

HJR 25 2006

Science, Math, and Technology Education in the Commonwealth at the Elementary, Secondary, and Undergraduate Levels

8/1/06 Meeting Summary

The first order of business of the HJR 25 Joint Subcommittee was the election of Delegate Cosgrove as Chair and Senator Devolites-Davis as vice chair. Delegate Cosgrove gave a brief introduction on the origin of the study. In several Joint Commission on Technology and Science (JCOTS) advisory committee meetings representatives from the private sector stressed the need for highly skilled employees in both technical and research fields. As a recurring theme in JCOTS, Delegate Cosgrove sponsored HJR 25 to address education concerns as the technology industry in the Commonwealth continues to grow.

After the introduction to the study Delegate Cosgrove directed Staff Attorney Patrick Cushing to review the requirements and scope of the study. The staff presentation on HJR 25 can be found on the HJR 25 website hosted by the Division of Legislative Services (<http://dls.state.va.us/groups/teched/Meetings.htm>).

The next presentation was from James Firebaugh, Office of Middle and High School Instruction, DOE. Mr. Firebaugh reviewed information on the science and math Standards of Learning (SOL) and explained that technology education is imbedded in the math SOL through the required use of a graphing calculator. Mr. Firebaugh explained that after outside review of Virginia's SOLs, Virginia ranked among the top states in science but drew criticism for the physics SOL. Senator Devolites Davis commented that her daughter took AP Physics in high school but was unprepared for a college physics class. Mr. Firebaugh responded that the AP classes and curriculum are reviewed by a college board and the SOL is only targeted for non-AP classes.

The joint subcommittee moved into a discussion on how to better incorporate technology into SOLs or possibly developing a technology SOL. This responsibility would fall under the Board of Education and the subcommittee was interested in hearing from the Board of Education on the feasibility of developing a technology SOL or increasing the use of technology in existing SOLs.

The next discussion focused primarily on students entering college in a STEM field. The general consensus was students lack the hard math skills needed to succeed in college level physics, chemistry, and math classes. The joint subcommittee requested SCHEV to perform a preliminary survey of college students and professors to help identify specific areas of weaknesses for incoming students. Additionally, the joint subcommittee was interested in determining if there are geographic weaknesses in math and science. Although Virginia as a state ranks fairly high in math and science education in K-12, there may be severe geographic discrepancies hidden by state-wide statistics.

The joint subcommittee next turned to a discussion of Governor's Schools in Virginia. Senator Devolites-Davis requested Mr. Firebaugh to look into statistics related to the number of incoming students, number of students rejected, and number of applicants to the various math, science, and technology Governor's Schools. Additionally, the joint subcommittee requested a presentation from the Virginia Junior Academy of Science at the next meeting.

The next presentation was by Elizabeth Russell, Director of Career and Technical Education, DOE. Mrs. Russell stated that there are currently 88,000 students enrolled in technology related courses in the career and technology education program. Mrs. Russell reviewed several programs students may pursue, including a new course in nanotechnology. The joint subcommittee was interested in learning more about Project Lead the Way.

Dr. LaVista, Executive Director, SCHEV, presented an overview on efforts to increase science, math, and technology education in the Commonwealth's universities. The joint subcommittee was interested in getting numbers on the number of STEM graduates as compared to other fields and potential salary benefits of majoring in a STEM field. A major question left unanswered was why many students enter college with intentions of majoring in a STEM field yet half of those students do not graduate with a STEM major. Another issue addressed by the joint subcommittee was the need to recruit qualified faculty and allow current faculty to devote more time to research. SCHEV is currently in the process of performing a peer review faculty pay study and will report their findings as soon as they are available. Dr. LaVista's presentation is available on the HJR 25 website.

The final presentation was by Dr. Monty Sullivan, Virginia Community College System (VCCS). Dr. Sullivan gave a brief overview on various science and technology related programs in the VCCS. Dr Sullivan's presentation is available on the HJR 25 website.

Kathleen Stansbury, President-Elect, Virginia Technology Education Association, spoke to the joint subcommittee during public comment. Mrs. Stansbury stressed the importance of integrating technology education into existing curriculum and across all subject areas. One of the tools that can be used to do this is the Standards for Technological Education. The standards were developed on a national level and have been successfully implemented by several K-12 teachers in the Commonwealth. The joint subcommittee was interested in having Mrs. Stansbury present in greater detail at the next meeting.