

NORTH DAKOTA LEGISLATIVE MANAGEMENT

Minutes of the

EDUCATION COMMITTEE

Monday and Tuesday, September 21-22, 2015
Roughrider Room, State Capitol
Bismarck, North Dakota

Senator Donald Schaible, Chairman, called the meeting to order at 9:00 a.m.

Members present: Senators Donald Schaible, Howard C. Anderson, Jr., Kyle R. Davison, Robert Erbele, Tim Flakoll, Joan Heckaman, Richard Marcellais, Erin Oban, Nicole Poolman, David S. Rust; Representatives Richard G. Holman, Bob Hunsakor, Jerry Kelsh, Lisa Meier, David Monson, Mike Nathe, Karen M. Rohr, Mark Sanford, Cynthia Schreiber Beck, Kris Wallman, Denton Zubke

Members absent: Representatives Mary C. Johnson and Alex Looyesen

Others present: See [Appendix A](#)

At the request of Chairman Schaible, Legislative Council staff presented the [Supplementary Rules of Operation and Procedure of the North Dakota Legislative Management](#).

CONTENT STANDARDS - STUDY

At the request of Chairman Schaible, Legislative Council staff presented a background memorandum entitled [Content Standards and Assessments](#).

At the request of Chairman Schaible, Mr. Greg Gallagher, Director of Standards and Achievement, Department of Public Instruction, presented testimony ([Appendix B](#)) regarding the history of content standards in North Dakota and the current standards development process. He said, at any level of standards development, the local district is able to add to, supplement, and enrich the standards.

In response to a question from Chairman Schaible, Mr. Gallagher said the English language arts and mathematics standards are reviewed about every 5 to 7 years. He said this gives districts time to build their curricula and to implement the standards before changes are again suggested.

In response to a question from Chairman Schaible, Mr. Gallagher said in the standards development process, the participants select the best examples from a variety of states and then make changes, as necessary, to reflect that which North Dakotans believe is appropriate.

In response to a question from Senator Davison, Mr. Gallagher said the standards that North Dakota adopted for the high school level reflect what we as a state believe constitutes college and career ready standards.

In response to a question from Senator Davison, Mr. Gallagher said a student who meets the proficiency standards established in connection with the state standards should be able to meet entry level expectations at an institution of higher education, without having to take remedial courses.

In response to a question from Representative Sanford, Mr. Gallagher said Massachusetts has a long standing commitment to standards, to ensuring that the standards are reflected in the teaching requirements, and to ensuring that appropriate professional development is available to teachers.

In response to a question from Representative Wallman, Mr. Gallagher said the alignment of standards with college expectations is challenging. He said higher education needs to ensure that a student will be successful in a course and if not, the student may require some remediation.

In response to a question from Chairman Schaible, Mr. Gallagher said, theoretically, if a student attains a level of proficiency on the state assessment, that student should be able to enter college without remediation in the assessed subject.

In response to a question from Representative Nathe, Mr. Gallagher said if a parent supervising home education wants to engage with the state standards, the parent can do so. He said the law is very broad. He said a parent can choose an assessment that is not based on the state assessment.

At the request of Chairman Schaible, Dr. Ryan Townsend, Director of Curriculum; Instruction, Teacher Development, and Assessment; Bismarck Public School District, presented testimony regarding the use of content standards and assessments in the Bismarck Public School District. He said he has been involved in education for 15 years. He said that means his entire career has evolved within the parameters of standards and assessments.

Dr. Townsend said the passage of the No Child Left Behind Act forced schools to go from "Are we teaching it" to "Are they learning it?"

Dr. Townsend said there are really four questions involved in the development and implementation of standards--What should all students know? How do we know if the students learned it? What are we going to do if they don't know it? What do we do if they already know it? He said formative assessments determine whether students are learning and summative assessments determine whether students have learned that which they are supposed to have learned. He said the Bismarck Public School District utilizes learning communities to assist students who are struggling and to assist those who require acceleration because students already know the material.

In response to a question from Senator Heckaman, Dr. Townsend said the Bismarck Public School District receives dollars for the remediation of students. He said the needs are always greater than the funds that are available.

In response to a question from Senator Davison, Dr. Townsend said the Bismarck Public School District offers more than the minimum number of professional development days. In fact, he said, the district now has seven professional development days. He said the district does some things because they are required and some things because of their own district-determined need. He said the district is working very hard to meet the needs of its students and its teachers. He said flexibility is a very important feature in allowing the district to continue meeting its needs.

In response to a question from Senator Rust, Dr. Townsend said, in the Bismarck Public School District, there is a recognition that a textbook may or may not be a factor in determining whether the standards have been met. He said even today, there is still a variance in how standards are presented by certain textbooks.

In response to a question from Representative Nathe, Dr. Townsend said the 4th grade is a determinative year in terms of a student's educational progress. He said certain assessments do not provide the Bismarck Public School District with the data it believes is necessary in order to help students achieve that which they should achieve.

In response to a question from Representative Sanford, Dr. Townsend said the district has identified its priority standards and its level of expectation regarding those standards. He said regardless of the high school that a student attends, the student will have access to the same level of rigor and the district will work hard with the student to ensure that the student reaches that level.

Senator Flakoll said sometimes students do not want to take more challenging classes in high school because their grade in such a class might affect their grade point average. He said students need to understand that the chasing of grades and scores needs to be shifted internally to focus on what they are learning and what they can do.

Senator Poolman said the Bismarck Public School District weights advanced placement courses so there is no negative impact on the student's grade point average.

THE USE OF RESTRAINT AND SECLUSION IN PUBLIC SCHOOLS

At the request of Chairman Schaible, Legislative Council staff presented a background memorandum entitled [Use Of Restraint And Seclusion Procedures In Schools](#).

At the request of Chairman Schaible, Ms. Valerie Bakken, Special Education Regional Coordinator, Department of Public Instruction, presented testimony ([Appendix C](#)) regarding the use of restraint and seclusion in North Dakota public schools.

In response to a question from Senator Flakoll, Ms. Bakken said the Anne Carlsen Center has to follow different regulations than a school district. She said the center is trying to remove the use of restraints. However, she said,

there are still individuals for whom physical, mechanical, or therapeutic restraints are the necessary response. She said at any time, a staff member might be called upon to assist in the restraint of an individual. For this reason, she said, staff training at the center has been very extensive.

With the permission of Chairman Schaible, Mr. John Porter, Special Education Unit Director, Rural Cass and South Valley Special Education Units, said in his schools there is a focus on crisis prevention and intervention training. He said there are two trainers in each of his two special education units. He said we have leadership teams in each of the schools go through the full complement of crisis prevention and intervention training. He said that is a 2 to 3 day program. He said they have trained personnel in proximity to the lunch room and the bus yard and a core team that can respond to a code word when a situation arises.

Mr. Porter said the units try to provide Crisis Prevention Institute (CPI) training to all of their staff. He said 80 percent of CPI training pertains to verbal de-escalation and preventative strategies. He said the remainder of the training pertains to how to staff should do the actual body holds, etc.

With the permission of Chairman Schaible, Ms. Lisa Goldade, Special Education Unit Director, Pembina Special Education Unit, said as the teacher specializing in the education of emotionally disturbed students, she would meet with other teachers and staff members to inform them about the students who they would encounter. She said training was focused on those staff members who were most likely to encounter aggressive students.

In response to a question from Representative Rohr, Ms. Bakken said the state does not have a policy regarding the use of restraints or seclusion. She said the North Dakota School Boards Association has provided a model policy regarding the use of restraints and seclusion.

In response to a question from Senator Marcellais, Mr. Porter said his unit's response is to limit the use of restraint procedures to 30 minutes. He said, if after that period of time a situation still exists, law enforcement personnel or emergency responders are called.

In response to a question from Representative Nathe, Ms. Bakken said often parents are asked to sign off on any restraint or seclusion procedures, as set forth in their child's individualized education program (IEP) plan.

Mr. Porter said they notify the parent as soon as possible. Often, he said, a parent will elect to pick up a child if the child is not responding and settling down.

In response to a question from Chairman Schaible, Ms. Bakken said the United States still does not have a national policy or requirement because it is very hard to draft statutes, regulations, or policies that can accommodate every situation.

In response to a question from Senator Poolman, Mr. Porter said if a parent believes that their child was inappropriately restrained or secluded, a parent could file an SFN 960 form with the county social services office or contact local law enforcement and file a complaint. The SFN 960 form is used to report suspected child abuse or neglect. It can be accessed at <http://www.nd.gov/eforms/Doc/sfn00960.pdf>.

In response to a question from Senator Davison, Ms. Bakken said right now the Superintendent of Public Instruction does not require school districts to collect and submit information regarding the use of restraints and seclusion.

Mr. Porter said, if a special needs student is involved, the use of restraint or seclusion is documented in accordance with the student's IEP. He said that information is not readily accessible.

In response to a question from Senator Rust, Mr. Porter said his school district has appropriate procedures in place to ensure the safety and well-being of its students. He said the Fort Ransom School District does have occurrences of restraint and seclusion. However, he said, restraint and seclusion is used in accordance with the district's policy.

In response to a question from Senator Heckaman, Ms. Bakken said the state is not losing federal dollars because it does not have a plan in place.

At the request of Chairman Schaible, Ms. Christine Hogan, Protection and Advocacy Project, presented testimony ([Appendix D](#)) regarding the use of restraint and seclusion in North Dakota public schools.

Ms. Hogan said the Protection and Advocacy Project is an independent state agency. She said the United States Department of Education's guidance makes it extremely clear that the use of restraint or seclusion for acts of subordination or noncompliance is inappropriate. She said some years ago there were a number of documented cases of children's deaths while restrained. She said the Government Accounting Office conducted a 10-year study regarding the use of restraint and seclusion. She said the report led to the drafting of legislation governing the use of restraint and seclusion in schools. She said the bill was not enacted. She said a number of states have enacted statutes or regulations that address the use of restraint and seclusion. She said the state of North Dakota is silent. She said it has no statutes and no rules. She said as a result there is no requirement for data collection or reporting to the Protection and Advocacy Project.

Ms. Hogan said even though there is no data there is anecdotal evidence. She said page four of her testimony lists incidences that have occurred in North Dakota. She said while in the listed circumstances, staff members could most likely make the case that the student was out of control. On the other hand, she said, with proper training, staff members could utilize de-escalation techniques that would defuse situations before they involve violence.

Ms. Hogan said school resource officers are trained law enforcement officers. She said they are trained to use handcuffs, not de-escalation techniques.

Ms. Hogan said the Protection and Advocacy Project was told that the Bismarck Public School District used seclusion rooms. She said two Protection and Advocacy Project representatives investigated the information and photos are attached to her testimony. She said the Protection and Advocacy Project has requested information about the use of the rooms but to date the information has not been provided.

Ms. Hogan said if this state were to pursue the adoption of meaningful laws or regulations governing the use of seclusion or restraints in schools, it would be helpful to consult with national experts.

In response to a question from Senator Anderson, Ms. Hogan said there would be merit in having consistent state guidelines so that everyone would know what the law is. She said she can think of no reason why we would not want all lesser responses to be exhausted first and why we would not want all staff members to be trained in de-escalation techniques.

In response to a question from Senator Rust, Ms. Hogan said school districts feel that they are justified in using restraints and seclusion. She said that is why it is necessary to have a state law. She said we have a state law that protects individuals in institutions from restraint and seclusion. Arguably, she said, students in schools should have the same protections.

In response to a question from Senator Rust, Ms. Hogan said, if a student is in a "seclusion" room with a staff member, that does not constitute "seclusion."

CAREER AND TECHNICAL EDUCATION

At the request of Chairman Schaible, Legislative Council staff presented a background memorandum entitled [Career and Technical Education Opportunities](#).

At the request of Chairman Schaible, Mr. Wayne Kutzer, Director, Department of Career and Technical Education, presented testimony ([Appendix E](#)) regarding career and technical education in North Dakota. Mr. Kutzer said in order for a school district to receive funding for a career and technical education program the district must meet parameters that include a minimum number of credits, a minimum number of students, certified career and technical education teachers, an approved curriculum, appropriate facilities and equipment, and the existence of an advisory committee.

Mr. Kutzer distributed a magazine entitled [Career Outlook](#). The magazine is on file in the Legislative Council office.

In response to a question from Representative Nathe, Mr. Kutzer said career fairs are a big part of helping students understand the types of jobs that are available.

In response to a question from Senator Heckaman, Mr. Kutzer said the "locating information" part of the WorkKeys assessment is problematic for students. He said the blueprint is delivered to instructors so that they can help prepare students.

In response to a question from Senator Flakoll, Mr. Kutzer said one of the common impediments is the existence of sufficient classrooms and equipment for students to enroll in virtual career and technical education courses. He said career and technical education courses tend to be more expensive. He said getting more programming into schools will require buying down the cost of providing those courses.

In response to a question from Representative Sanford, Mr. Kutzer said two-year campuses do offer dual-credit career and technical education courses. He said the challenges that are encountered pertain to cost and size. He said in North Dakota the cost of a dual-credit course is absorbed by the student's parent. He said if in the fall a student comes in with a semester's worth of level I credits, that student cannot go on to level II classes, because those are not offered until the ensuing semester. He said there are just not sufficient numbers of students to provide the multiple offerings that could be had in a place like Hennepin County.

At the request of Chairman Schaible, Mr. Dan Rood, Director, Southeast Region Career and Technical Education Center, presented testimony ([Appendix F](#)) regarding the Southeast Region Career and Technology Center. He said among the representatives on the center's board are a former state Distributive Education Clubs of America officer and a former state Future Farmers of America officer. He said the center serves students from Hankinson, Lidgerwood, Wyndmere, Richland, Lisbon, Sargent Central-Forman, Oakes, Ellendale, Edgely-Kulm, and Campbell-Tintah. He said in some cases the students travel to the center and in other cases, the teachers travel from the center to the schools. Sometimes, he said, the programs are delivered electronically. He said the center's offerings allow students to graduate early from college and enter the workforce in a variety of fields.

Mr. Rood said there are five career development counselors who work out of the center to ensure that all the districts in the region have access to trained counselors. He said the cost of equipment is prohibitive for many smaller school districts. He said by rotating and sharing the equipment, many more students are able to experience the vast options available in career and technical education.

Mr. Rood said workforce development and job services are both located at the center in Oakes. He said this type of sharing ensures that taxpayer dollars are used prudently and effectively. He said the State Board for Career and Technical Education is a solid board that looks at collaboratively providing opportunities to students throughout North Dakota.

Mr. Rood said we need to remember that there are many pathways to success and that career and technical education provides pathways and options to students that can and will open many doors for students.

In response to a question from Representative Kelsh, Mr. Rood said in smaller rural communities there are issues of economies of scale. He said in some areas childcare is not needed year round and that makes it difficult for individuals who might be thinking of entering that profession.

In response to a question from Senator Anderson, Mr. Rood said the Century Code sets forth the formula for calculating the dollars that flow through to school districts for career and technical education. He said the state appropriation for K-12 education is adequate. However, he said, if a school district has declining enrollment, there is a significant challenge in providing both academic and career and technical education opportunities to students.

In response to a question from Representative Nathe, Mr. Rood said he appreciates the strength of the State Board for Career and Technical Education. He said the governance model that four of the centers have ensures broad-based representation from the communities they service.

In response to a question from Senator Davison, Mr. Rood said the merging of career and technical education centers might not be popular in some sectors. However, he said, given the continuing decline in the state's rural population, mergers may be the only way that economies of scale can be utilized to offer more programs to a greater number of students. He said policies should encourage, not mandate such changes.

In response to a question from Representative Kelsh, Mr. Rood said in an ideal world there would be a highly qualified teacher in front of every class. However, he said, that is not our world. He said many of the distance classes are very good and that is a lot better than having none at all.

TOP-PERFORMING COUNTRIES - STRATEGIES

At the request of Chairman Schaible, Mr. Marc S. Tucker, President and Chief Executive Officer, National Center on Education and the Economy, presented testimony ([Appendix G](#)) regarding content standards and assessments.

Mr. Tucker said we have to be honest with ourselves about why the United States does so poorly on international comparisons and about the implications of this status on our country's economy.

Mr. Tucker said one day he asked his research director what it takes for a student to be successful at a typical community college in the United States. He said she called the American Association of Community Colleges and was told that they had no idea. He said neither did others who were contacted.

Mr. Tucker said we have talked about the need to be college and career ready for many years. He said there is only one institution that does both of those jobs. He said it is the community college. He said about half of the students who ultimately attend four-year colleges start out in two-year colleges. He said most of the vocational certificates that are awarded come from the community colleges. He said if one wants to be ready for college and a career, one needs to be ready for community college.

Mr. Tucker said a research project was conducted in which community college instructors were asked to name the most popular textbooks for their programs. He said those textbooks were analyzed to determine their reading levels. He said as part of the project it was determined that the most difficult course for students was one entitled *College Math*. He said a detailed analysis was done regarding the topics that were taught in the typical college math course.

Mr. Tucker said the findings showed that the reading level of the typical text was the 12th grade level. He said the instructors who were interviewed in connection with the research indicated that in most cases they had to prepare PowerPoint summaries of those textbooks so that the students could get the gist of what was in the books, because the students could not comprehend material at the 12th grade level.

Mr. Tucker said over the years the average level of the high school text used in the United States has gone down to the grade 7-8 level. He said there is a gap of about five years between the level at which students are asked to read in high school and what they are asked to read at the community college level.

Mr. Tucker said when they looked at the topics taught in the typical college math course, they found that the topics are generally within the purview of Algebra I. He said Algebra I is supposed to be taught in middle school. He said large numbers of students leave high school and go to college unable to be successful in their community college mathematics program. In other words, he said, the students are unable to do middle school mathematics.

Mr. Tucker said it turns out that almost no topics taught in high school mathematics are needed to be successful at the community college because all that is taught at the community college level is middle school mathematics and the students cannot even do that.

Mr. Tucker said they had hoped to get writing samples to analyze. He said they were told that at the community college level students are very rarely asked to write anything because they cannot write.

Mr. Tucker said they then went to the ACT, which used to be called the American College Testing Service. He said ACT has predictive data that connects the courses that students take and the grades that they receive in high school with how well they do in the first year of college. He said he presumed the data would show that students who went to four-year institutions did significantly better than those who went into two-year institutions--i.e., that the students were better prepared. He said ACT indicated that there was no difference in the preparatory level of students going to two-year institutions versus the four-year institutions.

Mr. Tucker said the reality is that students are not going to college. They are enrolling in very expensive high schools and a large percentage of them are not ready for that high school program. They are not ready for either college or work.

Mr. Tucker said one question is how did we get here? The second question is how does this picture compare with the situation in other countries?

Mr. Tucker said from the 1850s on the United States was ahead of the world in attainment. He said we were the first in the world to provide universal primary school education--free primary education to the masses. He said by the 1900s the United States was the first to provide universal high school. He said the G.I. Bill after World War II allowed us to then provide higher education for the masses. He said this is something the world had never seen.

Mr. Tucker said our enormous economic success from the early 20th century on was a result of the United States being ahead of the world in education. He said that enormous investment in the skills of our people produced an economy that did well by everyone in it--i.e., that the difference in the economic attainment level of the top 5 percent and the bottom 5 percent was very small.

Mr. Tucker said in the middle 1970s all that came to a halt. He said productivity slowed, family income flattened, and the distribution of income became much less equal.

Mr. Tucker said in the mid-1970s Americans began to notice that low-skilled jobs were heading overseas. He said this was the first time that Americans were competing not with people in the next town, region, or state, but with people on the other side of the world. He said in 1990 manufacturing wages in South Korea were 1/10th of what they were in the United States and manufacturing wages on the coast of China were 1/100th. He said the cost of telecommunications and the cost of shipping had dropped so dramatically since World War II that it was really easy for employers to manufacture products abroad and then ship them to wherever they would receive the highest prices. He said employers who did not do that were put out of business by those who did.

Mr. Tucker said for every job that was being outsourced, 10 were being automated. He said about 15 years ago, we began to notice that outsourced jobs were not being limited only to low-skilled jobs. He said middle-level and high-skilled jobs were going overseas too. He said the global employers asked themselves what jobs they needed to have done and what skills were needed in order to do those jobs. He said they asked themselves where they could get those skills most inexpensively. He said more and more they found what they needed in countries other than the United States.

Mr. Tucker said global employers are not limited to human labor at particular skill levels. He said their other choice is machines. He said each year machines are able to perform more tasks at higher reliability and at lower cost. He said if a job is routine in nature, it can probably be reduced to an algorithm, incorporated in software, and performed by a machine. He said we are seeing the mass extinction of routine low-skilled work in high-wage countries.

Mr. Tucker said the system of education that we have in place was instituted during the 1910s and 1920s at a time when 80 to 85 percent of the jobs could be done by people who had only a 7th or 8th grade level of literacy. He said the system we have in place today is still turning out a majority of students who have only a 7th or 8th grade level of literacy. He said it is the same system. The only problem, he said, is that the jobs available for people with a 7th or 8th grade level of literacy are quickly drying up. He said we are now preparing more than half of our students for jobs that in all likelihood and in short order will not exist. He said there is an intimate connection between the design of our education system and the fate of our economy.

Mr. Tucker said many in the education sector saw this happening and suggested that this could be fixed with more money. In fact, he said, after inflation the United States is now spending 250 percent more per student. He said another group suggested that the class size should be lowered. He said the United States has lowered class size more than any other industrialized country in the last 40 years and at an inordinate expense. He said yet others suggested charter schools and vouchers--i.e., market mechanisms in education. He said while there are good reasons for wanting charters and vouchers, improving student performance is not one of them. As for technology, he said, the research shows that an enormous investment in technology also does not result in improved student achievement. He said finally some believed that the answer was tough test-based teacher-accountability systems of the type envisioned by the No Child Left Behind Act. He said there is no evidence that they work and plenty of evidence that they have set the country back. He said after these various initiatives during the past 20 to 30 years our costs have soared and our National Assessment of Educational Progress scores continue to be flat.

Mr. Tucker said our competitors in other high-performing countries had a very different analysis of what the problems were and what the solutions were. He said they did not do what we did, which was double down on our old educational model--a model that is based on inexpensive teachers and low standards--a model that was designed to provide 7th or 8th grade literacy levels and did that very well. He said the countries against which we were competing figured out that in order to be successful, they had to build a new educational system that would allow them to provide to all students a kind and quality of education that had previously been provided only to their elite. He said they also figured out they would have to do this while spending no additional dollars because additional dollars were not available.

Mr. Tucker said in the 2000 Program for International Student Assessment (PISA), 32 countries participated. He said the United States ranked 15th in reading, 19th in mathematics, and 14th in science. He said by 2012 the number of countries had increased from 32 to 65. He said the United States ranked 24th in reading, 36th in mathematics, and 28th in science. He said some would suggest that there were twice as many countries, so it is not surprising that we were lower down on the ranking. However, he said, in 2000, virtually all of the top industrialized countries were in the sample. He said what has been added to the sample were a whole lot of developing countries. He said the United States should be far higher in the rankings. Instead, he said, countries that are far below us economically are far exceeding our performance.

Mr. Tucker said recently there was an analysis of survey results involving mathematics, reading, and problem solving among 16 to 34 years olds--essentially the Millennials in the workforce. He said in reading only Spain and Italy ranked lower than the United States. In numeracy, Spain, Italy, and the United States tied for last place, and in problem solving, the United States was last again.

Mr. Tucker said if the United States is doing so poorly and others are doing quite well, it is reasonable to ask how they are able to do that.

Mr. Tucker said there are nine similarities among the top-performing countries.

Mr. Tucker said the top-performing countries provide strong supports for children and their families. He said that is done in different ways. He said in some cases it is government-based and in other cases it is family-based. He said this is not the case in the United States.

Mr. Tucker said the top-performing countries provide additional resources for those students who are harder to educate. He said the top-performing countries are setting very high standards for all of their students because they see the low-skill jobs going away.

Mr. Tucker said the top-performing countries provide world-class highly coherent instructional systems.

Mr. Tucker said the top-performing countries provide qualification systems with multiple no dead-end pathways for students to achieve those qualifications.

Mr. Tucker said the top-performing countries have an abundant supply of highly qualified teachers. He said these countries never need to lower their standards for teachers because they never have a shortage of teachers. He said their teacher preparation programs attract students from the top ranks of their high school classes. In addition, he said, the schools support their very highly qualified teachers--i.e., individuals who could otherwise have been doctors, lawyers, architects, etc.

Mr. Tucker said the top-performing countries all have very effective systems of career and technical education because they view that part of the system as equally important to the academic track.

Mr. Tucker said the top-performing countries have school leaders who can manage this type of system. He said they recognize the importance of having a first-class program to train school leaders.

Mr. Tucker said the top-performing countries all have a coherent system of educational governance that is capable of implementing these very complex systems at scale. Most important, he said, is the integrity of the system itself. In the top-performing countries, he said, the education system actually looks like it was designed by somebody. He said the parts and pieces fit together. He said there is support for one another.

Mr. Tucker said the top-performing countries use high, internationally benchmarked standards. He said their standards are designed to capture the complex skills that global employers are looking for. He said they are not just statements about what students should know and be able to do. He said their standards include content statements--much like our standards--examples of appropriate student work, and commentaries explaining why the representative student works meet the standards. He said the top-performing countries do this for the whole core curriculum, not just for mathematics and language. He said simple statements setting forth what students should know and be able to do are far too ambiguous.

Mr. Tucker said the top-performing countries provide curriculum frameworks that address sequential learning from kindergarten through to the end of high school. He said they determine what they want students to be able to do when they leave high school and they specify it. Then, he said, they work their way down to kindergarten. He said they then build up by grade or grade span the topic that the students are to master at each stage of their development. He said this is done in a very logical order. He said each year is a prerequisite to the ensuing year. He said there is nothing in there that does not contribute to the sequence, regardless of how interesting the teacher may find it. He said the time is devoted to those things that will achieve the end goal. He said they then put all of this into a curriculum framework.

Mr. Tucker said too often in the United States the same topic is taught at four or five different grade levels. He said, if an American teacher knows that some students have "gotten" a particular topic and others have not, the teacher does the sensible thing and starts at the beginning. Often, he said, this leads to "reviewing last year" in January. He said the United States is devoting as much time to a topic as high-performing countries, but their performance far exceeds ours. He said the reason is that in the 6th grade, a topic is covered over a period of five

weeks. He said the 7th grade teacher knows that the students have learned the topic so the 7th grade teacher can begin teaching 7th grade material, not 4th grade material. He said that is how the United States finds itself in the position of having community colleges teaching students 7th grade mathematics.

Mr. Tucker said the United States believes that we have done our job if we have standards and assessments. He said that is not what the top-performing countries think. He said they take the standards and turn them into a curriculum framework. He said they take the curriculum framework and translate it into a curriculum. He said they take the curriculum and create a syllabus that sets forth what the course is about, what the student is expected to do, which texts will be used, which projects the students will be expected to do, and how the student will be evaluated. He said this structures the work.

Mr. Tucker said unlike in United States schools there are no generic lesson plans. He said in the top-performing countries teachers are viewed as professionals and it is assumed that if the teacher knows what the students are expected to learn in some detail, the teacher will be able to come up with lesson plans that fit their students and their own teaching styles. He said the curricular framework is, however, very clear.

Mr. Tucker said examinations in the top-performing countries are based not on the standards but on the curriculum. He said if you know what the students are expected to know and do, if you know which projects the students must undertake, and if you know which textbook the students will use, you can create an appropriate examination.

Mr. Tucker said the top-performing countries expend three to four times as much as we do on assessments. He said they are willing to make that expenditure because they know that teachers teach what they expect to be on the test. He said they know that if they were to spend what the United States does for their assessments, only a very narrow range of skills would be measured. He said the top-performing countries want their students to know much more than that. He said you get what you pay for in assessments. He said the student assessment scores are based not only on the responses to the assessment, but also on the work that the student does during the year--i.e., a 20-page paper, a piece of art, a robot that the student constructed, etc.

Mr. Tucker said the top-performing countries give grades for accomplishments, not for effort. He said the top-performing countries have high expectations for all their students. He said those expectations are articulated for parents and students. He said all these pieces are viewed as integral parts of the education system.

Mr. Tucker said, in addition, the teachers are explicitly trained to teach the respective courses. He said, when one visits a teachers' college in these countries, one finds that they are teaching the soon-to-be teachers how to teach the state curriculum. He said in the United States teachers' colleges are free to teach whatever they wish and they rarely wish to teach what the state requires students to take.

Mr. Tucker said in the United States teachers hate to teach to the test. He said in the United States tests are supposed to be curriculum-neutral because every school board can set its own curriculum. He said because students have different curricula teachers and test makers view it as unfair to favor one curriculum over the other. He said the rest of the world looks at curriculum-neutral tests as sheer lunacy. He said they are trying to determine whether the students have mastered the curriculum that was derived from the standards that the state set. He said teachers in the top-performing countries have no problem teaching to the test because they cannot imagine why one would not want to know whether the students learned that which they were supposed to teach.

Mr. Tucker said the top-performing countries determine what students are expected to achieve and then they make that clear to the parents, clear to the students, and clear to the teachers and they provide to the teachers the resources that they need to teach the students so that they can meet the standards. He said that is clearly not the United States system.

Mr. Tucker said in the top-performing countries there is no such thing as a high school diploma like in the United States. He said in the United States a high school diploma is viewed as an attendance certificate. He said it was highly valued when relatively few people needed it and when it was a sign that students had the stick-to-itiveness to reach a 7th or 8th grade level of literacy. He said 100 years ago that was a good goal. Right now, he said, a high school diploma conveys almost nothing to an employer other than the fact that the student stayed in high school for a specific period of time. He said it does not indicate that the student has acquired any particular level of skill.

Mr. Tucker said in the top-performing countries all that a student receives is a certificate indicating the courses that the student took and the grades that the student received. He said it is very clear to everyone that if a student wants to go to a certain institution there are specified courses that the student must take and specific grades that the student must get. He said that is why it is called a qualification system.

Mr. Tucker said in this country a qualification system is viewed very negatively. He said we pride ourselves on giving students second chances and if they do not make it on a second chance, we pride ourselves on giving them a third chance. He said if there was merit to the multiple chance system for "late bloomers," one would rightly expect our students to be achieving at a much higher level. Instead, he said, they are achieving at a far lower level.

Mr. Tucker said if in the American system a student is not doing well in elementary school we provide the student with a second chance by sending him to middle school and hoping that he will do better. He said if a student is not doing well in middle school, we provide the student with a third chance and send him to high school. Thereafter, he said, we provide the student with a fourth chance by sending him to college. He said we then wind up sending our students at the end of high school to "middle school."

Mr. Tucker said he had a conversation with a student who was going to go to a community college. He said that in order to be admitted all the student had to do was pass his high school courses with a "D." Mr. Tucker said he then went to the guidance counselor at the community college who confirmed that the student would be admitted. He said the guidance counselor indicated that the student would then have to take a placement test. He said the student had no idea that he would have to take a placement test and that if he did not pass it, he would have to pay for the remedial courses himself. He said millions of students are going through high school thinking that they can get into a community college by just lounging around. He said they believe it makes no difference whether they receive D or A grades in high school. The outcome is the same--i.e., admission.

Mr. Tucker said other countries make it clear to students what they need to do in order to be successful. He said everybody in those countries understands the rules. He said even the employers know what it means to have taken a specific course and to have received a specific grade. He said in the United States a student will take a course in mathematics and receive a B grade. He said no one knows what that means. He said employers do not know what that means. He said the reason is that the course has been defined at the local level, probably by the teacher. He said one has no way of knowing what that student knows. He said in a qualification system everybody knows. He said the students in a qualification system are taking tough courses and they are working hard.

Mr. Tucker said many Americans still believe that in the top-performing countries a student's life story is defined by age 14. He said that has not been the case for many years. He said it is possible to go from vocational education to a university and vice versa.

Mr. Tucker said the top-performing countries recruit their teachers from the top half of their high school graduating class. He said the United States recruits from the bottom half. He said most states have no idea about the applicant pool from which they are recruiting their teachers.

Mr. Tucker said the top-performing countries all have a very stringent admissions process. In Denmark, he said, the admissions process involves a review of the paper qualifications, including high school class placement and examination performance, and interviews conducted by a group of first-rate teachers and a first-rate principal to determine whether the student has a passion for teaching. In addition, the applicant is then put into a clinical setting of students approximating the age that the applicant is seeking to teach, in order to evaluate the applicant's ability to connect with students.

Mr. Tucker said the top-performing countries want to ensure that their teachers actually master the content that they will teach. He said the reason that American students are coming out of school unable to do middle school mathematics is because their teachers do not understand how the mathematics works. He said they can teach the procedures, but they do not know why the procedures work. He said if our teachers really understood mathematics, chances are they would be working someplace else and getting paid a whole lot more.

Mr. Tucker said many of the top-performing countries require elementary teachers to specialize in mathematics and science or in their native language and social studies. He said this is not true in the United States. He said the result is that all over the United States there are teachers who hate mathematics having to teach mathematics. He said one study indicates that in the case of a majority of United States elementary teachers, the last mathematics course they took was in middle school. He said in the top-performing countries, those seeking to teach mathematics must take a lot of college-level mathematics courses. He said no one does that if they hate mathematics. He said they will go and teach something else. As a result, he said, in the top-performing countries, those who teach mathematics love mathematics and know a lot about mathematics.

Mr. Tucker said there is nothing like "Teach for America" in the top-performing countries, because the countries will not allow an individual to teach in their schools if that individual has only a few weeks of preparation to be a teacher. He said in most of the top-performing countries one has to spend at least one year learning the craft of teaching. He said most of this learning is not from a teacher in a teacher's college, but from the most experienced--

i.e., the best teachers, in their schools. In effect, he said, they "apprentice" them into top-rate teachers. He said they can do this because they have systems of career ladders in their schools. He said that has enabled the countries to identify their best teachers and much of their time is spent teaching the new teachers.

Mr. Tucker said the top-performing countries also teach their teachers how to conduct research. He said they actually view their teachers as the engine of school improvement--i.e., the people who are going to make the system better every day. He said their teachers are afforded the time to do that. He said they are designing all kinds of interventions in schools to improve the outcomes for students. He said they want them to have good research skills because they want them to be able to look worldwide at the best research that has been done on the thing they are trying to improve. He said they want them to be able to distinguish between good research and bad research. He said when they are putting together a project to improve the school they want them to be able to figure out whether or not it actually worked. He said they have to be able to collect and analyze data.

Mr. Tucker said the top-performing countries are moving teacher training from their normal schools to their research universities. He said Finland, for instance, moved their teacher training programs out of their third-tier institutions into their research institutions and reduced the number of teacher-preparation programs from approximately 24 to 9. He said there are no "emergency certifications" in the top-performing countries.

Mr. Tucker said the top-performing countries feature very aggressive, multi-step career ladders for teachers. He said what one has to do to move up the ladder is clearly articulated. He said what the criteria are and how it is managed are clearly articulated. He said as one moves up the ladder one receives higher pay, greater authority, greater responsibility, and higher status. He said the top-performing countries have taken teaching from a blue collar status and turned it into a profession. He said that is attractive to people who could have gone into real professions.

Mr. Tucker said teachers in the top-performing countries spend a lot of time developing engaging lessons together. He said they research their effectiveness. He said they develop probing questions for students. He said they are in each other's classrooms all the time critiquing each other's practice.

Mr. Tucker said in Shanghai every teacher except the master teachers have a mentor. He said the idea is that no matter how good a teacher is that teacher can become better. He said that is a very different way to organize a school. He said it requires a lot of management skills and that is why they are working really hard to develop principals who have those management skills.

Mr. Tucker said in summary, the top-performing countries have bet on a professional model of teaching and a professional model of school organization and management. He said this results in fewer, better teachers who they trust.

Mr. Tucker said they pay their teachers a lot more and they spend much less than we do on education. He said that is puzzling because 80 to 85 percent of costs are generally tied up in personnel.

Mr. Tucker said American teachers spend more time in front of students than teachers do in any other industrialized country. He said we believe that if a teacher is not facing students, that teacher is not doing his or her job. He said in the top-performing countries 30 to 35 percent of a teacher's time is spent working with other teachers to improve the outcomes.

Mr. Tucker said the top-performing countries can afford to do this because their class sizes are larger. He said if you have fewer, much better teachers, with much better teaching techniques, those teachers can individualize instruction within a full class setting. He said there are better teachers, fewer teachers, better paid teachers, and fewer administrators. He said if there are really good teachers there is no need for all those specialists and administrators. He said they have teachers they trust. He said right now we do not trust our teachers. He said that is what the accountability system is all about. He said in the top-performing countries the teachers are producing the results that the public and the policymakers expect. He said in the United States the oppressive accountability systems are actually driving good teachers out of teaching and driving good high school students away from even considering teaching as a career. He said the top-performing countries have high expectations, literally expressed by high standards, an aligned curriculum, and the right kind of examination system. He said they also have first-rate school leaders who are trained to implement the new model. He said there are no short cuts and there are no silver bullets.

In response to a question from Senator Anderson, Mr. Tucker said in the top-performing countries there are one to three state required tests in a student's school career. He said there are typically tests at the end of middle school because in some of the countries admission into high school is competitive. He said there are typically tests

at the end of the lower division of high school because there is basically a common curriculum for the student up until that point. He said based on their performance up to that point there are various options available for the upper division of high school. He said there is a matriculation test at the end of high school for those going into college or the journeyman's test for those going into the workforce.

Mr. Tucker said there are far fewer tests than what is given to American students. He said many of the countries use "sampling" tests. He said this provides a reference for how well the school is doing. He said most of the top-performing countries have a system of inspection. He said if a school does not pass its sampling test a team of inspectors will be sent in to figure out what is wrong. He said they will give feedback and suggestions. He said if things do not go well thereafter they will take measures. He said unlike the United States this does not involve the threat of closing a school. Often, he said, the principal of a high-performing school will be asked to take on a "family" of schools, including some that are not performing well. He said they will ask teachers from a lower-performing school to spend time in a high-performing school so they can see what they are supposed to be doing. He said they will send teachers from a high-performing school to a lower-performing school so that they can show the teachers in the lower-performing school what they are supposed to be doing. He said they will take a principal from a lower-performing school and make him an assistant to a principal from a high-performing school so that he can serve as an apprentice.

In response to a question from Representative Holman, Mr. Tucker said top-performing countries have nothing like our ACT or SAT. He said in the United States we do not know what curriculum the students have taken because it is all locally determined often by each teacher. He said we are not able to say here are the grades that the students received on an external examination system applicable to a course that has been determined. He said we do not know what the grades mean. He said if you do not know what curriculum the students have taken and if you do not trust the grades, you need tests like ACT and SAT to predict how students will do when they get to college. He said if there is a system in which you do know what the curriculum is and if the grades are centrally scored, tests like the ACT and SAT are completely superfluous. He said the ACT and the SAT are fixes for a system that is not correctly designed.

In response to a question from Representative Nathe, Mr. Tucker said how to deal with low-performing teachers is not an issue in top-performing countries. He said they have a surplus of high-performing teachers. He said they control quality on the input side not on the output side. He said this is true of the professions in the United States, not however, in the teaching professions. He said we make it absurdly easy to be a teacher. He said they make it very hard to become a teacher.

Mr. Tucker said it is necessary to improve the quality of the teacher pool. Otherwise, he said, firing a poor teacher gives you no better options for their replacement.

In response to a question from Representative Meier, Mr. Tucker said the length of school days varies tremendously. He said student performance is impacted by the quality of teaching, not by the time spent in school.

In response to a question from Senator Oban, Mr. Tucker said in the top-performing countries professional development entails team work, research, and analysis. He said it does not involve going to "workshops" like teachers do in the United States. He said we know that sending teachers to workshops has no benefit at all. He said it is a waste of money. He said our system of pay increases are tied to teachers taking courses of indeterminate name. He said it does not matter what they are. He said if we were to take the amount of money that the United States now spends on sending individuals to workshops and use that money to increase teacher salaries there would be vastly better payoffs.

Mr. Tucker said we do not need to tweak this education system, we need a new system. He said a new system must provide a consistent set of positive incentives to people so that they will do the things you want them to do. He said incentives can be divided into three types. He said positive incentives are used to get people to do what you want them to do. He said negative incentives are incentives that do not get them to do what you want them to do and perverse incentives are incentives that get people to do the opposite of what you want them to do.

Mr. Tucker said in education we have created a world in which many of the incentives are perverse. As an example, he said, we want our teachers' colleges to recruit their students from the top half of our high school graduates. However, he said, we incentivize them to go after quantity not quality. He said each year we actually train about twice as many teachers as we actually employ. He said we actually incentivize the teachers' colleges to grind out as many teachers as possible at as low a cost as possible in order to make as much money as possible, so that they can run the rest of their university with the surplus provided by the training of teachers. He said if you are trying to improve the quality of teachers that is the very last thing that one would do.

Mr. Tucker said we want our high school students to take tough courses and work hard in school but we tell them that their chances of getting into a community college are the same whether they get A or D grades in school. He said we have incentivized them to treat high school as a place to hang out until they get the piece of paper they want.

Mr. Tucker said we want our teachers to work hard in their teaching and to get better and better at their work, but we provide no career in teaching and no incentives for getting better and better at their work. He said a teacher who consistently works late into the evening and goes above and beyond the "call-of-duty" receives no additional benefits or recognition beyond those given to the individual who works a regular day and not a moment more.

Mr. Tucker said we want to attract to teaching young people who could be professionals in high-status fields but we pay them like blue collar workers and provide them with a blue collar work environment. He said we know that teachers teach what is measured, but we use tests that measure very few of the skills we want them to teach.

Mr. Tucker said we need to look really hard at what we want out of our education system and then we need to analyze pretty carefully and honestly whether the laws and regulations we have passed actually incentivize teachers and students to do what we want.

Mr. Tucker said the case for the United States to learn from other countries is overwhelming. He said unfortunately too few Americans are interested in learning how to improve their education system by looking at other countries. He said there is a whole mountain of excuses for not doing that. He said the most prominent excuses are the following:

1. The United States is exceptional and the experience of other countries does not apply;
2. It might be really important for us to do "X," but we cannot do it here;
3. Other countries only educate an elite whereas the United States educates everyone--i.e., the United States would be competitive if our lowest income students were not counted;
4. Other countries are homogeneous whereas the United States is uniquely diverse;
5. Other countries' cultures are different and nothing they do can be transferred to the United States; and
6. Gross inequities in finance cannot be fixed because Americans will never give up local control.

Mr. Tucker said, 25 years ago the Canadians had a system just like the United States--i.e., local control and local finance. He said they finally ran into an inordinate amount of resistance regarding the amount of local tax increases that were required to finance their education systems. He said the premiers of the central and western provinces proposed taking over the funding of their education systems--i.e., they would raise the money province-wide and spend the money province-wide. He said the educators would have to put up with a decrease in the total amount of money going to the schools. He said the proposition was accepted and the result is that Canada is now one of the top 10 in the PISA assessments. He said there was less money but it was more effectively spent.

Mr. Tucker said the United States response to what others have done in order to build highly effective systems is that we cannot do it here because it is not possible. Yet, he said, other countries gave up traditions, elements of culture, and laws that underpinned their systems for decades and even centuries because they did not work for them anymore. He said if Americans are not prepared to do the same, we will have a second-class education system forever.

Mr. Tucker said the National Center on Education and the Economy had for years been taking lessons learned from other countries, turning them into programs and interventions, and working with states and cities to implement them. He said, in each case, the research showed that their programs and interventions were the most effective in whichever class they were working in and that they were among the best in the country. However, he said, the effects on overall student performance were marginal. He said this is the case with virtually all educational interventions in this country. He said the reason is that one cannot take a strategy which has been successful in a country with a highly successful education system and install it in a dysfunctional system and expect it to work in the same way.

Mr. Tucker said there is a desire to work with a few states who are really interested in rebuilding their education systems over a 10 to 15 year period, capitalize on the research, bring in experts who have been responsible for the success of their systems, and bring in individuals from the United States who are familiar with successful education systems and who are working on building successful systems based on what they have learned from other top-performing countries. He said after the lunch recess he will describe the work being done in Kentucky along these lines.

In response to a question from Representative Hunsakor, Mr. Tucker said the variation within and between schools in student performance is nowhere near what it is in the United States.

In response to a question from Senator Erbele, Mr. Tucker said in the top-performing countries only 5 to 6 percent of the students are assigned to special education. He said the students assigned to special education are generally those who have identifiable physical or mental disabilities. In the United States, he said, special education students account for roughly 10 to 12 percent of the students. He said they often include students that the teachers find hard to teach. He said the United States spends inordinate dollars on special education. He said the research shows that our expenditures do not produce results.

In response to a question from Senator Erbele, Mr. Tucker said sports programs and extra-curricular activities support character development.

In response to a question from Representative Rohr, Mr. Tucker said there is research that indicates the number of words that an individual needs to know in order to be successful. He said if students do not have a definitive vocabulary by the end of the 4th grade they will likely not recover that deficiency. He said there is an enormous difference in vocabulary that students bring to the 1st grade.

Mr. Tucker said countries like Japan view early childhood education and even some of the elementary grades as opportunities for students to learn to love learning, to learn to love being in school, and to learn to love getting along with other students.

In response to a question from Representative Kelsh, Mr. Tucker said the Organization for Economic Cooperation and Development (OECD) has very rigorous sampling procedures. He said the OECD samples 15 year olds in order to determine how students are doing on their fundamental and basic education.

Mr. Tucker said there was a time when the United States had a universal high school education system and the other countries did not. He said today the top-performing countries have high school graduation rates in the range of 95 percent. In the United States, he said, the range is 79 percent. He said this includes students who have had their grades restored.

In response to a question from Senator Schaible, Mr. Tucker said it is well known that in Ontario if one cannot get admitted to a teachers college, one can go to the United States. He said Ontario has much higher standards for entry and licensure.

KENTUCKY RISING

Mr. Tucker said the eastern part of Kentucky is the Cumberland Plateau. He said it has been involved in high-sulphur coal mining for a long period of time and it is desperately poor. He said the center of the state is relatively prosperous. He said that is the industrial area. He said Kentucky is home to the Toyota Motor Company in the United States and its largest assembly plant. He said it has a very mixed economy, including the horse racing industry and the bourbon industry. He said neither the horse racing industry nor the bourbon industry account for much of the state's income. He said even coal no longer accounts for much of the state's income.

Mr. Tucker said Kentucky has a history of education reform. He said about 20 years ago the legislature passed the Kentucky Education Reform Act. He said that followed a decision by the Kentucky Supreme Court in response to a school finance suit in which the court found that not only was the Kentucky education finance system unconstitutional, but the entire system of education was unconstitutional. He said the legislature responded by deconstructing the state's Department of Education. He said state employees who had worked in the Department for years had to reapply for their jobs. He said some were rehired and some were not.

Mr. Tucker said Kentucky brought in a series of very good commissioners of education who proved to be effective leaders. He said the key to Kentucky's success was the Pritchard Committee. He said this consisted of a coalition of business leaders willing to back the education reforms and get tough with the legislature and the Governor when it was necessary.

Mr. Tucker said prior to that reform Kentucky had one of the worst systems of education in the United States. He said Kentucky was near the bottom of virtually all education charts. Right now, he said, Kentucky is in the statistical middle with respect to the NAEP scores and it turns out to be an average American state with respect to elementary and secondary education on almost all indicators. He said this was an enormous victory for Kentucky and it foreshadows the challenges that this country will have with respect to increases in educational indicators.

Mr. Tucker said Kentucky was the first state to require implementation of the Common Core State Standards. He said the Kentucky Superintendent of Public Instruction had engaged a lot of people in the state to participate in the development of the Common Core State Standards. He said people in the state felt a strong sense of ownership in the standards. He said they did not feel as if the standards were being imposed upon them.

Mr. Tucker said the state's strategy for implementing the Common Core State Standards involved many people at the school and school district level. He said the people were involved in designing the implementation plan and in making it work.

Mr. Tucker said the National Center on Education and the Economy met with the Kentucky Superintendent of Public Instruction and the President of the Kentucky Council on Postsecondary Education for the purpose of taking that which was known about what the top-performing countries had done with respect to the initial preparation of teachers and turn that into a set of criteria that would be used to judge proposals coming from Kentucky institutions of higher education that committed to achieving what the top-performing countries had achieved in the area of teacher preparation. He said this was not designed to be a competition among the institutions but rather a competition with the criteria.

Mr. Tucker said there was considerable resistance from Kentucky's prestigious institutions. He said they were succeeding wildly from a financial perspective and they saw no reason to change. He said the institutions that prepared the greatest number of teachers in Kentucky were much more receptive.

Mr. Tucker said Kentucky was advised not to take the criteria from the top-performing countries and try to legislate it statewide on a date certain. He said that approach would have mobilized every institution in the state that had thought it would lose. He said Kentucky was advised to offer institutions an opportunity to become part of the project. He said there were no state funds available initially so this was not a matter of institutions signing on for additional money. However, he said, after the project was underway there was a commitment to seek money from the legislature and from foundations.

Mr. Tucker said willing Kentucky institutions were told to align themselves with school districts that were also interested in the project. He said if one asks the institutions of higher education to raise their standards the initial thought is that the institutions will have fewer students. He said if one asks the institutions of higher education to raise their standards a lot the next thought is that the institutions will end up with no students. He said this would have left the institutions with no incentive to participate.

Mr. Tucker said if one tells school districts that they need to build career ladders, pay a lot more for teachers, and make the districts much more attractive places to work, the districts very quickly would figure out that they would just end up paying more money for the same kinds of teachers that they used to get because no changes were made in the available teacher pool.

Mr. Tucker said the people that the institutions are trying to attract need to know that if they meet the higher standards they can get hired at higher wages and have a different place to work. He said that requires collaborating schools and school districts. He said there was a belief that the school districts would get on board but less confidence that the institutions of higher education would agree to the project.

Mr. Tucker said the proposal was then reconfigured not to focus on reforming the teacher preparation program but to focus on a systemic reform that would involve all the known features of top-performing countries altered to fit Kentucky and addressed along a practical legislative continuum. He said this became *Kentucky Rising*. He said they recognized that because so many aspects of the education system were being reformed over a period of multiple years this will need to have the support of all the major constituencies. He said they will have to understand it and feel that it is being approached in a "Kentucky" way.

Mr. Tucker said the first order of business was to help Kentucky do a gap analysis. He said that involved taking a detailed look at what the top-performing countries do in each of the nine areas and compare that to what Kentucky was doing in each of the nine areas. He said Kentucky realized that they had made progress but that they had a long way to go. He said Kentucky needed to know what it had to do in each one of the nine areas and Kentucky needed to understand what would happen if it did not change.

Mr. Tucker said a governing structure was formed for *Kentucky Rising*. He said at the top was a steering committee that included education notables and leading business people who had a stake in how education would be reformed. He said under the steering committee there was a "working group" that consisted of individuals, principally those in government, who would have to implement the changes. He said this group supplied the data for the gap analysis. He said it was also a way to ensure that because the data was generated by the working group it would not later be challenged.

Mr. Tucker said the gap analysis was presented in phases. He said the Superintendent of Public Instruction retired, the head of the Kentucky Education Standards and Practices Board had left that position, and the current Kentucky Governor is term limited. He said those occurrences have resulted in a temporary leadership void.

Mr. Tucker said there is very broad support for *Kentucky Rising* in the state. In fact, he said, the search for a new state Superintendent was contingent upon that individual's support for and willingness to lead the *Kentucky Rising* effort.

Mr. Tucker said the next logical step is to form working groups to develop a plan that would bring the state up to international benchmarks in each of the respective nine areas. He said that would obviously lead to a legislative agenda.

Mr. Tucker said if he could change one thing about how *Kentucky Rising* was initiated, it would be taking the time to speak to groups such as the interim Education Committee. He said it is vitally important that those who are involved in such an effort have a full and complete understanding of the reasons for the reform and the manner in which top-performing countries undertook their reform efforts.

In response to a question from Senator Heckaman, Mr. Tucker said the nine building blocks do not need to be addressed in the order presented. He said the most important drivers of student achievement are the instructional system, the gateways for students, the system for building a growing body of first-rate teachers, and making the changes in how schools are managed in order to support the educational effort. He said some states are further ahead than others in particular areas.

In response to a question from Senator Flakoll, Mr. Tucker said in the top-performing countries there are class sizes in the 30 to 40 range and even larger in China. He said their teaching techniques involve a lot of engagement. He said this is particularly important in the larger classes. He said with properly skilled and trained teachers it is possible to provide a better education in a larger class setting.

In response to a question from Senator Flakoll, Mr. Tucker said top-performing countries spend a lot more time than the United States in building a unified curriculum so that what is learned in one class is used in another. He said in Singapore there is a shift from teaching the disciplines to creating a curriculum that in turn creates an experience for students, which enables them to learn what they need to learn in order to be effective upon leaving school. He said they put a lot more emphasis on what can be done with what one learns. He said there is a much greater focus on problem solving and projects. He said this forces both students and teachers to draw on what they know from a variety of disciplines.

In response to a question from Senator Flakoll, Mr. Tucker said if a teacher does not have a particularly strong background in the subject, that teacher will typically start at chapter one in a textbook and work through it. He said the problem is that a textbook is not a curriculum. He said it is a compendium of topics. He said in project-based learning a teacher has to be prepared to go where the students need to go.

In response to a question from Senator Schaible, Mr. Tucker said typically American schools are larger than schools in many of the top-performing countries. He said until recently the top-performing countries have not thought much about administrators. He said generally in those countries the administrators are teachers who still teach but take on some administrative duties. He said they recognize that administrators need to know how to get the best out of their professionals. He said that is what is done at most of this country's leading corporations. It is now, he said, what we must do in education. He said that would take a very different type of background and training for administrators.

COMMITTEE DISCUSSION

Senator Anderson said North Dakota should devise a strategy to obtain a gap analysis, similar to that which was provided to Kentucky. He said it would take a lot of work but it would be a tremendous value to this state.

STAFF DIRECTIVES

Senator Oban said she requests that the committee be given information regarding which school districts have adopted policies pertaining to the use of restraint or seclusion in the public schools.

Senator Flakoll said he requests that the committee be given data regarding career advisors and that the committee be given updated data regarding the performance on assessments of students who enroll in career and technology education courses.

No further business appearing, Chairman Schaible adjourned the meeting at 2:30 p.m.

L. Anita Thomas
Senior Counsel

ATTACH:7