COMPARISON OF ACADEMIC ACHIEVEMENT IN VIRGINIA WITH LEADING INDUSTRIALIZED COUNTRIES

STUDY PLAN
(YEAR TWO)

Study Mandate

- The Commission on Youth, at its April 5, 2011 meeting, approved a two-year plan to study how Virginia students compare academically to students in other countries. This study originated from legislation introduced during the 2011 General Assembly Session by Senator Yvonne B. Miller (Senate Joint Resolution 320). The Senate reported the resolution; however, members of the House Committee on Rules did not report the resolution.
- The two-year plan directs the Commission to:
  - compare the academic achievement of Virginia's students with that of students internationally for the past five years, especially in reading, mathematics, and science;
  - identify features in the education systems of other countries which rank higher than the United States that may contribute to academic success;
  - determine whether any of these features may be adapted for use in Virginia;
  - determine whether and what changes in Virginia's public education system are warranted in light of findings from the comparison of the academic achievement of students in Virginia with students internationally; and
  - consider other matters related to the objectives of this study and recommend feasible and appropriate options and alternatives.

Identified Issues from Year 1

- Educators, parents, community leaders and policymakers at the local, state, and federal level have focused attention on the need to address the academic achievement gap illustrated by grades, standardized-test scores, course selection, dropout rates, and college-completion rates.
- This finding is considered especially relevant, as today's high school graduates enter a global job market where highly skilled workers are in increasing demand and a number of countries have made significant improvements.
- U.S. industry, science, and technological innovation is being overtaken by competitors throughout the world, and U.S. employers have specifically detailed problems with the U.S. education system.
  - In a major survey conducted in 2005 by the National Alliance of Manufacturing, when companies where asked whether K-12 schools were doing a good job preparing students for the workplace, 84% of the 800 participating companies indicated “no.”
  - The Aerospace and Defense segment reported “no” 93% of the time.
  - The top three most frequently-cited deficiencies of the education system were basic employability skills, math and science, and reading and comprehension.
- The United States ranks 27th among developed countries in the proportion of college students receiving undergraduate degrees in science or engineering.

- The STEM-H (Science, Technology, Engineering, Math & Health) workforce accounts for more than 50% of the countries sustained growth.
- Careers in STEM-H related fields are predicted to increase by 18% from 2008 to 2018.
- A significant segment of the STEM-H workforce is approaching retirement age. However:
  - less than 30% of high school students report interest in STEM-H related majors; and
  - less than 17% of post-secondary degrees awarded in the U.S. are in STEM-H.
- On international assessments of academic proficiency, U.S. students' performance is below other countries.
  - In the Trends in International Mathematics and Science Study (TIMSS) last conducted in 2007, middle-school students in the United States ranked 11th out of 48 participating countries.
  - In the 2009 Programme for International Student Assessment (PISA), secondary school students' in the United States ranked 30th in Math, 23rd in Science, and 17th in Reading out of the 34-member Organisation for Economic Co-ooperation and Development (OECD) countries.
- Researchers assert that international comparisons can be problematic because factors such as culture and context are difficult to measure. Variables such as curricula, amount and rate of preschool education, age of school enrollment, class sizes, discipline, quantity of education, attendance at additional schools, early tracking, and the use of central exams and tests, which also impact student outcomes, may not be accounted for by these studies.
- Countries have started benchmarking their policies and practices with the world's top performers. A compilation of the attributes of leading industrialized countries' educational systems would be useful in order to gather best-practices to help Virginia keep up globally.

Study Activities

Year Two

1. Review data gathered during the first year.
   a. Review findings from in-depth literature review conducted from a sample of high performing countries based on educational outcomes, test scores, and ability to apply findings to the United States/Virginia.
   b. The countries/states selected for analysis based on geographic diversity and data availability include:
      i. Virginia
      ii. United States
      iii. Canada
      iv. Finland
      v. Singapore
      vi. South Korea
      vii. China – Shanghai, specifically
      viii. Incorporate findings from the literature review conducted of the Netherlands (included in year two)
   c. Conduct a comparison between Virginia and high-performing education systems including the following:
      i. Information about Country
      ii. Student Demographics
      iii. System Attributes
      iv. Curriculum
   d. Select specific international attributes, features, and outcomes based on clarity and portability of outcomes.
2. Convene Advisory Group to assist in process
   a. Invite representatives from impacted groups

Secretary of Education	Board of Education
Superintendent of Public Instruction	Virginia PTA
Representatives from Higher Education/Academia	Virginia Manufacturers Association
Virginia Department of Education	Career and Technical Education Officials
Virginia School Boards Association	Virginia Education Association
Virginia Association of School Superintendents	Virginia Association of Elementary School Principals
Virginia Association of Secondary School Principals	Governor's Academies/STEM-H
Virtual Learning Providers	Educators/Guidance Counselors
Business Representatives	State Council of Higher Education
Industry & Technology Representatives	Virginia Community College System
Students & Parents	Private School Representatives

3. Identify international/national best practices that can be adopted in Virginia.
    a. Identify attributes that explain/support the positive educational outcomes in the selected countries.
    b. Review other states'/nations' research and studies
    c. Practices from schools that excel
    d. Innovative methods used to measure students' progress
4. Develop consensus.
5. Develop recommendations.
6. Synthesize findings of literature and workgroup recommendations.
7. Solicit feedback to recommendations from stakeholders, constituents, and DOE/Board of Education.
8. Refine recommendations.
9. Present recommendations to Commission on Youth.
10. Prepare final report.