Do not start from "blank sheet of paper". Begin with standards from other state and national standards.
- Include mathematics teacher on the writing committee because HS coursework can count as mathematics credit.
- Include diversity in the writing committee
- Computer science changes rapidly. Any set of standards might need tweaking every seven years - not complete rewrite.
- Include elementary teachers who are not computer science or math teachers because elementary teachers incorporate standards broadly into all work.
- Consider breadth vs depth.
- Be cognizant of equity of resources. Virtual learning shouldn't be default expectation for computer science. Need access to experts with energy and expertise.
 - This is handled in implementation rather than in standards.
- Council needs to recognize role of helping all students be successful.

Next meeting should include a draft (version 2.0) of computer science standards. These will be shared before the meeting (including public input).

Will also issue notice of intent to review one or two other subject areas before next meeting. Second half of meeting will focus on these standards.

Questions:

- What is the timeline?

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| | <ul style="list-style-type: none">○ Maybe by January or February.○ Council agreed that January was too ambitious |
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