

HIGH SCHOOL ACADEMIES EVALUATION

FINAL REPORT

May 2002



**Fairfax County Public Schools
Office of Program Evaluation**

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EXECUTIVE SUMMARY

Introduction

This final report presents findings from a four-year study of two of the Fairfax County Public Schools (FCPS) high school academies, the Chantilly and Marshall Academies. It includes data from one- and two-year follow-up surveys from two cohorts of academy graduates. The evaluation was initiated by the Career and Technical Implementation Committee and the Professional Technical Studies Advisory Committee, approved by the School Board, and conducted by the Office of Program Evaluation (OPE) from 1998 to the present.

The Chantilly and Marshall Academies

The Chantilly and Marshall Academies offer advanced technical and specialized courses that are not generally available at other high schools. Typically, these courses require special equipment and teaching expertise, or they appeal to a relatively small segment of the student population; hence they cannot be offered at every high school. Successful completion of these courses may result in technical certification, licensure, or college credit. At Chantilly, the primary focus is on Engineering and Scientific Technology and the secondary focus is on Health and Human Services. The Marshall Academy specializes in International Studies and Business (major focus) and Engineering and Scientific Technology (minor focus). Within each career focus area, there is a wide spectrum of course offerings, particularly at the Chantilly Academy. For example, Engineering and Scientific Technology at Chantilly includes courses in Auto Body, Computer Technology Services/Electronics, Construction Technologies, Electrical Construction and Engineering, and Engineering Physics. In addition to course work, students at either academy may participate in several types of paid or unpaid internships in the local business community.

Approximately half of the Chantilly and Marshall Academy students are in twelfth grade and half are in the eleventh grade. About 35 percent of the students are drawn from Chantilly and Marshall High Schools. These students simply walk to another wing of the building to take one or two courses during part of the day. The remaining 65 percent of the academy students are drawn from other high schools. They apply for and later enroll in the appropriate academy, often with encouragement from a counselor or teacher at their base school, because they have special aptitude or interest in one of the three career fields represented. Once they are accepted and enter an academy, students are transported between their base school and the academy where they attend class in the morning or afternoon.

Purpose of the Evaluation and Evaluation Questions

The purpose of the evaluation was to study implementation of the academies, the short-term impact of the academies on students' grades and satisfaction with the program, and the long-term impact of the academies on students' career focus and success in post-secondary education

and/or the workplace. These purposes were addressed with nine evaluation questions, as follows.

- What do the academy programs offer that is not available in the regular high school program?
- Are the academy programs on target with respect to current and future labor market demands?
- Do academy students' grades improve after they enter the academy?
- Are students satisfied with the academy programs?
- Do academy graduates show higher wages, better job performance, or higher levels of job satisfaction than demographically matched non-academy graduates?
- To what extent are academy graduates employed in jobs that are related to their academy career focus area? How satisfied are academy graduates with jobs related to their career focus area, and how well do they think they were prepared for jobs related to their career focus area?
- Do academy graduates make higher grades in college, earn more college credits, or aspire to higher levels of education than demographically matched non-academy graduates?
- If enrolled in a 2-year or 4-year college, are academy graduates taking courses that are related to their academy career focus area, and how well do they think their academy courses prepared them for their academy-related college studies?
- What does it cost the school system to operate the Chantilly and Marshall Academies, beyond what it would cost to educate students if there were no academies?

Evaluation Design and Data Collection

The two questions above that concern the long-term impact of the academies on employment and post-secondary education outcomes are addressed with a longitudinal design comparing survey results from academy graduates and demographically matched non-academy graduates. The remaining evaluation questions do not involve comparison groups because they concern academy students and graduates only, or academy programs and operating costs.

Multiple data sources were used to answer the evaluation questions. The Department of Information Technology (DIT) provided student data including demographic characteristics, course enrollment, grades, and contact information. Academy students completed surveys prior to graduation. Two cohorts of academy graduates and demographically matched comparison groups of non-academy graduates completed surveys, both one year and two years after graduation. Professional Technical Studies staff provided program and course descriptions and

other documents related to the academies. National and local employment projections from the Bureau of Labor Statistics and other sources served as the basis for addressing the question on labor market demands.

Although the non-academy graduates were initially selected so that their demographic characteristics matched those of the academy graduates, academy graduates had lower grades when they were in high school and a lower probability of attending a 4-year college. In addition, the final samples of graduate survey respondents differed slightly in gender (Cohort 1) or special education status (Cohort 2). The evaluation addressed the issue of nonequivalent groups in four ways: (1) Separate analyses were conducted for graduates attending 2-year and 4-year colleges. (2) The trend comparing high school and college grades was analyzed rather than college grades per se, so high school grades were taken into account. (3) In analyzing job skills and hourly wages, the analyses were restricted to graduates with a full-time permanent job. (4) When necessary, analyses of covariance were used to control for the effects of grades, gender, or special education status.

Conclusions from the Data

Implementation and Short-term Impact

There is little doubt that the Chantilly and Marshall Academies provide students with opportunities and experiences that are not available in the regular high school program. Specifically, students pursue a career focus area by taking specialized courses that are not offered at their base school. Unlike regular high school courses, these courses often lead to certification, licensure, or college credit. The academy administrators point out, and the data of this evaluation confirm, that many of their students graduate with skills that enable them to be hired for jobs commanding salaries well above the entry level.

All of the courses taught in the academies are related to some jobs for which considerable growth is projected at both the national and local level. It can be concluded that the academy programs are generally on target with respect to current and future labor market demands.

The data of this evaluation suggest that enrollment in one of the high school academies has neither positive nor negative effects on students' high school grades. Other evaluations have found positive effects on students' grades (Hanser & Stasz, 1999) and no effects on standardized tests of student achievement (Kemple & Snipes, 2000). Thus, it appears that the academy experience has its greatest impact after students graduate, as in fact it is intended to do.

The student survey administered to all academy students in 1998 and 1999 provided clear indications that students were satisfied with the academy programs while they were in school. From 76 to 81 percent of the students reported that they were either satisfied or very satisfied with the academy program overall.

Long-term Impact and Career Focus

The evaluation results clearly show that the academy programs do benefit students over the long term, particularly if they enter the workforce or attend a 2-year college. First, with respect to labor market outcomes, academy graduates holding full-time permanent jobs consistently reported a significantly higher average hourly wage than non-academy graduates. This finding was replicated across two cohorts that were each followed for two years. Further, the wage differential was not only statistically reliable but also substantial, as much as \$4.20 per hour, or about \$8400 per year. Academy graduates were likely to be employed at skilled jobs paying \$15 to \$25 per hour, such as network analyst, whereas non-academy graduates typically worked in jobs paying \$8 to \$12 and requiring less skill, such as retail salesperson. Moreover, these wage differences were larger than those found in other studies (e.g., Crain et al. 1999).

Second, regarding success in post-secondary education, academy graduates in 2-year colleges showed more positive trends in GPA from high school to college than did their non-academy counterparts. This finding was also replicated across two cohorts. Specifically, for 2-year college students in the first year following graduation, academy graduates earned significantly higher grades in college than in their last year of high school, whereas non-academy graduates' grades did not improve significantly.

Concerning career focus, the data showed that about half of the academy graduates either worked at a job that was related to their academy career focus, or took college courses that were related to their academy career focus. The range was from 43 to 68 percent, depending on the cohort, year, and work or educational setting, with 6 of the 8 percentages falling between 53 and 68.

In summary, the high school academies offered courses and opportunities that were not available in other high schools; the courses were well-matched to the demands of the local and national labor markets; and most students were satisfied with the academy programs overall. Although the academies did not improve students' academic performance while they were in high school, there were clear wage benefits for academy graduates were sustained for two years after graduation. In addition, among 2-year college students, academy graduates showed significant improvement in GPA from high school to college, whereas non-academy graduates did not. The majority of academy graduates continued with their academy focus area after graduation, either by working at a job related to their focus area or taking college courses related to their focus area.

Recommendations

The School Board should:

- Continue to fund existing academies as a means for ensuring successful and productive FCPS graduates.

Academy staff should:

- Continue to review the alignment between academy courses and labor market needs.
- Continue to collect feedback from future academy graduates.

High school teachers and counselors should:

- Continue to advise students about the opportunity to enroll in academy programs.