FINAL REPORT
FROM CONSULTANTS AND
FEASIBILITY TASK FORCE

Establishment of Residential School For Gifted Students

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

House Document No. 23

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COMMONWEALTH OF VIRGINIA
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INTRODUCTION

The report of the Department of Education to the Governor and members of the General Assembly in response to HJR 46 provided initial recommendations related to establishment of one or more residential, state-operated schools for the gifted and talented students in the arts, humanities, and sciences.

The report, dated January 13, 1983, recommended that a residential school for gifted students be designed to meet the needs of the Commonwealth's most gifted and talented students by providing greater opportunities for an appropriate in-depth educational program. The Feasibility Task Force, composed of representatives from the State Advisory Committee for the Education of the Gifted, the State PTA Education Committee, the Virginia Association of Secondary Principals, the Virginia Association of School Administrators, the Virginia Education Association, and the State Chamber of Commerce, met with members of the Department of Education staff to plan the residential school program. The Department of Education employed two consultants, Dr. Glen I. Earthman and Mr. Robert N. Lawrence, with expertise in school planning and organizational structure to develop this report.

The objectives of the program offered through such a school would be to:

- Provide intensive, in-depth instruction in the academic/artistic disciplines in accordance with individual needs
- Provide encouragement and support in the student's exploration and growth within the various disciplines
- Provide opportunities for students to demonstrate and practice skills (e.g., performances, research activities)

- Encourage interdisciplinary investigation among students and faculty
- Expand students' interests and develop aptitudes in selected areas
- Enable students to interact with others who share similar aspirations and ambitions
- Provide role models - scientists, artists, composers, industrialists, authors, economists, and scholars - in the academic and artistic disciplines.

This report, the second phase of the study, provides detailed information on establishment of a residential school, including recommendations on:

A. Capacity and Phasing of Enrollment

B. Target Group and Selection Considerations

C. Model

D. General Specifications for Physical Facilities

E. Criteria for Site Selection

F. Staffing Requirements and Phasing of Staff

G. Organizational Structure

H. Budget

I. Requirements for Implementation

Extensive data and information were collected from the staff of the North Carolina School of Science and Mathematics, a model secondary school in operation since fiscal year 1980-81. Detailed budget data, equipment requirements, program specifications, and insights of staff in planning and program development have been utilized in development of this report.

The following assumptions have been made in developing the descriptive information and cost estimates:

- The ultimate goal of the residential school would be to provide services to gifted and talented students in math, science, and the arts.
- The school should be developed in increments, with student enrollment and program areas phased over a four-year period.
- The initial program area would be math/science.

RECOMMENDATIONS

A. Capacity and Phasing of Equipment

It is recommended that the ultimate capacity of the school, in the math/science area, be set at 600 students and phased as shown below. Maximum enrollment will allow for economy of operation and a degree of efficiency in program costs that a smaller enrollment would not allow. Subsequent enrollments will allow for practical program and staff development and acquisition or renovation of physical facilities.

ENROLLMENT PLAN

Year	Grade Level	Number of Students	Capacity
1	11th Grade	200	200
2	11th Grade 12th Grade	200 200	400
3	11th Grade 12th Grade	300 200	500
4	11th Grade 12th Grade	300 300	600

B. **Target Group and Student Selection Considerations**

- Entering students will be rising 11th graders.
- Students will graduate from the two-year program at the end of the 12th grade.
- Selection will be from a statewide pool of qualified students nominated by school divisions.
- Selection criteria, including geographic location, race, sex, and other demographic factors, will ensure statewide representation.
- Students' interest in subject matter will be considered so that the number of students will be distributed equally in the courses offered at the school.

C. Model

It is recommended that the North Carolina School of Science and Mathematics be utilized as the basic model for a Virginia Residential School for the Gifted.

Based on this model, the Virginia School would provide an instructional program designed to develop within each student greater knowledge and sophistication in science and mathematics and the ability to relate to human values in the society.

Minimum requirements for graduation would include:

	Home High School	Gov. High School
English	2	2
Social Studies	2	2
Math	2	2
Science	2	2
Computer Science		1*
Foreign Language	2	1*
Physical Education	2	*
Electives	*	*

*Appropriate electives would be added according to each student's needs and interests. Classes in foreign language and computer science also will be available.

All students would be required to have a minimum of 22 credits to qualify for the Governor's seal on their diploma.

In addition to the core curriculum, students should be provided opportunities to:

- Participate in a community service program
- Participate in work service within the facility
- Discover and develop their talents through formal courses offered as electives or individual instruction provided outside their scheduled studies

- Undertake independent research projects and assist researchers in nearby universities, industry, and government installations
- Participate in both intramural and interscholastic activities in selected areas

D. General Specifications for Physical Facilities

- Facilities needed for both a 200-student school and the maximum 600-student school are given below.
- These needs are based upon the following assumptions:
  1. Each student will graduate with a minimum of 22 credits of high school work.
  2. The educational program to be offered in the school will be similar in scope to that offered in the Governor's School for the Gifted and in concert with the initial recommendations of HJR 46.
  3. A comprehensive educational program will be offered to students beginning with the first year, when the per pupil space allocation will be higher than it will be when the maximum enrollment is reached.
  4. Regardless of the enrollment, certain facilities will be needed in order for the complete educational program to be offered.
  5. A student-teacher ratio of 20:1 will be maintained.
  6. Students will be housed in dormitory space that will accommodate a maximum of two persons per room with a resident advisor proration of 1 to 20 rooms.

Square Feet Requirements of Physical Facilities Required to Accommodate 200 Students and a Maximum of 600 Students

	200 Students		600 Students	
	No.	Total Sq. Ft.	No.	Total Sq. Ft.
1. Administration				
Administrative Suite	1	600	1	600
Guidance/Counselor Suite	1	675	1	675
Health Suite	1	300	1	300
Support Facilities	1	1200	1	1200
2. Humanities & Mathematics				
General Purpose Rooms	6	4800	18	14400
Support Areas Offices/Conference/Storage	1	2200	1	3700
3. Science	1	1200	1	1200
Physics			1	1200
Earth Science/Geology	1	1000	1	1000
Individual Project Area	4	800	12	2400
Support Areas Prep/Office/Storage/Projects	1	1950	1	1950
4. Computer Labs	1	1200	2	2400
Support Areas/Office	1	800	1	800
5. Music				
Instrumental/Choral	1	1800	1	1800
Classroom/Ensemble			1	1300
Dance/Ballet			1	2000
Support Areas	1	1350	1	1350
6. Art				
Two Dimension - Painting/Drawing	1	1500	1	1500
Three Dimension - Sculpture			1	1500
Journalism			1	2000
Kiln			1	200
Support Areas Office/Storage	1	1450	1	1850
7. Library/Media Center (20,000 vol.)				
Reading/Stacks/Periodicals	1	6000	1	6000
Audio Visual/Typing			1	525
Classroom			1	800
Support Areas Office/Storage/Prep	1	1250	1	1250

8. Physical Education				
Gym	1	12000	1	12000
Lockers/Storage/Showers	1	4100	1	11000
Exercise Room			1	1200
Support Areas Office/Storage	1	1000	1	1000
9. Theatre (200)				
Theatre Seating/Stage	1	3500	1	3500
Support Facilities	1	1000	1	1000
10. Cafeteria				
Kitchen	1	2000	1	2000
Dining	1	1000	1	3000
Support Areas Office/Storage/Freezer/Clean-up	1	1000	1	1000
Total Instructional Space		55675		89600
Non-Instructional Space (25%)		13920		22400
Total Educational square feet per pupil		348		187
11. Residential Facilities				
Dormitory Space (2 per room)	100	17500	300	52500
Advisor Residences	5	2500	15	7500
Support Areas Laundry/Storage/Kitchen/ Lounge	1	2200	1	6600
Residential Space		22000		66600
Circulation/Heating/Janitorial (25%)		5500		16650
Total Residential Space		27750		83250
Total Project - Gross Area		97345		195250
Total Square feet per pupil		487		326

E. Criteria for Site Selection

Site selection criteria reflect recommendations contained in the Feasibility Study Committee Report (HD 22, 1983), in the operation of the Virginia Governor's School for the Gifted since 1973, and in the analysis of requirements to support implementaion of the proposed model.

Criteria

Implementation of the Virginia School for the Gifted will be enhanced by its location:

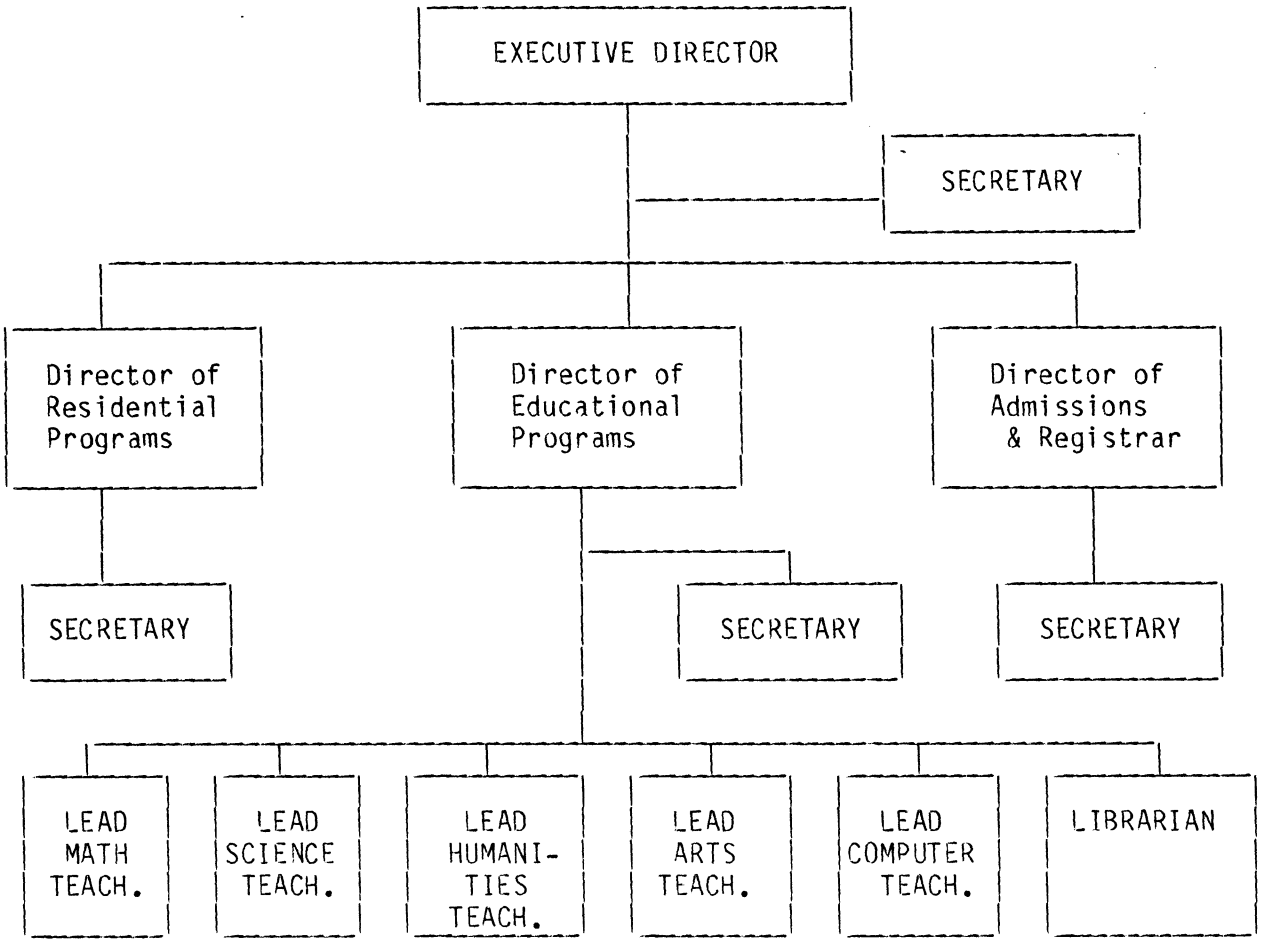
1. In an area that has demonstrated community involvement and support for excellence in education
2. Proximity to colleges, universities, and other community facilities with professional expertise in mathematics, science, arts, and the humanities
3. Availability of continuing research and development in health care, engineering, environment, and the physical and life sciences
4. Availability of businesses, industries, and community service organizations that can support student mentorship programs and provide opportunities for student volunteer activities
5. Availability of community recreational, athletic, and cultural facilities and programs

F. Staffing Requirements

It is recommended that the executive director, director of educational programs, and a secretary be employed on a twelve-month contract. Other staff should be retained as needed, for a six-month period prior to the opening of school.

It is recommended that the initial staffing pattern be structured as follows:

STAFFING PATTERN/1st YEAR



General functions and responsibilities of key staff are shown below:

Director

- Overall administration and supervision
- Personnel
- Purchasing
- Budgeting
- Long-range planning
- Financial planning and development
- Facility development and management

Director/Educational Programs

- Recruitment of academic staff
- Curriculum development
- Liaison with universities, research facilities
- Plans and administers staff development programs
- Organizes and implements student advisor program

Director/Residential Programs

- Determines equipment requirements
- Develops student handbook
- Organizes and supervises food service program, transportation services
- Organizes student services program
- Organizes student social and athletic program

Director/Admissions

- Development of admissions procedure
- Public information program
- Distribution of information to local school systems, parents, students
- Liaison with parents and local school systems
- Implementation of admissions program

Lead Teachers

- Responsible for assisting in:
  - Development of detailed curriculum
  - Selecting classroom materials and equipment
  - Recruitment of staff within specialty area
  - Planning and implementation of staff development programs
- Teaching
- Student Advisor

G. Organizational Structure

Determination of the legal basis and organizational structure for development and operation of the proposed school is of primary importance. Several alternatives were considered, including:

- Placing the school under the direct supervision of the Department of Education and the State Superintendent of Instruction
- Creation, by the legislature, of a public body with its own board and staff
- Creation of a private, nonprofit organization with its own board of directors

In analyzing the three alternatives, the following factors were considered: Ability of the organization to:

- Expedite the development of the program and facilities
- Facilitate cooperation and support from businesses and private industry
- Facility linkages with the Department of Education and colleges and universities as well as agencies involved in research and high technology training
- Provide the greatest flexibility in developing a strong and innovative curriculum for students
- Encourage participation of individuals and groups of educators, business/industry/government executives, and scientists in guiding development of the school

It is recommended that a combination of two of the three alternatives be used to implement the Residential School for the Gifted.

1. Creation of a public organization to be known as The Virginia School for the Gifted. The school should have its own board with representation from the Virginia Department of Education, local school districts, private industry, government, and include individuals who are knowledgeable in the field of math, sciences, art, and humanities.
2. Creation of a nonprofit organization or foundation to be known as The Virginia Foundation for the Advancement of Education. The organization would be responsible for securing funds to assist in developing the school, training personnel throughout the state to work with gifted students, and supporting development of the program to enhance the potential of gifted students. Creation of the two organizations would require action by the General Assembly.

H. Budget

Operating Budget The estimated operating budget for a four-year period is set forth in Table 1. Budget projections are based on detailed bud- information provided by the staff of the North Carolina School for Science and Mathematics, together with an analysis of rates of private preparatory schools and residential facilities for students with special needs.

Equipment Costs Budget information on costs of equipment is provided in Table 1. Projections are based on data supplied by the North Carolina School for Science and Mathematics.

Capital Improvements Budget Estimates of capital costs are provided in Table 1. The basis for the cost estimates for each option is provided in the analyses following Table 1.

TABLE 1
EQUIPMENT AND CAPITAL COSTS FOR RESIDENTIAL SCHOOL FOR GIFTED STUDENTS

Enrollment	0	200	400	500
School Year	1985-86 Program Planning Development	1986-87 First Year Operation	1987-88 Second Year Operation	1988-89 Third Year Operation
Personnel Costs	$239,000	$2,328,000	$2,800,000	$2,975,000
Operating Costs	71,700	72,000	1,200,000	1,275,000
Total Operating Costs	$310,700	$2,400,000	$4,000,000	$4,250,000
EQUIPMENT COSTS				
Library (Books and Equipment)	$150,000	$ 100,000	$ 50,000	$ 20,000
Office Equipment	50,000	50,000	20,000	10,000
Education (Equipment and Materials)	125,000	175,000	100,000	50,000
EDP (Equipment and Software) ($150 @ $2,000 each)	100,000	100,000	50,000	50,000
Residential Equipment	200,000	200,000	100,000	100,000
($150 at $2,000 each)	50,000	50,000	25,000	25,000
Other				
Total Equipment Costs	$675,000	$ 675,000	$ 345,000	$ 255,000
Total Operating and Equipment Costs	$985,700	$3,075,000	$4,345,000	$4,505,000
Renovation or New Construction (For details see TABLE II)	Option 1 - New construction on acquired site - $12,287,849 Option 2 - Renovation of state-owned facility with residential facilities - $1,194,249 Option 3 - Renovate state-owned facility - $5,612,891 Option 4 - Convert existing high school facilities - $6,907,292			

ANALYSES OF CAPITAL COST ESTIMATES

Analyses were made to supply the Department of Education with reasonable estimates of the capital costs for housing a Residential School For Gifted Students. Data for these analyses were obtained from several sources, including the Energy and Facilities Services in the Department of Education, interviews with architects, and reports by selected school divisions. The costs used in this report reflect current construction costs and inflation trends which were in the 3-6% range over the past four years. School construction, for a number of reasons, traditionally has a lower rate of inflation than the general economy. Thus, the inflation figure of 4% per year, which is used in this report, is well within the usual limits of increases in school construction costs.

This report is based on the supposition that there are a number of ways available to the Department of Education to house the proposed residential school. Four such alternatives are presented in this report. These options range from the most costly to the least costly and reflect the realities available to those who are responsible for planning this educational enterprise.

The Department of Education could start with a new facility to house the school. Although such a course of action undoubtedly would be the most expensive way to proceed, it would have certain advantages; the school would be housed in facilities that were planned and designed for the specific program and students, and this option may be considered the most desirable in terms of simplicity. This option, however, may not be the most desirable one for the school. There are other alternatives which entail the use of exisiting facilities. The Department of Education could use state facilities that might be available, or the state might acquire an abandoned high school that could be

purchased at reasonable cost.

Each of the options is offered as an alternative to be considered for housing the residential school. No one option is considered more advantageous than another because more data are needed to develop detailed proposals. If a site or facility is identified as a possible location for the school, more extensive analyses could be developed and better comparisons made between available options. Until such data are available, however, this report contains several options that may be used for planning purposes.

Option I

Assumptions: The state will have to construct a new facility on a purchased site somewhere in an urban area.

The school will be constructed for an initial enrollment of 200 students with facilities for the remaining 400 students to be constructed in 1988-89.
Costs of construction for both facilities are 1986-87 figures.

Construction costs used are those reported to the Department of Education and updated for 1986 with an inflation factor of 4% per annum.

The site will accommodate 600 students and the purchase cost is reflected only in the initial stage. Site development costs are included in the total cost and reflect the urban location.

A. School Facility for 200 students constructed in 1986-87

97,345 square feet of space @ $54.25	= $5,280,966	
46 Acre site & development	= $1,000,000	
Fees @ 6%	= $ 376,857	
	Total	$ 6,657,823

B. School Facility for 400 remaining students constructed in 1988-89

97,905 square feet of space @ $54.25	= $5,311,346	
Site - no cost		
Fees @ 6%	= $ 318,680	
	Total	$ 5,630,026
	Grand Total	$12,287,849

Option II

Assumptions: The state will be able to locate the school in a state-owned facility that would have residential accommodations that could be used by the school. The residential facilities would eventually accommodate 600 students.

The educational portion of the facilities would be such that the entire program could be accommodated and only minimal renovations would be necessary in the inital phase of the project. Further renovations would be needed in the 1988-89 school year.

Renovations to the residential facilities would provide for air conditioning, plus needed maintenance items. Work on the educational portion would include painting, equipment, and maintenance. New furniture would be necessary for both educational and residential use.

A. Upgrading and selective renovations of existing facilites

Upgrade HVAC and maintenance items on residential facilities - 1986
27,750 square feet of space @ $15 = $416,250
Upgrade existing Cafe, Gym, Library, Computer area, Science Labs - 1986
40,125 square fee of space @ $12 = $481,500
Fees for above @ 6% = $ 53,865

Total $ 951,615

B. Upgrade existing music, art, science, computer area, administration to be completed in 1988-89
19,075 square feet of space @ $12 = $228,900
Fees for above @ 6% = $ 13,734

Total $ 242,634

Grand Total $1,194,249

Option III

Assumptions: The state will be able to locate the school in a state-owned facility that contains at least the total programmed space as stipulated in the consultant's report, i.e. 197,250 square feet.

The space would be amenable to locating residential facilities in the existing space.

Renovation costs would not exceed 50% of the cost of constructing a new facility; this is a commonly accepted guide for renovating existing facilities.

Location of this existing facility would be in an urban area.

Renovations could be planned over a period of time to accommodate the initial enrollment of 200 students and then expanded to meet the final enrollment of 600 students.

A.	Renovation for 200 students		
	97,345 square feet of space @ $27.12	= $2,639,996	
	Fees for above @ 6%	= $ 158,400	
		Total	$2,798,396
B.	Renovation for 400 students		
	97,905 square feet of space @ $27.12	= $2,655,184	
	Fees for above @ 6%	= $ 159,311	
		Total	$2,814,495
		Grand Total	$5,612,891

Option IV

Assumptions: The state can obtain an abandoned high school facility in an urban area.

Minimal renovations would be necessary for the facility to house the educational program, and only residential facilities would require new construction on the site. The site would be large enough to accommodate this construction.

The state would be able to obtain title to the site and facility at minimum cost and not at replacement cost. Favorable considerations would permit the state to obtain the facility at a cost ranging from $1.00 to not over $500,000. Consequently, no site costs have been included.

A. Construct residential facilities for 200 students

27,750 square feet of space @ $54.25	= $1,505,438	
Minor selective renovations	= $1,000,000	
Fees for above @ 6%	= 150,326	
	Total	$2,655,764

B. Construct residential facilities for 400 students

55,500 square feet of space @ $54.25	= $3,010,875	
Minor selective renovations	= $1,000,000	
Fees for above @ 6%	= 240,653	
	Total	$4,251,528
	Grand Total	$6,907,292

TABLE 2

CAPITAL COST COMPARISON

		1986-87	1988-89	Total
Option I				
New Construction on acquired site				
Site Purchase		$1,000,000		
Construction		5,280,966	$5,311,346	
Fees		376,857	318,680	
	Total	$6,657,823	$5,630,026	$12,287,849
Option II				
Upgrading and selective renovation of state owned facility with residential facilities				
Upgrade Residence Halls		$ 416,250		
Upgrade selected educational facilities		481,500	$ 228,900	
Fees		53,865	13,734	
	Total	$ 951,615	$ 242,634	$ 1,194,249
Option III				
Renovate state owned facility (school plant and residential facilities)				
Renovation of facility		$2,639,996	$2,655,184	
Fees		158,400	159,311	
	Total	2,798,396	2,814,495	$ 5,612,891
Option IV				
Convert Existing High School Facilities				
Selective Educational Renovations		$1,000,000	$1,000,000	
Construct Resident Facilities		1,505,438	3,010,875	
Fees		150,326	240,653	
	Total	2,655,764	4,251,528	$ 6,907,292

I. Requirements for Implementation

1. Review of report by appropriate groups having responsibilities for its implementation
2. Preparation and submission to the General Assembly of appropriate enabling legislation to create the governing body and foundation
3. Authorization by the General Assembly of start-up planning and funds for the initial year of planning and operation and capital funds for the biennium.
4. Selection of site and development of detailed plans for construction or renovation.

It is recommended that the first year be devoted to planning and program development activities, including:

- Organizing governing body
- Selection of executive director
- Recruitment of staff
- Development of basic policies and procedures in areas of personnel, finance, and admissions
- Development of curriculum
- Renovation of facilities
- Establishing liaison with local school systems, universities, government, and businesses
- Establishing a nonprofit foundation and development program for funds other than state support
- Recruitment of teaching staff
- Development of in-service staff development programs
- Development of admissions procedure, public information program, student recruitment activities, and method for screening and selecting students

- Establishing library, including selecting and purchasing equipment and publications
- Designing and purchasing electronic data processing services
- Purchasing equipment and materials needed to operate the program and facilities