

**ALASKA STATE LEGISLATURE  
JOINT MEETING  
HOUSE EDUCATION STANDING COMMITTEE  
SENATE EDUCATION STANDING COMMITTEE**

February 10, 2017  
8:00 a.m.

**MEMBERS PRESENT**

HOUSE EDUCATION STANDING COMMITTEE

Representative Harriet Drummond, Chair  
Representative Justin Parish, Vice Chair  
Representative Ivy Spohnholz  
Representative Jennifer Johnston  
Representative Chuck Kopp  
Representative David Talerico

SENATE EDUCATION STANDING COMMITTEE

Senator Shelley Hughes, Chair  
Senator Gary Stevens  
Senator Cathy Giessel  
Senator John Coghill  
Senator Tom Begich

**MEMBERS ABSENT**

HOUSE EDUCATION STANDING COMMITTEE

Representative Zach Fansler  
Representative Lora Reinbold (Alternate)  
Representative Geran Tarr (Alternate)

SENATE EDUCATION STANDING COMMITTEE

All members present

**OTHER LEGISLATIVE MEMBERS PRESENT**

Representative Dan Ortiz

**COMMITTEE CALENDAR**

PRESENTATION: VIRTUAL LEARNING~ BY TAMMY VAN WYHE~ INTERIM  
SUPERINTENDENT~ COPPER RIVER SCHOOL DISTRICT

- HEARD

**PREVIOUS COMMITTEE ACTION**

No previous action to record

**WITNESS REGISTER**

MICHAEL JOHNSON, Commissioner  
Department of Education and Early Development (EDC)  
Juneau, Alaska

**POSITION STATEMENT:** Introduced the guest speakers and the virtual educational program overviews that they would each present.

TAMERA VAN WYHE, Interim Superintendent  
Copper River School District (CRSD)  
Glennallen, Alaska

**POSITION STATEMENT:** Co-presented the overview on virtual learning.

TIM SHUMWAY, Teacher  
Copper River School District (CRSD)  
Glennallen, Alaska

**POSITION STATEMENT:** Co-presented the overview on virtual learning.

JAMES STONE, Superintendent  
Matanuska-Susitna Borough School District (MBSD)  
Anchorage, Alaska

**POSITION STATEMENT:** Co-presented the overview on virtual learning.

JEFF BLACKBURN, Education Technologist  
Office of Instruction  
Matanuska-Susitna Borough School District (MBSD)  
Palmer, Alaska

**POSITION STATEMENT:** Co-presented the overview on virtual learning.

ANDREA WAGNER, Senior  
Wasilla High School  
Wasilla, Alaska

**POSITION STATEMENT:** Testified during the hearing on virtual learning.

## **ACTION NARRATIVE**

[8:00:31 AM](#)

**CHAIR HARRIET DRUMMOND** called the joint meeting of the House and Senate Education Standing Committees to order at 8:00 a.m. Representatives Drummond, Kopp, Parish, Johnston, Spohnholz, and Talerico, and Senators Coghill, Giessel, Stevens, Begich, and Hughes were present at the call to order. Also present was Representative Ortiz.

**PRESENTATION: Virtual Learning, by Tammy Van Wyhe, Interim Superintendent, Copper River School District**

[8:01:30 AM](#)

CHAIR DRUMMOND announced that the only order of business would be a presentation on virtual learning.

[8:02:32 AM](#)

MICHAEL JOHNSON, Commissioner, Department of Education and Early Development (EDC), introduced the guest speakers and the educational programs that they would be presenting.

[8:04:01 AM](#)

TAMERA VAN WYHE, Interim Superintendent, Copper River School District (CRSD), said many technically, innovative programs are occurring in the Copper River School District. Although the district is comparable in size to the State of Ohio, it hosts only three, K-12 public schools: Glennallen (282), Kenny Lake (72), and Slana (12), as well as the Upstream Learning home education program (79); 445 total students. Directing attention to the committee handout, titled, "Living the Possibilities: Excellent Education, Every Day, Expanding Opportunities in Rural Alaska with Digital Tools and Distance-Delivered Instruction," pages 3 and 4, she drew attention to the contrast between the 2012-13 and 2016-17 Master Course Schedule for the high school students district wide. Four years ago, only three video conferenced classes (VTC) were offered. The new high school schedule was created to incorporate telecommunications learning opportunities, and today VTC and distance delivery is totally incorporated into the schedule. Every teacher is involved and teachers are no longer associated with the physical school where they are positioned, only with the class that they teach;

accessible to any student. Because of the distance learning options, one teacher who, although transferred out of the district, still teaches full time via the virtual classroom; co-presenter, Mr. Shumway.

[8:08:15 AM](#)

MS. VAN WYHE referred to the handout, page 5, to list the technological avenues being blended into the traditional, K-12 classrooms that enhance the learning opportunities, which are: distance-delivered instruction; synchronous instruction via VTC; fully on-line classes, also referred to as e-learning; asynchronous courses; and a variable-term high school scheduling model allowing a number of opportunities that aren't necessarily technology based but allow a high level of flexibility. She reported that CRSD received a digital teaching initiative grant, the only district in Alaska to be awarded a Rural Utilities Services (RUS) Grant, [U.S. Department of Agriculture (USDA)]. A definition of personalized, blended learning, as provided by the Christensen Institute [founded on the theories of Harvard professor Clayton Christensen, with offices in the Boston Massachusetts, area and Silicon Valley, California] describes a formal education program in which a student learns: at least in part through online learning, with some element of student control over time, place, path, and/or pace; at least in part in a supervised brick-and-mortar location away from home; and the modalities along each student's learning path, within a course or on a subject, are connected to provide an integrated learning experience. The digital programs and equipment used to create a blended experience include: i-Ready, Edgenuity, IXL, Actively Learn, Nearpod, G Suite for Education, laptop computers, iPads, Polycom VTC equipment, and promethean boards. She provided screen images of each of these programs, and offered a brief explanation of how they are applied [the images were not made part of the committee packet]. The benefits of this approach include: a guaranteed and viable curriculum; extends the reach of the teacher; the content adapts to student needs; access to rich, real-time data; portability of instruction; and transparency and accountability.

[8:16:03 AM](#)

REPRESENTATIVE SPOHNHOLZ asked about the program Actively Learn, and whether it integrates with the other software.

MS. VAN WYHE deferred to Tim Shumway.

MS. VAN WYHE finished saying that the success is in the details. The district employs tech support people who work to keep all of the programs coordinated and the systems running.

[8:21:02 AM](#)

TIM SHUMWAY, Teacher, Copper River School District, took up the presentation, to further discuss how the distance delivery is handled, paraphrasing from a prepared statement, which read as follows [original punctuation provided]:

Allow me to begin by saying that while I recognize the value of individual e-learning courses, what I would like to share with you today is an additional option for addressing the access gap that we see in our rural schools today.

#### Instructional Advantages

Real-time distance delivery offers the opportunity to deliver high-quality, focused direct instruction to students in an interactive learning environment. To echo the language that Mrs. Van Wyhe has used, it allows us to extend the reach of our teachers. I'd like to share with you what that looks like for me.

#### Instructional Advantages (2)

Currently, I teach to all three of our district's schools - in Glennallen, Kenny Lake, and Slana - and I do so from an office in Anchorage. In addition to the use of live video conferencing, I rely heavily on Google classroom, a free content management system, to facilitate the distribution of instructional materials. This allows me to instantly share assignments and resources, and also allows me access to student work, even while it is still in progress.

In addition, every day I deliver and record direct instruction and post it on the google classroom. Students who are absent can view the exact same instruction as those students who were in class, and any student who needs to go back and review material can do so at their own pace. All of the materials posted in this content management system are available to students at any time or place.

#### Instructional Advantages (3)

Video conference instruction is not at all new to Alaska, as it has been used with varying degrees of success for well over a decade. In my mind, however, the most important development for the efficacy of distance-delivery instruction has been the emergence of truly dynamic and interactive content tools. When I first encountered video conferencing as a new teacher in Alaska 12 years ago, material was still being faxed back and forth on a daily basis, and texts were sent through the mail. Now, with tools like Actively Learn, our content can be far more engaging and responsive. The screenshot on this slide shows just some of the features that a tool like this can offer....

At the bottom of the page, you see an example of a question that the teacher can embed in the text. These questions act as roadblocks, so that as students answer, the teacher can easily monitor their progress through and comprehension of the text. In addition, teachers can create notes and embed multimedia content to enrich the text. Student have access to a number of tools as well, including definitions, shared notes, audio, and a flagging tool to alert the teacher if they are struggling with something.

When teachers are actively engaging with students in this way, they are able to provide nearly immediate feedback.

Feedback is Teaching -

We believe that direct instruction is important. We believe that practice is essential. But practice on its own is not enough. Pardon the cliché, but practice does not make perfect - practice makes permanent. In order for students to learn, we need to provide them with meaningful individual feedback. Receiving feedback is more than simply receiving a grade. Students need to be affirmed when they are successful, and the teacher needs to be able to intervene, redirect, and guide students forward when they struggle.

So while direct instruction and practice remain vital, our new mantra has become, "The feedback is the teaching."

Actively Learn and tools like it demand that every student grapple with every question, while also providing teachers with an efficient vehicle for giving individual, personalized feedback in real-time so that students can correct their misunderstandings. When we do this, we are personalizing their learning - addressing with each individual the concepts and ideas that they need reinforced.

Feedback is Teaching (2) -

Another great tool for providing meaningful, personalized feedback is Google Docs. In a traditional classroom, a student may complete a writing assignment and turn it in, only to wait for days for the teacher to return it. When they do get it back, many turn immediately to see the grade, and never even look at the feedback at all. When this happens, the feedback is meaningless, and the time that the teacher invest is wasted. Feedback is most meaningful while the student is still engaged in the learning process, not after the fact. With Google docs, students can collaborate in real-time to improve writing and share ideas.

Feedback

The graph on this slide shows that over 85% of my students have indicated that the feedback they receive in my distance delivery course is faster than the feedback they have received in traditional courses. This is not because I try harder than other teachers, it is because I use tools that enable this kind of personal, timely interaction.

Communication Advantages -

One criticism of distance delivery courses is that the teacher is less accessible to the students. We have observed that while there is a teacher face to face with students and questions can be asked in the same way that they are in a traditional classroom, video conference instruction can actually increase communication between the teacher and some students. There are a variety of tools that we use every day to accomplish this - email, feedback cycles in interactive tools like the ones I have described, and even individual google hangout meetings with students. Why is this important? Because 74% of my students

indicated that they have used these alternate forms of communication to ask questions that they otherwise would not have asked aloud. Student voices are not ignored, as critics claim, but rather empowered.

#### Student Voices -

I have a short video clip with some student voices. Before I show this short video clip, I would like to reiterate that we in the Copper River School district fully support the use of individual e-learning courses. However, we also recognize the special role that teachers play in supporting student learning. When these students use the term "VTC" in this video, they are referring to the kind of instruction that I have described here today.

#### Opportunity: Equitable Access Through Collaboration

The Copper River School District is certainly not alone our use of this mode of instruction. The superintendent from the Lower Kuskokwim School District testified to this on Monday. However, there are many smaller districts like ours, both on and off the road system, that would benefit from a higher degree of cooperation and collaboration. There is no reason a student in Tatitlek or Crooked Creek could not be enrolled in a course offered by the Copper River School District, or that a student of ours could not be enrolled in a course offered by Chugach School District.

In our own district, we have already started to see the results. We are able to provide more appropriate course offerings to our students, especially those at our smaller sites, which in turn allows students to be challenged

#### Opportunity: Teacher Quality and Retention

If we truly believe that every child deserves a quality education, it is our duty to the children of Alaska to provide the best possible educators to all students, regardless of their physical location. Students in rural areas deserve expert teachers in each content area. We cannot accomplish this without technology, and based on our experience in the Copper River School District, we believe that a collaborative approach to offering video teleconferencing courses could help to bridge this access gap.

I began my career in the small upriver village of Crooked Creek in the Kuspuk School District. I fully understand the important job that village teachers have. This kind of collaboration would not replace, but rather would refocus and empower generalist teachers in small rural schools to serve as mentors, coaches, and interventionists. It would allow them to concentrate on building relationships and providing support for students with unique needs.

Before I turn the presentation back over to Mrs. Van Wyhe, I would like extend an invitation to all of you to join one of my classes live. The final slide has my contact information, so if you would like to see this model in action, please feel free to contact me for specifics.

[8:27:46 AM](#)

MR. SHUMWAY presented a brief video to emphasize the quality and value provided by the teleconferenced courses.

[8:34:05 AM](#)

MS. VAN WYHE said parents initially expressed concerns for having students positioned before a computer screen through the majority of the school day and questioned how interactive, hands-on activities could still be incorporated. However, the high school schedule was reworked from the original structured format, and she presented a brief video of a student's typical day.

[8:39:20 AM](#)

MS. VAN WYHE said every component is important, but what remains the most crucial is the teacher. She offered a quote from Michael Trucano, who stated, "The role of the teacher is almost always more central, indeed fundamental, than it was before the introduction of technology." Finishing, she said it's necessary to take up the urgency for this teaching approach, to be proactive, and continually innovative.

[8:40:54 AM](#)

REPRESENTATIVE JOHNSTON asked Mr. Shumway whether students must demonstrate course mastery prior to advancement.

MR. SHUMWAY responded that a VTC class operates in a normal manner and the students move through the course work together ensuring class discussion opportunities; not at an independent pace. Courses are not mastery based, where a student must complete a task prior to exposure to new material. However, some of the program activities lend themselves to requiring specific answers prior to advancement.

[8:42:24 AM](#)

REPRESENTATIVE JOHNSTON questioned what effect this approach has had on the cost of administration; an increase or decrease.

MS. VAN WYHE said materials costs are a wash and the administration has been reorganized. Purchases of expensive texts has been replaced with providing devices at the rate of 1.5 per student. She said, "We manage it all, really on a shoestring in terms of administrative people and support staff."

REPRESENTATIVE JOHNSTON asked if there appears to be a redefining of the brick-and-mortar aspect of the school.

MS. VAN WYHE answered yes. She opined that there is no reason that rural students can't receive an excellent education. The three students in Selana School are an example that today's education no longer needs to occur within a certain building, or in a specific school district.

REPRESENTATIVE JOHNSTON asked whether CRSD offers a pre-K program.

MS. VAN WYHE responded no, and reported that the Copper River Native Association is developing a child center that will provide programs for children from birth to age five.

REPRESENTATIVE JOHNSTON questioned the use of individualized learning in the primary grades.

MS. VAN WYHE said the method is successfully applied in the primary classrooms. She invited members to visit the Kenny Lake School, where the multi-age, 20 student, K-2nd level classroom utilizes a station rotation forum and is expediting the rate at which students are learning. Technology levels the playing field for students, she argued.

[8:46:42 AM](#)

CHAIR HUGHES pondered what a reasonable class size is for a VTC course. She also asked if there is data available comparing outcomes for students who participate in VTC classes versus traditional classrooms; analyzing intervention efficacy, and learning results.

MR. SHUMWAY responded that the classes he teaches range from 10-33 students, located at three different sites. He opined that it is reasonable to expect a VTC teacher to carry a standard size class. The efficiencies that are enjoyed allows for large class sizes, while still providing meaningful feedback, and the sight location isn't a factor. Some data is available in terms of course completion and success; however, given the small data sample, a side by side comparison study would be premature.

CHAIR HUGHES predicted that the data will likely show student improvement due to the ability for a student to ask and receive help in an anonymous manner, versus voicing a difficulty before an entire classroom.

[8:49:35 AM](#)

CHAIR HUGHES asked for further information on the grant Ms. Van Wyhe mentioned, and also whether there is a coordinated effort for a collaborative exchange of classes between districts statewide.

MS. VAN WYHE answered that the previously mentioned Rural Utilities Services (RUS) Grant, [U.S. Department of Agriculture (USDA)] funds technology initiatives that support telemedicine and education in rural Alaska. At one time many districts benefited from the grant but it has evolved to become competitive and last year only four were awarded. The district received over \$500,000, and used the award to upgrade video teleconferencing equipment and increase the number of units. Regarding the cooperation between districts, partnerships are being forged and VTC exchange programs are occurring. For two years, Copper River and Chugach districts have enjoyed mutual support. Copper River provides VTC opportunities to Chugach and in turn is able to enroll and send students to participate in the Voyage to Excellence (VTE) camp style programs hosted by Chugach. The Career and Technical Education (CTE) and the Alaska Society for Technology in Education (ASTIE) conferences were both platforms used by Copper River as outreach opportunities. Small districts have taken an interest and discovered the benefit of using VTC as a means to access additional, highly proficient teachers beyond, the one

generalist high school teacher that a small school/district may employ.

SENATOR HUGHES asked whether class fees are paid by other districts to Copper River for a student enrolled in one of the VTC courses.

MS. VAN WYHE said thus far Copper River is footing any bills, and a three year, digital teaching initiative grant is being used to cover the costs. However, the commitment by Copper River is to make the effort work, and she stressed, "It's not about the money, it's not about a contract, it's about offering opportunities to students."

[8:53:20 AM](#)

SENATOR BEGICH noted the skill set needed for the technical classroom approach of the future and asked whether teachers are receiving that type of training today. Also, VTC equipment requires someone on site to provide technical (IT) support, and who in the district has that knowledge. Finally, he asked how screen freezes and other technical hiccups are handled.

MR. SHUMWAY responded that teacher skills do need to be honed, and sometimes an individual teacher will take on the task of preparing colleagues. Teacher training courses will need to begin to offer methodology classes in VTC. The minimal technological glitches are worked around and have not been significant.

MS. VAN WYHE added that the IT support and expertise is necessary. Teacher preparation courses should incorporate this training, she stressed. Certainly a plan B is necessary should the technology not perform at a given time, but thus far the glitches have been minimal.

MR. SHUMWAY recalled only having two school days, in a two year period, when contact with distance classes failed.

[8:56:44 AM](#)

REPRESENTATIVE PARISH referred to a 2014-15 report showing the variance of connectivity percentages between the 53 districts and the associated bandwidth costs. A sample of the contrasts that exist: Copper River is in the bottom sixth percentile for bandwidth but in the top 20 for speed; Pelican is two thirds less in connectivity [than Copper River] but over 100 percent

the cost; and Northwest Arctic is eight times the cost and one fifth the connectivity. He asked whether it's important for these numbers to be aligned, or brought to a standard, to provide a more uniform level of connectivity, thus ensuring practical, collaboration opportunities to small, rural districts.

MS. VAN WYHE opined that this point could be the most important measure addressed by today's legislature. Being able to provide VTC opportunities is a game changer, especially in rural settings. An affordable, working connection is key to making it possible.

[8:58:31 AM](#)

JAMES STONE, Superintendent, Matanuska-Susitna Borough School District (MSBSD), said that one of the five strategic priorities adopted by the Alaska State School Board, for implementation by the Department of Education and Early Development (EED), is to modernize the education system. The Matanuska-Susitna Borough School District (MSBSD) is well into meeting that strategy, he said, operating under three guiding principles, which are to be responsive, resourceful, and relevant. Further, the district operates under the premise that every student learns differently and every family deserves choice. Currently, 36 percent of the families chose a school outside of their assigned neighborhood, and the evolution of choice has not stopped with the open boundaries. Program and individual choice has meant that each school provides niche opportunities and may host students who are not only attending due to a boundary exemption but may be attending as a homeschooler, or charter school student. Choice is essential to the theme of meeting each child as an individual; the current national trend. He reported that home school represents the district's correspondence program, operating out of Mat-Su Central. The students each hold an individual learning plan (ILP). At one time, ILP students would access the school district solely to gather their learning materials and have no other connection to the site. However, with the blended approach, and expansion of the site from 7,000 to 21,000 square feet, the relationship has changed. Students now take advantage of the access provided for art, music, library, technology, and club opportunities. Family centered activities have also developed. The correspondence program has doubled under this effort. Twindly Bridge Charter School has mirrored this to some extent, and to the same benefit of the families involved. Everyday students travel throughout the district to access course offerings and take advantage of

resources that are hosted by the different schools. Mobility between facilities allows mobility between programs. The approach means that students can have the opportunity to take advantage of a wide variety of classes, such as welding, aviation, emergency technician, and building trades. Ten years ago, this type of sharing and access would not have been possible. He reported that the resource sharing model is used throughout the district's educational programs. Further, the district launched the first middle college in Alaska, at the Eagle River campus, which is being relocated to the Mat-Su campus in anticipation of enrollment reaching 200. Along the lines of personalized learning, when students are college ready, they can access applicable programs via dual enrollment. Access has also expanded into a district partnership with the Alaska Native Science and Engineering Program (ANSEP). He reported that 250 students are enrolled at two or more district schools to access 619 courses. A personalized learning approach is the goal and the blended learning experience provides the tools to get there, he stressed.

[9:09:53 AM](#)

MR. STONE said technology won't replace teachers, but it does change how teaching is provided, especially in consideration of the three P's: pace, tailored to the individual need; path, providing the flexibility of what a student wants; and place, making learning accessible on a 24/7 basis. He mentioned that high schoolers tend to study between 10:00 p.m. to 2:00 a.m. To provide a rich blended learning/digital differentiation approach, available programs include: APEX, Khan Academy, Moby Max, E-Dynamics, Read 180, Math 180, Spelling City, Compass Learning, DreamBox, V Math, ALEKs, CISCO, Learning Academy, Collections, Florida Virtual, ClassFlow, Renaissance Learning, Starfall, BrainPop, Typing.com, Read Naturally Live, Nitro Type, Pearson Success, Homework Help, Tutor.com, CodeMonkey, Digital Passport, and Lexia. Part of the challenge is to manage the programs without duplication. To meet the Carnegie credit standard, APEX was chosen as the primary platform. It meets a number of needs/standards including National Collegiate Athletic Association (NCAA) requirements, to support students who are pursuing athletic scholarships. Models that students choose from are: al la carte, on-line courses with a virtual teacher; enhanced virtual, on-line courses that incorporate a local teacher; and blended, which uses a standard classroom setting and includes digital differentiation. He said that in FY16, students received 3,000 credits via al la carte and enhanced virtual learning systems.

9:12:27 AM

MR. STONE said, as a sophomore, his daughter was able to use blended learning during her exchange year in Spain; accessing math classes with a Mat-Su teacher, and biology via a virtual teacher in Wisconsin. Consideration for what employers want, is also a factor, and they tend to look for workers based on the four C's skills: communication, critical thinking, collaborative, and creativity. These four skills are not attainable today without the use of technology, thus, Mat-Su adopted a five year technology plan. He finished by explaining that a three year, professional development plan was also adopted to ensure that all teachers will be cycled through a training course for administering the learning management system.

9:16:23 AM

JEFF BLACKBURN, Education Technologist, Office of Instruction, Matanuska-Susitna Borough School District (MBSD), said the focus of his position is to implement personalized learning in the school district. He described how students were once challenged by roadblocks that were effecting their ability to complete courses and graduate. The situation can now be addressed through a collection of on-site classes to complement a student's on-line learning. Simultaneous with assembling the collection of on-site classes for students, the teachers were receiving professional development in a method called Capturing Kids Hearts. The method builds on the theory that students need academic mentors to assist them through roadblocks, overcome hurdles, and champion their efforts. The number of on-site classes offered was improved and college preparation, robotics, art, and computer programing courses were added. The computer lab was remodeled/designed into the Raven's Roost Cyber Café, providing a relationship based, on-site, high interest learning space. It allows students to engage in on-line courses while still having a certified teacher present for in-room assistance. A one week, detailed attendance snapshot of the café showed a total of 2,121 students assembling for the following reasons: 208 attending on-site classes; 229 visited the library; 312 attended a technology class; 220 attended an art class; 225 participated in music; 180 met with club members; 180 gathered and prepared for field trips; and the remainder came through for a variety of reasons such as workshops or appointments with teacher advisors. The five year graduation rate rose from 45, in 2012, to 71, in 2016. While this was occurring at Mat-Su

Central School, the brick and mortar schools brought in digital tools to create a blended learning academy; proposed for FY 18. A waiver request has been submitted to EED to allow the creation of a personalized learning environment that will offer flexibility to the families in a blended environment. The students will participate in project based learning with teachers in the classroom while being supported with differentiated reading and math curriculum using the enhanced virtual model.

[9:21:24 AM](#)

MR. BLACKBURN explained that Alaska has 600 open computing jobs, but in 2014 there were only 18 computer science graduates, of which only 11 percent were female. Further only 60 high school students took the advance placement (AP) Computer Science exam in 2016, and only three schools offered AP Computer Science. The teachers have responded by creating a blended computer science class at two of the district's comprehensive high schools using Harvard's CS-50, free, on-line course work.

[9:22:40 AM](#)

ANDREA WAGNER, Senior, Wasilla High School, reported having taken the Harvard CS-50 course remotely. All of her current classes, save one, are on-line computer classes. Not initially interested in technology, she said her first media course peaked her interest. She described the Harvard CS-50 blended class, which provides streamed lectures and work sessions twice per week. Being absent is no longer an excuse for missing an assignment, she said. Her interest in psychology has been supplanted by her interest in computer science. She has been able to proceed at her own pace and interact freely with her classmates from around the country. She described the APEX system and said it allows her to work at the pace she prefers while still having a teacher available. Computer coding access is now available for 7th and 8th graders, which puts those students ahead of her in some ways, she lamented.

[9:27:45 AM](#)

MR. STONE provided a brief video to illustrate the various campuses and associated activities.

[9:30:20 AM](#)

SENATOR HUGHES thanked the participants and announced the next meeting of the Senate Education Standing Committee.

CHAIR DRUMMOND thanked the participants and announced the next meeting of the House Education Standing Committee.

**ADJOURNMENT**

There being no further business before the committees, the joint meeting of the House Education Standing Committee and Senate Education Standing Committee was adjourned at 9:30 a.m.