

Office of the New York City Comptroller
Office of Policy Management

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The Future Is Now

**Addressing the Skills Gap
Through Career and
Technical Education in
New York City High Schools**

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Introduction

The New York City Department of Education (DOE) confronts major challenges as it attempts to keep many of its high-school age students in school. Last year, about 10,000 students dropped out. It has been estimated that there are approximately 200,000 young people in New York City who are not enrolled in school or a training program and who are not working.

Career and Technical Education (CTE) programs nationally have been shown to be effective at retaining students who are at risk of leaving school early. A recent New York City Independent Budget Office (IBO) Fiscal Brief on vocational education found that CTE schools (all CTE high schools were at one time known as “vocational education” schools) are more successful overall than other high schools at graduating students even though CTE students are more likely to come from lower-income households—a significant risk factor for dropping out—than students system-wide. In addition, many of the students entering CTE schools require substantial academic intervention in English and math. It is thus a testament to the efforts of principals and teachers that, overall, CTE schools retain and graduate students at an above-average rate and have lower dropout rates.

Most New York City public school students who complete a CTE program thereafter enter a two- or four-year college. Preparing students for college should remain a central function of CTE, and CTE can be an ideal foundation for many different college programs. Indeed, even if CTE students choose not to attend college, a quality, comprehensive education is critically important for success in today’s workplace.

Similarly, it is also vitally important to increase the number of at-risk students who complete a CTE program and graduate, many of whom will either not attend college immediately or in some cases, ever. CTE can provide students in danger of dropping out with the skills they need to avoid low wages and underemployment. CTE is also of enormous importance to private industry in New York City, particularly because of current and projected shortages of skilled entry-level workers in a number of fields.

The Comptroller’s Office undertook this review to examine ways in which CTE can be made more effective for students and employers. The Office interviewed the principals of 15 CTE high schools and three comprehensive high schools with large CTE enrollments. The Office also interviewed DOE officials responsible for CTE, the Chair of the New York City CTE Advisory Council, officials of the United Federation of Teachers, and CTE experts outside of DOE and New York City.

Key Findings and Recommendations

Findings

Career and Technical Education programs are motivating thousands of young New Yorkers who were considered at risk to remain in school and graduate. Yet many principals of schools with extensive CTE programming indicated that CTE has not been a priority for the New York City Department of Education. Their concerns about inadequate support for CTE are well grounded:

- **As a result of funding CTE high schools at a lower level than general academic high schools, the ability of DOE to offer CTE programs that meet the needs of industry and students has been compromised.** CTE schools cost more to operate than general academic high schools because they provide “dual education”—standard academic courses as well as CTE courses requiring specialized equipment and supplies ranging from jet fuel at Aviation High School, to a \$200,000 Docu-tec machine at the High School of Graphic Communication Arts. These schools also require more professional development, smaller class sizes in CTE courses, and myriad unique smaller expenses. Yet according to a New York City Independent Budget Office Fiscal Brief regarding vocational schools issued in August 2007, “total per capita funding tended to be lower in CTE schools” during 2005.

One principal informed Comptroller staff that as a result of chronic funding shortfalls, “our equipment is at least two generations behind industry.” Another noted, “If we are going to satisfy 21st century workforce needs, we need to train students on modern equipment and we are just not able to do that right now.” Nearly all of the principals who were interviewed voiced similar concerns and many provided examples of outmoded equipment and inadequate materials that compromised the effectiveness of their programs.

- **Federal vocational education funding for CTE in New York City does not fill CTE funding gaps.** CTE programs are eligible for funding under the federal Vocational and Technical Education Act (VATEA), also known as the “Perkins Act.” In Fiscal Year 2008, \$12.7 million in VATEA funding was distributed to CTE programs in CTE and in non-CTE high schools, including several of the new small schools, down from \$14.0 million in 2007. Although some CTE principals reported that this funding made a critical difference for their schools, VATEA moneys still comprise only a small fraction of CTE high school budgets, ranging between 1.3 percent and 5.8 percent. Moreover, VATEA grants are for only three years and permissible uses for the funds are limited.
- **DOE’s new Fair Student Funding (FSF) system, which has been partially implemented in the current school year, does not meet schools’ special funding needs.** In addition to the foundation allocation of \$200,000 received by all schools and the basic per-student allocation of \$3,902 for each high school student, the FSF formula provides CTE schools with a per-student amount ranging from \$193 (for “home economics, arts” CTE programs) to \$967 (for “nursing” CTE programs). Principals stated that the weighted amounts were not based on real costs and fell well short of meeting their needs. Two principals also noted that under the FSF formula, their schools are considered “over-funded” in 2007-08 even though their budgets already were insufficient to meet needs. (These schools will not immediately suffer FSF-related budget reductions because all schools are being “held harmless” from FSF-related reductions at least until 2010.)

- **Principals report that they have received virtually no direct assistance from DOE Central Administration to develop critical partnerships with private industry that can lead to internships, apprenticeships, job placements and donations of essential equipment and supplies.** Many CTE principals and assistant principals are being hard pressed to run their schools while also devoting time to developing private sector partnerships with local businesses as well as major corporations. The statutorily established DOE CTE Advisory Council (a body required by statute which includes volunteer members from business, labor unions, non-profits, and academia) has helped to facilitate partnerships, but the Council's staff was recently reduced from two to only one person, further hampering the Council's ability to perform this important work.
- **DOE recently reduced the number of staff in Central Administration that is assigned to CTE from 27 to 10. CTE programs will suffer.** The DOE Senior Executive for Policy and Sustainability assured the attendees at a recent meeting of the DOE CTE Advisory Council that this reduction will make CTE administration "more agile" even as he acknowledged that CTE principals will now be given even more responsibility. In fact, these staff reductions will have significant impacts on critical functions ranging from assisting schools with federal grant applications, securing State certification for CTE programs, developing new CTE programs, and organizing CTE student competitions.
- **Difficulty attracting qualified CTE teachers is another major challenge confronting CTE schools.** Professionals such as computer network administrators, registered nurses, and electricians can earn more as non-teachers than they can instructing students in CTE classes. Principals stated that as a result, they have been unable to expand some promising CTE programs.

Recommendations

The enormous potential for CTE to change the lives of young people is being demonstrated every day. Aviation High School students become highly compensated airline maintenance technicians and power plant mechanics. Students who complete one of the three high school Emergency Medical Technician (EMT) training programs are eligible to apply to the Fire Department's Emergency Medical Service division for its specialized EMT training. Students who complete the program at Automotive High School can become highly sought-after auto technicians.

To fully realize the potential of CTE, the following actions should be taken:

- **Increase funding to CTE schools and programs to more closely reflect actual costs.** The current four FSF CTE allocation weight categories are too broad and do not adequately account for the widely varying expenses of individual CTE schools. DOE should carefully review the actual costs of running individual CTE programs with school principals and develop additional categories of per-student funding based on real cost data.
- **Develop more private partnerships.** CTE programs are invaluable not just to students, but also to participating employers who seek a steady supply of qualified entry-level workers in fields where they are most needed. Indeed, individual schools have developed a wide array of partnerships, ranging from Federal Express, which donated a retired Boeing 727 to Aviation High School, to HSBC, which provides George Westinghouse High School with internships, job readiness training, scholarships and donations of materials. However, this process would benefit from increased resources.

Nevertheless, the Chair of the CTE Advisory Council,¹ advised Comptroller staff that there remains “enormous potential to expand private sector partnerships in all areas where there are CTE sequences.” To fully realize this potential, DOE must ensure that there is sufficient dedicated staff in Central Administration and at the schools to develop these partnerships. Dedicated staff must be knowledgeable about CTE and have expertise in specific economic sectors to work directly with schools.

- **Expand academic intervention programs for students enrolled in CTE.** Although many CTE schools already offer double periods of English, Saturday classes and after-school programs, and other forms of intervention, expanded efforts would help retain more students in danger of dropping out. CTE has been shown nationally to be a highly effective way to keep at-risk youth engaged and in school. It therefore should be a high priority to increase academic intervention funding.
- **Make five-year graduation the standard for some CTE programs and schools.** A number of principals strongly recommended that, because of the tougher new high school graduation requirements and the need to raise many students up to grade-level academic proficiency, five-year graduation should be considered standard. Schools should not be judged as “failing” as a result of their four-year graduation rates.
- **Include CTE components in the new DOE school report cards.** Indicators unique to CTE, such as whether CTE teachers are remaining current with emerging trends within their industry and a school’s success in establishing industry internships, are not now factored in the report cards. DOE is currently developing a CTE Quality Rubric to assess each CTE school and program, but there are no plans to use the results of these assessments in the report cards.
- **Establish a Learning Support Organization (LSO) exclusively for CTE schools and other schools with large CTE enrollments.** Among the important functions of a CTE LSO would be to help develop industry partnerships, identify and hire qualified CTE teachers, develop new CTE programs, and assist schools in securing State certification for their CTE programs.

The CTE Advisory Council is spearheading the development of a CTE strategic plan. This project is still in its early stages. The final strategic plan that is developed through this effort should incorporate these recommendations.

¹ According to its Mission Statement, “The Advisory Council for CTE is charged by state law with the task of advising the Department of Education on the development, administration and evaluation of policies and programs relating to Career and Technical Education.... The Council carries out its mission by bringing the employment and education communities closer together, fostering collaborations among industry, labor, and education and other non-profit professionals. Council members serve as important links between the New York City Public School System and the community, connecting the schools to external sources and information needed to ensure that Department of Education Career and Technical Education policies and programs are current and relevant.”

New York City CTE Background

New York City offers a wide array of CTE programs in fields ranging from accounting, automotive technology, and airframe mechanics, to veterinary science, vision technology, and web design at 22 CTE high schools² with nearly 28,000 students and approximately 158 comprehensive high schools and CTE training centers. All told, there are more than 500 individual CTE programs. As of January 2006, the New York State Department of Education had certified more than 56 programs in 32 high schools.

During the 2004-05 school year, there were 6,288 students in State-approved CTE programs and 103,499 students in not-yet-approved programs in both CTE and non-CTE high schools.³ New York State certification of a CTE program means that current industry-defined national and State skill standards have been met, the program has been approved by local industry representatives, there is an “articulation agreement” with a post-secondary institution, and the program has work-based learning with appropriately certified coordinators, among numerous other specific requirements. Students who enroll in State-certified CTE programs can receive a Regents Diploma with a Technical Endorsement.

Many CTE programs also lead to an industry certification such as in CISCO networking or dental assistant, or licensing, such as for Aircraft Maintenance Technician. CTE programs typically also offer opportunities to participate in internships, apprenticeships, and other real-life work experiences outside of school.

CTE combines both an academic program and “hands on” learning. Most graduates continue with two- or four-year colleges, often for more advanced work in their CTE field, although some graduates enter directly into employment.⁴

The Promise of CTE

According to a 2005 study by the research and advocacy organization Jobs for the Future, *Remaking Career and Technical Education for the 21st Century: What Role for High School Programs*, well-designed, career-focused education can “improve employment, earnings, non-academic skills [such as time management and planning], and career choices, particularly for at-risk and low-income youth.”⁵

² Alfred E. Smith CTE High School; Art & Design High School; Automotive High School; Aviation High School; Chelsea CTE High School; Clara Barton High School; Construction Trades, Engineering and Architecture High School; Computers and Technology High School; Fashion Industries High School; Food and Finance High School; George Westinghouse CTE High School; Grace Dodge CTE High School; Graphic Communication Arts High School; Jane Addams High School for Academic Careers; Queens Vocational and Technical High School; Ralph McKee CTE High School; Samuel Gompers CTE High School; Thomas A. Edison CTE High School; Transit Technology CTE High School; W.E. Grady CTE High School; William Maxwell CTE High School. Harry Van Arsdale High School recently closed.

³ Source: New York State Department of Education, Memorandum to the EMSC-VESID Committee from Jean C. Stevens on Regents Policy on Career and Technical Education, May 30, 2006.

⁴ The annual report for 2005 from DOE to the New York State Department of Education on the status of students who attended one of the 45 NYSED-certified DOE CTE programs showed that 68.3 percent of the 1,426 students who completed a CTE sequence went on to post-secondary education and 8.6 percent found employment in a field related to their CTE courses. The status of 17.7 percent of these “completers” was unknown.

⁵ Kazis, Richard. *Remaking Career and Technical Education for the 21st Century: What Role for High School Programs?* Jobs for the Future, April 2005, p. 16.

Many studies have shown that vocational and technical programs help keep students in school. Although CTE programs require more coursework than standard academic programs, research has found no evidence of a negative impact on participants' academic or educational progress. Indeed, a recent Education Resources Information Center brief found that "CTE actually does play a role in reducing dropouts, especially among students who are at high risk of dropping out."⁶ Another study, by John Bishop and Ferran Mane,⁷ confirmed this phenomenon internationally and noted the positive impact on completion rates as well. In a comparison of 19 industrialized nations, an increase in the share of secondary students enrolled in vocational programs showed a positive correlation to increased high school graduation rates and in the percentage of 15- to 19-year-olds enrolled in school.

The National Assessment of Vocational Education found that for students who do not continue on to college, taking vocational courses in high school has a significant short- to mid-run labor market payoff in terms of annual earnings, particularly for low-income students and those who are most at risk.⁸ Strikingly, students who secured their first jobs after high school through their vocational teachers or programs had 17 percent higher earnings 10 years after graduation when compared to students who find their own jobs, according to one study.⁹

CTE can lead to solid, middle-class employment

CTE programs help students with job readiness and provide a direct connection to career fields and individual employers. For students who are not college-bound, graduation with a CTE endorsement can lead directly to a good-paying job. As one principal observed, "*There are plenty of students who will not go to college or who will go to college way down the road. Many of these trades allow students to access decent-paying positions upon graduation following apprenticeships.*"

CTE helps keep students from dropping out and increases graduation rates

CTE high school students are more likely to come from low-income families than New York City high school students overall. As reported by the New York City Independent Budget Office in a Fiscal Brief on vocational education issued in August 2007, in 2005, "64.2 percent of students in the vocational high schools were eligible for free lunch, 13 percentage points more than students across all New York City schools."¹⁰ Although a positive correlation between low income and a propensity to drop out has been established, in 2006, the citywide dropout rate was 14.6 percent¹¹ and for the 19 CTE schools,¹² it was four

⁶ Wonacott, M. *Dropouts and Career and Technical Education*. Educational Resources Information Center, Myths and Realities Series No. 23, 2002, p.2

⁷ Bishop, John H; Ferran, Mane, "The Impacts of Career-Technical Education on High School Labor Market Success," *Economics of Education Review*. 23. pp. 381-402, August 2004.

⁸ Remaking Career and Technical Education, pps.2, 17.

⁹ Rosenbaum, James E. "It's Time To Tell the Kids: If You Don't Do Well in High School, You Won't Do Well in College (or on the Job)," *American Educator*, Spring 2004.

¹⁰ The IBO also reported that students at CTE schools are also more likely to be non-white and have a higher proportion of male students than the school system as a whole.

¹¹ Source: DOE, *Class of 2006 Four-Year Longitudinal Report*.

¹² Not including three new small CTE high schools, Food and Finance, Construction Trades, and Computers and Technology, for which the *Class of 2006 Four-Year Longitudinal Report* does not yet report dropout rates.

percentage points lower, 10.6 percent.¹³ Moreover, in 2005, at seven CTE high schools, the percentage of entering students who were over-age exceeded the citywide average of 29.9 percent by at least nine percentage points; among the common reasons students enter high school over-age are that they were retained in one or more earlier grades or they moved to New York from another country. This is a clear indication of the enormous educational challenges some CTE schools face.

Yet despite the tougher Regents graduation requirements and the demands of taking classes in both academics and CTE, the overall graduation rate for CTE schools in 2006 was slightly higher than citywide—59.7 percent citywide and 61.9 percent for CTE schools. The 2006 dropout and graduation rates for the CTE schools are shown in the table below. The enormous disparities among schools in student household income and student academic proficiency when entering 9th grade contributed to the wide variations seen in graduation and dropout rates.

CTE high school*	Dropout %	Four-year graduation %
Alfred E. Smith	18.9	61.7
Art & Design	1.3	75.1
Automotive	14.8	47.7
Aviation	3.1	78.3
Chelsea	16.2	51.8
Clara Barton	5.2	74.9
Fashion Industries	4.8	80.3
George Westinghouse	6.5	71.9
Grace Dodge	18.9	50.6
Graphic Communication Arts	26.8	41.1
Harry Van Arsdale	13.2	52.5
Jane Addams	10.0	59.2
Queens Vocational	14.2	52.0
Ralph McKee	6.3	75.7
Samuel Gompers	17.4	58.9
Thomas Edison	2.4	92.3
Transit Tech	5.3	72.2
W.E. Grady	14.4	49.4
William Maxwell	16.8	43.7

* Does not include three new small CTE schools for which data is not yet available.

Principals of schools where comparatively large proportions of students are from low-income families advised Comptroller staff that CTE programs are important in maintaining lower dropout rates. One principal stated, “*We have a lot of students who have major academic remediation needs...Drop-out numbers are still too high but they are improving and, I think, the CTE piece is a tool for keeping kids in school.*” Another principal stated, “*Good CTE programs are major motivators to get students to stay in school and to prepare them for the future.*”

CTE raises the qualifications of the entering workforce

CTE also fills a critical need of the business community for qualified, entry-level employees. By providing trained workers in areas of labor market need, from nursing assistants to office computer network maintainers, a robust CTE program can become a vital contributor to New York City’s economy.

¹³ 561 students dropped out and there were 5,254 students in the cohort.

New York City CTE Challenges

Funding and equipment

CTE schools are hampered by under-funding.

CTE schools are typically more expensive to operate than regular schools because they require special equipment, materials, and additional physical space. As one of the principals interviewed by Comptroller staff noted, *“What we do is expensive, it’s dual education.”* Professional development can cost more for CTE teachers than regular academic teachers because they must keep current with rapid technology changes in their fields. Class sizes generally must be kept smaller in CTE sequences and more teachers are required. There also can be substantial costs for bringing a program up to the strict standards required for State Education Department CTE certification. There are also many unique small expenses that add up to significant amounts, including expenses for administering special examinations, apprenticeship and internship programs, and Project LEARN (Link Employment and Responsibility Now), where CTE students work after school and over the summer at employers in their field of study with subsidized wages. A principal noted that textbooks for CTE courses are generally more expensive than for regular academic classes.

Yet, as reported in a Fiscal Brief issued by the New York City Independent Budget Office (IBO) in August 2007, *Are City Vocational High Schools Being Left Behind?*, an analysis of 2005 School Based Expenditure Report (SBER) data found that “total per capita funding tended to be lower in CTE schools.”¹⁴ The IBO estimated that City-funded spending across all high schools averaged \$11,326, while CTE schools spent \$10,575 per pupil.¹⁵

One CTE principal noted that his/her school has 23 CTE teachers—*“teachers that do not exist in the academic comprehensive high schools and for which we are not fully compensated.”* Another principal explained that in order to receive industry certification, his/her school has to offer 14 additional credits per student, *“but we get no money for this.”* And a third principal said, *“We have to hire more teachers than regular high schools and students take one more class per day as well. Our classes are smaller, and students in our school require more guidance and more support services given all the academic and other needs they enter with.”*

The principal of Automotive High School observed,

- *“Our consumables are insanely expensive here,”* adding, *“Students must be taught on the automobiles of tomorrow, not yesterday, and with the latest diagnostic equipment that is upgraded every year. For instance, it costs \$60,000 to buy an alignment rack.”*

¹⁴ The IBO Fiscal Brief stated that per-student spending tended to be lower at vocational high schools “in part because of a change in 2004 in the way the city allocated funding to the schools” and, “Base allocation losses sustained in 2004 likely contribute to persistent lower per-capita spending in CTE schools.”

¹⁵ This data was for “the most comprehensive measurement of spending, including distributing a portion of central administrative costs to each school.” IBO also found a “similar disparity” in spending on “classroom instruction” as measured with 2005 SBER data.

Principals said that chronic under-funding has resulted in CTE facilities, materials and equipment that too often are inadequate and outmoded. Ultimately, inadequate funding compromises CTE program quality, the credibility and utility of a CTE endorsement on a diploma, and ultimately employers' interest in hiring CTE program graduates.

Additional comments about the inadequacy of funding included the following. Each comment was by a different principal. (See the Appendix for additional observations.)

- *“Funding and equipment are both huge [issues]. As you know, planned obsolescence means that you periodically need to upgrade computers. The same goes for electronics equipment. If we are going to satisfy 21st century workforce needs, we need to train students on modern equipment. We just are not able to do that right now adequately.”*
- *“I have to be truthful and tell you that we barely have enough money to make ends meet. These programs are expensive and we are scraping by with a lot of everyone's leftovers. We need to upgrade equipment to really meet the needs of today's technology.”*
- *“The most important issue facing CTE programs is maintaining currency of the material being taught in a constantly changing world of technology. Funding is not nearly enough to maintain that currency. If it were not for the donations made to us by outside agencies, our programs would be completely useless. However, despite the fact that we do receive donations we are still at least two generations behind industry.”*

Another funding concern of principals' is the “red tape” involved in spending available funds on the specialized equipment needed by some CTE programs. The principal of Aviation High School stated, *“We are a technology school—students are repairing equipment, and ordering equipment is an absolute nightmare. The red tape and bureaucracy are endless. Our engines must run on jet fuel and it is very hard to get.”* Another principal said, *“We need specialized supplies not readily available through the DOE vendors and/or the new improved items are not approved by the DOE. We often are restricted to buy outdated items for our . . . department because the new models haven't been approved for purchase.”*

In addition, two principals expressed concern about the unanticipated expiration of Smaller Learning Communities grants in the 2007-2008 school year. These grants were used to create smaller, specialized academies within some schools that were geared toward specific themes or careers, as well as to provide small learning centers for necessary remediation, among other projects. As one principal noted, *“SLC funding for the 2007-2008 school year will not be available. Unfortunately, we have programmed according to the SLC guidelines and will not be supplemented for the additional costs that result from this structure.”* The principal noted that the school had already programmed for SLC coordinators, which is *“costly,”* and *“as a result of the grant not being awarded to New York City schools, we are forced to pay for this through our already depleted tax levy funds.”*

VATEA funding is modest, but important; it recently was reduced.

CTE programs are eligible for additional funding under the U.S. Vocational and Technical Education Act (VATEA) of 1998 (reauthorized as the Carl D. Perkins Career and Technical Education Improvement Act of 2006). In Fiscal Year 2008, \$12.7 million in VATEA funding was distributed to CTE programs in both CTE and non-CTE high schools, down from \$14.0 million in 2007. VATEA funding is also being shared among some of the expanding number of new small schools, including the Brooklyn Studio School, Frank Sinatra School, Life Academy High School for Film and Music, and High School for Legal Studies.

In Fiscal Year 2008, VATEA funding comprises only a small fraction of CTE high school budgets, ranging from 1.4 percent to 5.8 percent. VATEA grants are limited to a three-year duration and permissible uses for the funds are limited. Nevertheless, three principals said that without this supplemental funding, they would be severely challenged to continue operating. Several principals reported that they are suffering significant decreases in VATEA funding in the current year.

The new Fair Student Funding (FSF) system does not adequately address CTE needs.

Beginning with the 2007-08 school budgets, DOE began to implement its new Fair Student Funding (FSF) system for allocating direct instructional funds from the City and State. The prior funding allocation system was widely criticized for failing to account for each school's actual needs and many schools with especially large numbers of low-achieving students or students with other special needs were being underfunded compared to other schools.

The FSF system allocates a fixed "foundation" allocation of \$200,000 for each school, essentially to acknowledge that there are certain costs that are fixed regardless of the size of the school. In addition to this amount, schools receive a weighted amount for each student. A weight of 1.0 equals \$3,788 in funding and high schools are weighted 1.03, or \$3,902 per student, to reflect these grades' higher costs.

Under FSF, additional weighted funding is provided for each student based on individual needs, such as requiring academic intervention (a weight of between 0.24 and 0.50 depending on grade and student proficiency) or being an English Language Learner (a weight of 0.40 to 0.50 depending on grade). Thus, school budgets more accurately reflect the higher costs of educating these students.

Portfolio schools include the specialized academic high schools (schools for which admission is based on the student's score on the Specialized High School Admission Test), audition schools, transfer schools (schools that enroll students who dropped out and have returned), and CTE schools. In recognition of their special expenses, portfolio schools receive an additional per-student allocation.

The additional per-student allocation for CTE schools is weighted based on the type of CTE program in which the student is enrolled. There are four separate CTE funding weights for students enrolled in CTE: "nursing" (0.26, or \$967¹⁶), "health, trade, technical" (0.17, or \$629), "business" (0.12, or \$451), and "home economics, arts" (0.05, or \$193).¹⁷

¹⁶ Relatively few programs are funded at this highest level. There are professional nursing programs at only four schools.

¹⁷ When these weights are multiplied by \$3,788 (weight of 1.0), the product does not equal the dollar amounts given here, e.g. a weight of 0.17 produces a dollar amount of \$644, not \$629 as shown above, and the weight of 0.12 produces a dollar amount of \$455, not \$451. These figures were obtained from the IBO Fiscal Brief, *New Funding Formula Seeks to Alter School Budget Disparities* (October 2007). The IBO obtained these figures directly from the DOE and they are as they appeared on the DOE document.

When Comptroller staff asked DOE officials and principals to describe how these needs-based weights were determined, they were advised that a number of alternative computations were performed “in house” under the Managing Director for Resource Allocation, and that during Spring 2007 an advisory group met to review and discuss these computations. In addition, one of the principals interviewed by Comptroller staff recalls attending a meeting in which s/he was consulted about the cost of their programs.

Nevertheless, when principals were asked if they believe FSF will provide their schools with sufficient funding, they replied it will not. Two different principals termed the CTE weightings “arbitrary” and another principal explained, “*We get some of the lowest functioning students and then we get them a diploma and usually an industrial certification—frequently 12 to 18 credits above the rest of the schools,*” but “*we are not funded for this extra class time.*” This principal acknowledged receiving additional weighted per-student funding for English Language Learners and Special Education students. Another principal responded, “*We do get the extra dollars per student, but this is not sufficient to cover the expense of running a true 12- to 18-credit sequence in a trade or technical area, with the extra teachers required and the extra periods of instruction per day.*” And another principal told Comptroller staff:

- “*We have spent countless hours trying to decipher the FSF formula. The more in depth we go into obtaining where and how the numbers are produced for our own budget, the more we find areas of possible shortages or errors in calculations. In addition, this takes valuable time, of which we have a short supply—time better spent on instruction and professional development. To date, FSF has not been favorable to us. Budget analysts are not very familiar with the CTE funding variables. We often find ourselves having to justify data and statistics. This becomes troublesome when the funding needed to run effective programs is looked at as unnecessary.*”

School Budget Overviews, available at the DOE web site, indicate the amount of money each school gains or loses under the new FSF allocation system compared to the previous system.¹⁸ Most CTE schools receive more under FSF in 2007-08 than under the old formula, primarily because they enrolled large numbers of low-achieving, ELL and Special Education students. Nevertheless, the principal of a CTE school that receives significantly more money under FSF told Comptroller staff that s/he remains very concerned about shortfalls: “*I have no idea how they were developed but the weights for CTE students cannot compensate for our funding reductions in other areas. It is not working out in our favor.*”

Under FSF, a number of CTE schools are considered to be “over-funded” and therefore would receive less funding than under the old allocation formula, including Alfred E. Smith, Aviation, Fashion Industries, George Westinghouse, Grace Dodge, Ralph McKee, and Thomas Edison. (At least until 2010, all DOE schools are being “held harmless” for any reductions that result from implementing the FSF formula.) Also, in addition to schools being held harmless for FSF allocation reductions, all schools are receiving Children First supplemental allocations, and “allocations not consolidated.”¹⁹

¹⁸ As DOE transitions to the FSF system for the 2007-08 school year, schools that receive more money under FSF than under the prior system are not receiving their entire increase. For 2007-08, only, their increases are being limited to 55 percent of the difference between what they are entitled to under FSF and what they would have received had the prior system been continued.

¹⁹ These are funding sources that are not under the purview of FSF allocation, mainly categorical funding such as textbooks, paraprofessionals, and special education related services. Schools that received these moneys before will continue to do so. FSF does not impact the distribution of these dollars.

Creating more private sector partnerships

Funding and equipment shortages could be mitigated by strengthening and expanding partnerships between CTE schools and the private sector. Increased private sector participation also could strengthen internship and apprenticeship programs. Industry participation is critical to keep programs current and relevant.

At most CTE schools, the principal, an assistant principal, or a specially assigned teacher cultivates industry partnerships that can lead to internships, part-time jobs in 11th or 12th grade, and full-time jobs upon graduation. Principals reported that they have received little or no assistance from DOE Central Administration in developing partnerships. The principal of one CTE school that has been successful in developing a number of partnerships told the Comptroller staff, “*Tweed [Central Administration] has not fed us one single partnership, we have developed them all on our own.*” Another principal stated, “*Most of our internship partners have come from me and my staff—the only citywide partnerships we really utilize are Otherwise, our partners are all home-grown—we have made the phone calls, the visits, the emails—whatever it takes to bring industry in for our students.*” Another principal stated that he had received no help from Central Administration with developing internships “*for years.*”

Another principal commented, “*DOE has no concept of what an industrial partnership is about for a CTE school. PENCIL [Public Education Needs Civic Involvement in Learning] sponsors the Principal for a Day program, which brings corporate money into New York City public schools. This is important, I know, but we need industry-specific partnerships and DOE doesn’t understand this.*”

Principals said that the CTE Advisory Council has been helpful in facilitating new partnerships and that Advisory Council meetings are a productive forum to network with prospective industrial partners.

To be sure, individual CTE schools have established numerous productive partnerships with companies, hospitals, and non-profit organizations. Examples include:

- **Automotive High School.** Toyota, Mercedes, Chrysler, Pontiac and other car companies have donated equipment and money to Automotive High School and hired its students. In addition, Automotive High has arranged with dealerships and auto repair shops throughout Brooklyn and Queens for internships at minimum wage to students in good standing at the end of 11th grade.
- **Aviation High School.** Federal Express donated a retired Boeing 727 airliner to Aviation High School. Additional Aviation High School partners include several airlines—British Airways, American Airlines, Evergreen International, Delta Airlines, and Jet Blue—and the Port Authority of NY and NJ, Pratt and Whitney, and the International Association of Machinists.
- **George Westinghouse High School.** Westinghouse High School has formed a partnership with HSBC. This partnership has led to scholarships, job-readiness training, internships, materials, professional assistance for parents, and mentoring.

Westinghouse also for many years has had a Vision Care Technology Council, with representatives of the industry and the New York City College of Technology as members. The Council has worked with the school on curricular changes and provided materials and supplies.

The school has worked with the Metropolitan Transportation Authority and Construction Skills 2000 to develop apprenticeship positions in its Electrical Installation Program.

Most of the other CTE schools have also established partnerships, from the Fashion Industries High School partnership with the Museum of Modern Art and Bloomingdale's, to William Maxwell CTE High School's partnerships with hospitals and other healthcare facilities. Still, CTE Advisory Council Chair Stanley Schair believes there is "enormous potential in all of the CTE sequence subjects" for more private sector partnerships. When asked, principals agreed with this and said that more must be done to expand private sector partnerships:

- *"We can do a better job here and it is a huge priority to build more partnerships with industry as well as higher ed and government.... We really want to increase our internship component. It is not sufficient yet and needs to be strengthened."*
- *"It [relationships with employers] has been okay but I think we can do better.... Our business sequence has been the most successful in this respect and we do have the Cisco industry tie-in that has been great. I would like, however, to greatly step up our internship program."*
- *"More private and corporate sponsorship is vital to the life of CTE programs."*

Project LEARN (Link Employment and Responsibility Now) is one of the CTE programs that has been widely viewed as highly successful. A principal explained that under Project LEARN, *"the City pays for half the stipend for seven-hour-a-week internships and the employer pays the rest."*²⁰ The principal stated that Project LEARN *"was a way to create an incentive for employers who might not have the money or inclination to pay beginning students,"* but also added, *"it has been cut back."*

Keeping at-risk youth in school

A key challenge facing New York City public high schools is keeping at-risk youth in school. These students typically are those who enroll in high school lacking the academic skills required to make adequate progress and ultimately to graduate. These are students who scored Level 1 or Level 2, the two lowest of the four possible scores on the annual New York State standardized assessment tests in English Language Arts and Math. Many students who enter high school with only a Level 1 or 2 score fall further behind in the 9th grade and drop out after they reach 16 years of age.

Many CTE schools have high proportions of students from low-income families, students who were over-age when enrolling, Special Education students, and English Language Learners. For example, at William Maxwell CTE High School School, during the 2005-06 year, 38.6 percent of entering 9th and 10th graders were overage for their grade, compared with 29.9 percent citywide, and only 13.6 percent of

²⁰ According to the DOE website, "LEARN is a program for high school juniors and seniors that supports after school and summer jobs for students. Students are recruited for the LEARN program based upon their participation in Career and Technical Education (CTE) Programs at the home schools. School coordinators distribute application packets, develop jobs related to the CTE courses the students are studying, and make job placement assignments. Students may work fifteen hours per week during the school year and thirty hours per week for a six week summer program. The rate of pay is the current minimum wage. LEARN students represent approximately 100 high schools and programs." Student study areas range from Automotive Repair and Accounting to Preservation Arts and Optical Mechanics.

Maxwell students met standards on their State English Language Arts test, compared to 32.7 percent citywide, according to the school's 2005-06 Annual Report.

At the Fort Totten Emergency Medical Technician (EMT) training program—one of the three high school EMT training programs—students who are over-age or under-credited have found a reason to stay in school. Over 45 recent graduates currently work as City-employed EMTs and three have achieved paramedic status. For the 2006-2007 school year, 24 12th graders, drawn almost entirely from communities of color, started the dual academic and EMT program; of those 24, 80 percent completed the program and 100 percent of those who completed the program passed the State EMT examination and also obtained either a General Equivalency Degree (GED) or a high school diploma.²¹

Teachers in this program take great pride in the accomplishments of their students. One teacher with decades of experience described the effect of the program as nothing short of transformative, noting that the students' attitudes and performances are significantly improved by the end of the program. The work also increases teachers' satisfaction with their own jobs, and one told Comptroller staff: "I'm the happiest teacher in the system. If things continue as they are, I'm not retiring."

Some CTE schools already conduct extensive intervention through double periods of English in the 9th grade, and Saturday and after-school "Twilight Academy" classes. If the promise of CTE is to be fully realized, at-risk youth will need even more academic intervention, and this intervention should be fully integrated into the CTE curricula. But principals of schools with many at-risk youth told Comptroller staff they can barely afford the academic intervention programs they already offer.

New, tougher graduation requirements

Many academically challenged students already experience difficulty completing a CTE program and graduating in four years. A significant number of students entering many CTE programs already are over-age and under-credited. The principal of a CTE high school where the four-year graduation rate remains below the citywide average observed, "*Many of our students are way behind in their skills. We tried doing an extended day and found it was too much for students. Students need to taste success in ninth grade, otherwise we lose them. Students often are coming here at least two years behind in math and science.*"

New York State's new, tougher high school graduation requirements are only heightening the challenge of retaining at-risk students. Starting with the class entering in 2007, students will be required to pass five Regents exams, with a score of at least 65 on four exams and 55 on the other. This represents an increase from a required score of 65 on three exams (for the 2006 entering class), two exams (for the 2005 entering class) and no exams (in 2002 a score of at least 55 was required on only one exam). Students will also still be expected to complete CTE course sequences of 10 to 18 credits depending on the program. Several principals said that it will be impossible for many of their students to complete these credits in addition to the academic credits needed to pass five Regents exams within four years and, as a result, their CTE programs may be compromised, such as by reducing the number of CTE credits students take.

²¹ The starting base salary for a City-employed EMT is currently just over \$27,000. Students who pass the State examination and obtain the appropriate certification are also eligible to work in ambulances operated by the voluntary hospitals, where starting salaries are higher. These statistics were provided by the program director to Comptroller staff.

Attracting and Retaining Qualified Faculty

Principals identified difficulty recruiting qualified CTE teachers as one of their most urgent concerns. Many professionals can earn far more as non-teachers than as instructors in the NYC public school system.

- *“There are simply not enough trained teachers in these CTE fields and because of No Child Left Behind, they all have to be certified. It will be difficult to replace older teachers when they retire. This is a serious concern for us and something that must be addressed.”*
- *“Finding a continuing pool of trained teachers may be our greatest challenge.”*
- *“Many of us hit the pavement and truly try our best to find people who can work with our students. What is sad is that if you do not have qualified teachers, you have to sometimes close down your program.”*
- *“Finding trained teachers in many of our specialty areas is supremely difficult. We want to expand our computer graphics program and we have found it very hard to identify enough quality instructors. We can only expand our CTE offerings if we have instructors to fit the need.”*

DOE and school districts across the country have had difficulty hiring qualified high school math and science teachers, but hiring qualified CTE teachers has proven to be even harder. There is a special challenge with hiring teachers who have current content knowledge. Principals reported that the primary way they retain new CTE teachers is through the Success Via Apprenticeship Program (developed to address the shortage of vocational instructors through apprenticeships), but the number of graduates from this program has been limited.

Doing more with less

The Department of Education has slashed from 27 to 10 the number of staff assigned to CTE. At a meeting of the CTE Advisory Council in October, 2007, the DOE Senior Executive for Policy and Sustainability said that this reduction will make CTE administration “more agile.” He added that CTE principals will now be given even more responsibility. Among those let go were the 10 CTE Regional Liaisons, one for each of the former DOE Regions. The administrators of schools with nearly 400 individual CTE programs are now left with only three “cluster leaders” as points of contact with Central Administration.

Principals interviewed by Comptroller staff expressed considerable concern about the impact of this sharp staffing reduction. One principal commented,

- *“I don’t understand how they think this will all be done. This doing more with less is baffling me. People who were doing important tasks were just dismissed. It used to be that regional liaisons would actually come to the school, talk with you, and help with your VATEA application so that it fit your needs as much as possible. And there were two central staff who assisted with the state approval process. This is a lot of work and it was a great help to have these folks to assist.... It is completely unrealistic.”*

Another principal said,

- *“It is very frustrating. Every one of us is expected to do more with less. I have no idea where the people are who helped us last year. What these cuts mean is that there is little external support.”*

Many schools require extensive assistance when applying for State certification. State certification is important because, as one principal explained, *“It shows that the program has certain standards, and students see that the State takes what they are doing seriously, I think it is motivational force.”* The certification process is very complex and time-consuming. It includes establishment of a “self-study” team, bringing together partners to review a program and propose modifications, review of the self-study report by an external review committee, development of a curriculum review “crosswalk,” and arranging for required postsecondary articulation agreements with colleges, apprenticeship programs, and other postsecondary programs. Central Administration CTE staff members who were dismissed assisted principals with this process. Currently, most CTE programs are not yet State-certified. Eliminating staff who helped with this function will make it harder for principals to secure certification for their CTE programs.

Recommendations

In the 1980s, changes in the national economy increasingly required workers to obtain higher levels of education. At the same time, studies indicated that the U.S. education system was falling behind those of our major competitors. Public education officials were spurred to place renewed emphasis on increasing academic standards. The numbers of students enrolled in traditional “vocational education” declined as school officials and teachers more strongly emphasized college preparation.

Today, however, the global economy has created a greater demand for even more sophisticated skills. In the information economy, employers in an expanding array of fields are demanding ever more highly skilled technical workers—workers who have first-rate technical as well as academic skills. To become a mechanic, an electrician, or a medical assistant demands greater technical literacy than ever before.

CTE can and should address these new needs. Unfortunately, however, CTE is still too often viewed as second-class education, deserving of merely second-class support. Only this year has DOE begun to develop a CTE strategic plan.

The Office of the Comptroller recommends the following:

- **Ensure that the Fair Student Funding formula more closely reflects the actual costs of CTE programs.** All principals of CTE schools and non-CTE schools with large CTE components should be closely involved in revising the current CTE allocation weights.
- **Provide schools with more assistance to develop partnerships with the private and non-profit sectors.** This can be accomplished by sending qualified Central Administration staff to the schools to assist and/or by increasing the CTE weight in the new FSF allocation formula to cover the cost of schools paying for teachers or specially hired staff to spend more time on this. In addition, one of the principals told Comptroller staff that DOE should *“cultivate more corporate partners for funding CTE centrally.”*

Partnerships are crucial to the success of CTE. Students understand that if they complete a CTE sequence there will be a strong chance of securing a good job. They will be encouraged to stay in school and meet CTE requirements. Partnerships can also help provide state-of-the-art equipment and ensure that a CTE program remains current and relevant.

- **Ensure there is sufficient Central Administration staff to properly support administrators of schools with CTE programs**, including working with new and potential partners and establishing business and industry consultant committees, assisting with grant applications, and helping with myriad other tasks unique to CTE. Regarding support for partnerships, after reducing CTE staff by 17, DOE recently hired one new staff member and an assistant in the Office of Portfolio Development to help develop new partnerships. However, given the potential for more partnerships, there should be sufficient CTE staff, each one with identified industry specialties, to help with partnership building; clearly, one or two individuals cannot be expected to be sufficiently knowledgeable about all industries where partnerships exist or could be expanded. Moreover, as discussed earlier, cutbacks in CTE staffing in Central Administration have put even more responsibilities on the shoulders of individual school administrators, leaving them less time for partnership building.
- **Provide additional academic intervention to CTE students who would benefit.** CTE courses increasingly require high-level math, reading and writing skills. The main reason many CTE enrollees do not complete a CTE sequence is because they were several grades behind in reading and math when they entered high school and could not catch up quickly enough to continue with CTE demands after 9th grade. Several CTE high school principals stated that it is especially important to address academic deficiencies in the 9th grade because students who are not academically proficient at that point will fall even further behind as they begin their main CTE courses in 10th grade.

The inability of many students to perform at grade level is a key issue facing high schools citywide. And there already exist an array of intervention services at CTE schools. However, the case for undertaking additional academic intervention efforts for CTE students is compelling. As the principal of a CTE school with large numbers of entering students with low academic proficiency said: *“If we get them through the 9th grade and into 10th, we can graduate them. We lose most of our dropouts between 9th and 10th grade.”* There are very real benefits for students who, because they received effective academic intervention, stay in school, complete CTE requirements, and receive an invaluable industry certification.

- **Implement a five-year graduation standard for some CTE schools and programs, in particular those that enroll large numbers of students who enter with low academic proficiency.** Several principals proposed a standard five-year graduation, in response to the need for additional academic intervention, the tougher Regents graduation requirements, and the requirement to take courses in CTE. Two principals who commented on this stated:
 - *“Vocational students should be given five years to graduate—an extra year to complete their major as well as all other requirements.... We cannot graduate students in four years. It is not realistic to give them their academic program and their CTE courses given that they enter behind in a number of areas.”*

- *“Students who go to CTE schools need to complete all academic classes and pass all Regents exams the same as a regular academic high school. In addition, to get industry certification, they must get 10-18 credits in CTE. Trying to accomplish this feat in four years is very difficult for most students who come to high school with less than great reading and math skills. I suggest a five-year graduation plan for CTE students in CTE schools. Obviously, this would require additional funding, but would make sense in that CTE schools would not suffer the burden of being classified as failing when not enough students graduate in four years but many more are able to satisfy diploma requirements in five years.”*
- **Establish a Learning Support Organization exclusively available to CTE schools and other schools with large CTE enrollments.** Learning Support Organizations (LSOs) are one of the options for administrative and professional support available to schools under the most recent DOE reorganization. None of the four LSOs created, however, is particularly conversant with CTE concerns. To help build partnerships, a CTE LSO would include staff experts in CTE and key CTE-relevant industries. It would also help schools recruit CTE faculty, assist with applying for VATEA (federal CTE) funding and State CTE program certification, obtain specialized supplies, and numerous other important functions. One of the principals interviewed by Comptroller staff stated, *“We need our own superintendent or SSO [school support organization] who really gets CTE. Then we would have a real advocate.”*
- **Address the CTE teacher shortage.** One approach is for the State Education Department to provide persons who are experienced in an industry a provisional license to teach and several years, perhaps up to five, to obtain the needed education credits to be considered “highly qualified” as required under the federal No Child Left Behind law. Another approach is to secure private money, perhaps through a foundation or partnering corporation, and, through collective bargaining, to allow supplemental compensation to CTE teachers in fields where teachers could earn substantially more outside of the classroom.
- **Track CTE students one and two years after graduation.** Because this is not currently being done, it is not known—other than anecdotally—which programs are the most successful in terms of college attendance, job placement, and earnings. Nor is there any central staff to study or evaluate best practices in CTE nationwide with a view to improving DOE CTE programs. Employers should also be surveyed about the quality of the preparation their employees received from the CTE program.
- **Do more to change the negative perception many people have of CTE.** One CTE principal emailed the Office of the Comptroller his/her concerns about the consequences of CTE often being viewed negatively and not taken seriously enough:
 - *“CTE is unfortunately still looked upon as the old ‘vocational’—if you can’t write or read you can do something with your hands. The student [high school] selection process does NOT take into account who and what we are.... Admissions doesn’t see it, the DOE doesn’t see it. If they did we would be having a conversation as to how we could be working with more kids who REALLY want this rather than the kids that ‘end up’ here.”*

In fact, CTE enhances academic preparation at the same time as it gives students real work skills. And CTE program academics are becoming increasingly rigorous. CTE schools should be viewed in the same light as DOE’s comprehensive, specialized, and audition high schools. Parents need to be better

informed of what CTE has to offer and told that CTE schools have higher graduation rates overall. If we do this, CTE will attract even larger numbers of students who are academically proficient when they enter the program and still more employers will also be drawn to these programs.

Best Practices

The CTE Advisory Council Chair told Comptroller staff, “We have some unbelievably great beginnings with some of our schools. Why shouldn’t our CTE system be the model for the entire country?” It should and it can. New York State has been taking steps in recent years to improve CTE programs. Still, there are models across the country at the state and local levels that could serve as an inspiration for DOE to improve CTE locally:

- After a statewide review of its high school CTE programs, Maryland identified a specific list of career pathways that the state will support. The state provides **financial incentives if these programs create a partnership with appropriate industry associations or particular firms**. Maryland also emphasizes continuous improvement by collecting and analyzing student performance data. **On a regular basis, its CTE schools identify the lowest performing 20 percent of their programs and develop a plan to strengthen or possibly discontinue the program**. The research and advocacy organization Jobs for the Future, in citing the program as a model, notes that higher academic standards have led enrollments to rise and more students to take coursework designed to prepare them for college. In turn, the state has noted that the improvements have drawn more employers and business leaders to the programs.
- Virginia, another leader in CTE, has expanded its target enrollment to students who are out-of-school, **created an agreement with students to underwrite the cost of one semester at community college to obtain industry certification**, and **established special academies to increase the number of teachers qualified to lead CTE classes**.
- The Academy of Finance at the William T. Dwyer High School in Palm Beach Gardens has a **Mentor Program** to enhance the opportunities for students to successfully achieve academic, career, and life goals.
- The Seattle Public Schools program called “Involving Girls Now in Technology Evolution” (IGNITE) **encourages high school females to enter technology-based professions**. According to the Association for Career and Technical Education, in its listing of promising CTE practices and programs from across the nation, the goals for the program are “to expose teenage girls to the depth of opportunities in technology careers, dispel stereotypes surrounding technology by networking teenagers with professionals, and provide an ongoing opportunity for girls to interact with women in the industry, including job shadowing, internships and mentoring.” After six years of IGNITE, “Seattle schools report 50 percent of high school technology classes are filled with girls, when they used to be comprised of only a few.”

Conclusion

As the economy becomes increasingly global, New York City faces greater challenges to its standing as an epicenter of business and finance. To help New York City retain this status, every student who enters high school today will need to be equipped with the education needed to be competitive in the workforce of tomorrow. For many students, the best way to do this is through a traditional academic program. For others, the answer is to obtain first-rate academic as well as technical skills through a CTE program.

The best CTE programs—those with academic rigor, close integration of academic and technical coursework, connections between the high school and postsecondary institutions, and that are highly responsive to the needs of employers—help to make learning more meaningful and engaging. The economic futures of our young people and the future strength of New York City’s economy may well depend on our success in preparing students through both traditional academic and the highest quality academic-technical programs. ■

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Appendix

*Additional observations by principals**

Funding—generally

“Money is always an issue when you are trying to develop up-to-date career programs. Our electrical system needs work, much of our equipment is deteriorating. Both the ** program and the ** program need refurbishment.”

“First, and I know that we are not supposed to focus on money, but money is an issue. Staff who are experienced and dedicated to specialty areas and trades are expensive. Our schools do not receive allocations to cover the cost of these programs, but students love these programs. These programs help make the connection between academics and real life experiences. Also, students who have no interest in college or who need to enter the world of work immediately, have a foundation and many of them do very well.”

“The main purpose of our CTE programs is to give our students marketable skills. In order to do this effectively, it is imperative that we keep in line with industry standards. This requires us to constantly develop, modify and upgrade instruction and technology. This venture is quite costly.... We have employed a staff member to focus solely on handling the work-based component of the CTE programs. The cost of the national technical assessments required by the State for the approved programs has become an issue.”

Funding—Fair Student Funding formula

“FSF doesn’t help us. It feels pretty arbitrarily determined.”

“We are like the poor stepchildren and . . . it does not appear that we will get any more dollars from this new funding system.”

“We were consulted about the [FSF] weighting. They did ask us but ultimately it felt pretty arbitrary.... DOE needs to look at the true picture. It costs more to run our programs and there needs to be other funding pots available to us. We seem to have to fight to bring our case to the table.”

Funding—VATEA

“We got more [VATEA] money last year but much less this year. That means less per session money, fewer supplies, less tutoring available. We had to cut our ** program as a result and many of our teachers are voluntarily taking on extra work to make up for the loss.... Teachers are staying late without getting compensated. I know they all say that VATEA is supplemental, but we depend on it for many things, for a lot of our operating budget. CTE is very expensive. Even the textbooks cost more than ordinary academic texts.”

“What is difficult is how dependent we are on VATEA. It is supposed to be supplemental, but without it we would have to close.”

“The problem is also that Perkins [VATEA] dollars can go to theme-based schools and to academic comprehensive schools with very small CTE programs. It is not divided evenly. There is not enough money to go around for the larger schools. In order to get industry certification, we need 14 additional credits per student. We get no extra money for this and we actually had less Perkins this year than last.”

CTE teacher hiring and qualifications

“Getting teachers trained in ** and ** can be difficult and ** also seems to be an area of teacher shortage.”

“Some of our faculty lack the technical skills to teach current programs used in industry. This is a problem.”

“It is very difficult to get good nursing teachers [because of the salary] and if you want to venture out and develop other programs that students may be interested in, like **, you have to fund the total start-up, space, equipment and hope you find a qualified teacher. We do not have a pool of applicants.”

“We do right now [have enough qualified CTE teachers], but the concern about teachers leaving and replacing them is a serious one. It is hard to get people in the field who are also willing to be teachers given that they likely won’t make as large a salary. I wonder if there could be more incentives created to help with getting a larger pool of qualified teachers.”

Impact of Regents graduation requirements/need for five-year graduation

“Students need five years here.”

“The issue is less about the Regents, but my inability to schedule [academic] interventions since all of the electives go towards the vocational major. That is why the five years would help.”

“Very difficult to get all students through in four years. It is a very heavy burden, given that we have a higher concentration of special education and lower-performing students than many of the small high schools.”

“If anything, the Regents requirements are helping. More science and math is definitely a plus and reading and writing are a must. It just becomes a problem when students enter high school over-age, are under-credited and have gaps in literacy and math. You then have to focus solely on building their skills so that they meet the performance requirements for the Regents. It is another obstacle, but it is evident that students who meet the performance requirements do better with the CTE programs.”

* Each paragraph under each heading is an observation by one principal.

** Language deleted to preserve the principal’s anonymity.