

HJR 90 (2008): Joint Subcommittee Studying Science, Math, and Technology Education

August 13, 2008 - Meeting Summary

The Joint Subcommittee Studying Science, Math and Technology Education held its first meeting of the 2008 interim on August 13 in Richmond. The first order of business was the election of Delegate John A. Cosgrove as the chair and Senator Patricia S. Ticer as vice-chair of the joint subcommittee.

Remarks

Dr. Patricia I. Wright, the soon-to-be State Superintendent of Public Instruction (effective October 1, 2008), addressed the joint subcommittee with a few remarks regarding her vision for science, math, and technology education in the Commonwealth. Dr. Wright began by giving the joint subcommittee insight into her background and training in mathematics and explaining why that strengthens her desire to earn Virginia a spot at the forefront of science, math, and technology education. Dr. Wright emphasized teacher quality in these areas of education and shed light on a few troubling statistics regarding annual teacher vacancies across the state. For example, this past school year there were 160 science, math, and technology vacancies, which translated into 20,000 students without competent teachers. In addition there are 1800 annual vacancies, which is about 11% of the teacher workforce. Finally, Dr. Wright discussed the idea of coherence within the STEM subject areas, meaning that the content of the subject must be taught, but also the application of that content is also very important. It is her aspiration to improve teacher quality and retention while serving as Superintendent and also to move towards solid coherence in the STEM subject areas.

Presentations

Staff provided the joint subcommittee with an overview of the new HJR 90 that continues the work of the two-year HJR 25 (2006) joint subcommittee and also expands the scope of the joint subcommittee's work. The new resolution provides five ongoing requirements from HJR 25, including: (1) review of the curriculum of existing public schools in the Commonwealth; (2) study of accessibility to specialized schools by students throughout the Commonwealth; (3) review and recommendation of innovative ways to interest students in science, math, and technology; (4) identification of the key points during the K-12 education experience that will determine whether a student will become interested, and maintain that interest, in math, science, and technology; and (5) examination of potential partnerships between public schools, institutions of higher education and business and research entities in the Commonwealth. Among the new directives in HJR 90, the joint subcommittee is required to: (1) ascertain the factors contributing to the shortage of science and engineering graduates and recommend alternatives to mitigate the effect of such factors; (2) determine the current supply and

demand for science and engineering graduates in Virginia; and project the need for such graduates in the next decade; and (3) identify incentives designed to attract and retain more students into science and engineering. Staff concluded the presentation with a summary of the HJR 25 final legislative recommendations and the outcome of such recommendations during the 2008 Regular Session.

Staff also presented the outcome of a study conducted by the Editorial Projects in Education (EPE) Research Center in which all 50 states were surveyed to "assess the status of K-12 technology across the nation in the areas of access, use, and capacity." Virginia received a ranking of 4th in the nation based on its 2008 technology report card. In addition to technology, the report also addressed STEM education overall and analyzed the states based on the National Assessment of Educational Progress (NAEP) testing in math and science and teacher preparation. Staff pointed out that although Virginia is ranked 37th and 28th for percentage of math teachers and science teachers holding math and science degrees respectively, such ranking does not consider teachers with majors in math or science education.

Ms. Paula Klonowski, the Science Coordinator from the Office of Middle and High School Instruction within the Virginia Department of Education (VDOE), briefed the joint subcommittee on the middle school science education in Virginia. She outlined what is taught at each grade level, and when that content is tested. Currently, middle school students are given a cumulative SOL assessment covering earth science, life science, and physical science in the eighth grade. A question from the joint subcommittee prompted a discussion about whether some of the underperforming teachers are currently being placed in the 6th and 7th grade science classes as a result of there being no SOL assessment at those grade levels.

Dr. Lois Williams, the STEM Coordinator from the Office of Middle and High School Instruction within the VDOE, set the stage for two school division presentations on the new Governor's Career and Technical Education Academies that are starting up during the 2008-2009 school year. There will be seven academies beginning this year with six being funded with the National Governor's Association Grant received by the Commonwealth last July and the Loudoun County academy was created solely from local funding. Two more academies are expected by 2009. The academies are intended to provide options for students to acquire knowledge in the STEM fields "that will prepare them for high-demand, high-wage, and high skill careers in Virginia." Courses may be taken at a high school, online, or at a community college. Proposals had to include at a minimum: one institution of higher education, one partner from business and industry and one public school division and one of the approved academies has 17 business partners. An Academy website is currently in production in order to promote the model for replication across all 132 school divisions. All academies are required to provide: (1) rigorous academic content with career and technical instruction; (2) an emphasis on STEM career pathways; (3) individualize high school plans for each student; (4) assurance that graduates complete a college and work readiness curriculum; (5) assurance that graduates will qualify for the new Technical and Advanced Technical Diplomas; and (6) Virginia's Workplace Readiness Skills.

Mr. Joe Johnson, Executive Director for New Horizons Regional Education Centers and the Governor's Academy for Innovation, Technology, and Engineering (GAITE), gave the joint subcommittee a sense for how the academy will operate as a regional and coordinated effort across six school divisions. The Academy courses will focus on engineering with career pathways in Electrical Engineering Technology and Mechanical Engineering Technology because those are the specific employment needs of the Peninsula region. All courses will be offered at divisional high schools, New Horizons, Thomas Nelson Community College, or through distance learning. Although the courses are offered only at the 11th and 12th grade levels, exploration of the subjects will begin in the 7th and 8th grades with "exploratory Saturdays" and with a summer camp in the 9th and 10th grades. Business partners of GAITE include Northrop Grumman and Canon Virginia, Inc. and Mr. Johnson agreed with a joint subcommittee member that making tax credits available to businesses willing to support the academies' efforts would be a fantastic pay-off.

Dr. Melanie Stanley, Director of Academies for Halifax County Public Schools, and **Mr. Paul Stapleton**, Division Superintendent for Halifax County Public Schools, presented an overview of the work of the Governor's Career and Technical Academy for Renewable Resources and Agricultural Sciences. It is a comprehensive academy intended to provide students with a focus on agricultural and natural resources disciplines relevant to area the academy serves. The goals of the academy include: providing opportunities to hone skills with experts in agricultural positions, providing opportunities to develop technological skills, and promoting career awareness in agriculture. There is an elementary, middle, and high school component to the academy that hopes to encourage students to explore careers such as marine biology, conservation science, mining and geological engineering, and botany.

Next Meeting

The joint subcommittee plans to have two more meetings during the 2008 interim with the next meeting expected to be held by the end September in Richmond. It is the chairman's hope to see the joint subcommittee focus on one or two main issues and present a maximum of three recommendations at the end of the interim.

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Study website: <http://dls.state.va.us/TechEd.htm>