



## Great Beginnings: Picking up the tools he'll need at vo-tech

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By Eleanor Chute, Pittsburgh Post-Gazette

Since he was little, Brentwood High School sophomore Jesse Sieff has loved anything to do with airplanes.

His mom, Laurie Limerick-Sieff, recalls the time he used a folding vegetable steamer to demonstrate how a jet engine works.

For years, he has drawn detailed pictures of jet engines. He has gone to an aviation camp in Alabama and ridden next to the pilot in a Cessna four-seater. He is assembling a gasoline-powered model airplane with a 4 1/2-foot wingspan.

His goal is to go to the U.S. Air Force Academy.

So when the 15-year-old had a chance to learn aircraft maintenance while still in high school, Jesse signed up.

Last week, he began spending his school mornings at Steel Center Area Vocational-Technical School in Jefferson Hills, which serves students in 10 school districts. It is one of 82 public vo-tech schools statewide that offer programs -- typically a half-day -- to high school students.

"I'm hoping that I'll get a better experience that will help me along with my aviation career," Jesse said.

Statewide, enrollment in vocational-technical schools has grown about 12 percent over a decade, from 49,020 in 1994-95 to 55,117 in 2003-04.

Over the same decade, the number of students taking vocational-technical education programs at high

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### GREAT BEGINNINGS



Darrell Sapp, Post-Gazette

**Tenth-grader Jesse Sieff watches the engines work in Rocco Ventrice's diesel engine classroom at Steel Center Area Vocational Technical School in Jefferson Hills on the first day of school Wednesday.**

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### About the series

*The opening of school each year brings new hope for a fresh start. This back-to-school series focuses on students -- from kindergarten through college -- who are starting the school year with dreams and challenges that face students everywhere.*

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schools has grown by 53 percent, from 25,944 to [middle schools or K-8?](#) 41,271.

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And regardless of whether students go to a vo-tech or enroll in a full program, 96.6 percent of all students nationwide leave high school having taken some vocational education, according to a 2004 report by the National Assessment of Vocational Education of the U.S. Department of Education.

Historically, vocational-technical programs were viewed as dropout-prevention plans or even a dumping ground for students who had difficulty with academics.

In Pennsylvania, about half of the students in vo-tech schools are physically disabled, are learning disabled or are considered "educationally disadvantaged."

But vocational-technical education has been undergoing a makeover, including trends of renaming it career and technical education, increasing its academic rigor and expanding its reach to more students who want to continue on to two- or four-year colleges.

"There is a segment of people now who are parents who were told when they were growing up, 'Just get a college degree. Everything will work out.' There are a lot of people graduating with college degrees who have no transference or marketability into the workplace," said Robert Barlett, director for the bureau of career and technical education in the state Department of Education.

Kenneth Gray, professor of workforce education at Penn State University, said there long has been a "stigma against people who go to work vs. people who go to college."

Contrary to the stereotype, many vo-tech students continue their studies after high school. A state survey taken nine months after high school graduation showed that more than one-third of those who completed a career and technology program in Pennsylvania went on to higher education.

In addition, Gray said, the job market is making career and technical education more desirable.

"As the number of people with four-year degrees who are working at McDonald's increases, I think people are becoming a little more receptive to other ways to win," Gray said.

Gray considers Pennsylvania's regional system of career and technical schools to be among the top five in the nation.

With the wide range of students now going to vo-tech schools, Barlett said, "A good career and technical center will serve all of its student at a high level."

At Steel Center, which has about 780 students, Jesse is one of seven students entering the aircraft maintenance program. During their first year, they will rotate through a cluster of related fields, starting with diesel mechanics and including machine shop and computer-aided drafting. Fridays will be spent with an aircraft maintenance instructor.

Next year, they will enter the full aircraft maintenance program taught at Steel Center by the

Pittsburgh Institute of Aeronautics. If successful, at the end of their senior year, they will be able to test for a power-plant license, making them eligible to work on aircraft engines.

If they earn a power-plant license, they will be eligible to enter the Pittsburgh Institute of Aeronautics with advanced standing, poised to complete an associate's degree in 12 months instead of 21 months. That would save each of them \$10,000 in tuition, not to mention the cost of books and materials.

Once the students have an associate's degree, they could transfer up to 66 credits from PIA to a four-year college or university.

One of the trends in vocational education is moving toward more credentials for students that count, whether it's advanced standing at a post-secondary school or an industry-approved certificate the student can earn or a curriculum that gets an industry seal of approval.

California University of Pennsylvania has a number of dual-enrollment courses, both at regular high schools and at vocational-technical schools, that enable students to take college level courses in their own schools for \$25 a credit, instead of \$204 a credit.

At Steel Center, students can earn three college credits each for digital electronics and circuit analysis from California.

This trend is likely to grow in Pennsylvania, at least in part because state officials plan to push it.

This fall, as part of the governor's Job Ready Pennsylvania initiative, state officials are beginning a five-year process of visiting all career and technical schools, providing technical assistance, reapproving their programs and urging them to meet industry standards and encourage dual enrollment.

On the federal level, career and technical education is guided by legislation known as Perkins, which is up for reauthorization.

While the U.S. House and Senate have not worked out the differences in their versions of the bills, the final version is likely to increase the accountability of career and technical schools, said Alisha Hyslop, assistant director of public policy for the Association for Career and Technical Education, whose members include more than 30,000 teachers and others in the career and technical education field.

She said the proposal includes accountability for each school for academic and technical student achievement; placement in higher education, the workforce or the military; retention in employment; and the success of nontraditional students, such as women in nontraditional fields.

Kimberly Green, executive director of the National Association of State Directors of Career Technical Education Consortium, sees an increasing emphasis on academics as well as in training students more broadly so they are prepared as technology changes.

She noted that some careers require high reading levels just for the technical manuals. The

reading skills required for entry-level occupational material for manufacturing careers is at least as high as the level needed for Leo Tolstoy's "War and Peace," according to a study from Willard Daggett, president and founder of the International Center for Leadership in Education, a consulting organization in New York state.

Barlett said he believes the academic preparation of students entering vo-tech programs needs to be higher.

The state offered professional-development programs to some vo-tech teachers over the summer to show them ways to connect math to what students are doing in, say, carpentry class, and to foster reading and writing skills so students can better present what they've mastered.

The day Jesse entered this new world last week, he biked to Brentwood High School and caught a bus to get to Steel Center by 7:30 a.m. At 10 a.m., he caught another bus back to Brentwood, where he takes Algebra 1, biology, world cultures and English.

At Steel Center, Jesse and the other aircraft students were among 27 students in the diesel mechanics classroom. Jesse looked over the engines in the classroom while some of the returning students got some engines ready to run.

Only one of his classmates is a girl. Statewide, about three-fifths of the vo-tech students are boys.

Ayasha Borreggine, 15, a South Allegheny sophomore, said the vo-tech helped her brother to get into an Ohio college to study electronics.

She chose the aviation program during a school tour. "When I walked in, I just felt like I was at home."

When she told her girlfriends she was going to the vo-tech, she said, "They're like, 'Oh, my God! You're going to get hurt.' "

But she said her mother "was like 'You go, girl,' " Ayasha said.

The first day was to watch and learn about safety rules, expectations and how to earn skills certificates.

Teacher Rocco Ventrice told the class, "Set your goals today. If you need help setting them, I can get you information....The sooner you get started, the sooner you know what you want to do, the sooner you can be successful in doing it."

Jesse already has his goal. And after his tour of the diesel shop and his first class, he said, "It's pretty neat. I'm glad I'm here."

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[Back](#)

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