
Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a publication.

Publications have not been scanned in their entirety for the purpose of digitization. To see the full publication please search online or visit the Clinton Presidential Library's Research Room.

EDUCATION AND WORKFORCE DEVELOPMENT IN THE WASHINGTON, DC AREA

HEARING OF THE COMMITTEE ON LABOR AND HUMAN RESOURCES UNITED STATES SENATE ONE HUNDRED FIFTH CONGRESS FIRST SESSION

ON
EXAMINING REGIONAL ECONOMIC DEVELOPMENT IN THE WASHINGTON, DC AREA AND THE IMPORTANCE OF EDUCATION AND TRAINING IN THAT PROCESS. IT ALSO EXAMINES CURRENT OBSTACLES TO ECONOMIC GROWTH, SUCH AS POOR STUDENT ACHIEVEMENT AND CRUMBLING SCHOOL BUILDINGS, AS WELL AS REGIONAL SOLUTIONS TO THESE PROBLEMS.

Jan 13, 14, and 15, 1998

Printed for the use of the Committee on Labor and Human Resources



U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1998

45-832 CC

For sale by the U.S. Government Printing Office
Superintendent of Documents, Congressional Sales Office, Washington, DC 20402
ISBN 0-16-056333-X

Profile One: Aviation High School



The Two-For-One Diploma:
An Academic Degree and
Professional Aircraft
Mechanic Certification

American Federation of Teachers

Reaching the Next Step: A Resource Book for Educators
Setting the Standard for Student Learning: High Academic Standards and

Acknowledgments

Without the help of the administration, faculty and union representatives at Aviation High School, this profile would not have been possible. Principal Eileen Taylor hosted our three-day intensive site visit in April. She arranged for us to speak with instructors, students and parents. She allowed us to take back rich primary source materials such as technical manuals, evaluations, and internal documents. Her edits were helpful in strengthening our final product.

At Aviation High School in Queens, New York, we would like to thank those whom we interviewed: Eileen Taylor (Principal), Antonio Pepenella and Deno Charalambous (Assistant Principal), Paul Casella (United Federation of Teachers shop steward), Frank Carucci (UFT vocational education union representative), Major Michael Griffith (ROTC instructor), Ed Espaillat (UFT), Parents Association President Amy Travieso, students Mario Camaj, Peter Barbini, Diego Gimenez, Sterling Brinson, Evita Rodriguez, Anne-Marie Mears, Jimmy Huang, Michael Koumoulllos, Mario Laboy, Sara Perea, Benardino Rosario, Cesar Vizcorvondo, Ramadeep Singh, and Rayaz Sahadeo, instructors Lou Adams, Mike Jimenez, Janine Aiello, Ralph Santiago, Joyce Seiden, Bob Sadowsky, Bob Faver, John Mazzola, and Susan Levy.

Table of Contents

Acknowledgments	2
Overview	4
The Applicant Pool	4
Aviation's History	6
The Vocational Half of Aviation	8
Table 1—Vocational Course Prerequisites At Aviation High School	8
Table 2—Far-147 Aircraft Mechanics Skills Standards	8
Vocational Teaching Strategies	8
The FAA License Exam	9
Table 3—Sample FAA Examination Questions	10
Vocational Quality Of The Courses	10
Powerful Incentives To Learn	11
The Academic Half of Aviation	12
Table 4—Academic Courses Taken by Aviation Students	12
Table 5—New York City Sample High Quality Standards	13
Joint Academic and Vocational Activities	13
Electives and Extracurricular Activities	15
Workplace Learning	15
Concerns and Recommendations	16
References	18
Appendix A—FAR-147	19
Appendix B—FAA Sample Exam Questions	28
Appendix C—New York City Curriculum Frameworks for Science	35
Appendix D—Sample Vocational Lesson	45

Overview

Queens, New York—For more than fifty years, Aviation High School, located on a crowded street in Long Island City, halfway between the John F. Kennedy and Fiorello LaGuardia International Airports, has offered a unique magnet high school experience to New York City public school students. The 450 ninth-grade students accepted each year take all New York City academic course requirements to earn a high school diploma, plus all the vocational course requirements to earn a Federal Aviation Administration (FAA) aircraft mechanic license.

Aviation High has mastered this dual education experience by using a tightly focused curriculum, long days that begin with instruction as early as 7:15 a.m. and end as late as 5 p.m., an eight- to ten-period day, and a single-minded commitment by students, faculty and administration of the school.

Aviation High's reputation has spread because of its ability to produce top mechanics for major airlines across the country. However, the school's lasting success rests more on providing students with both the academic and the technical grounding that opens up college and aviation-related technical fields for immediate career opportunities. According to school estimates, 45 percent of Aviation graduates go on to four-year university; 35 percent attend two-year college or technical school. Of this 80 percent, the school estimates that more than 95 percent attain their desired degree or credential.

The Applicant Pool

New York City eighth graders have the choice to apply to more than 100 academic and vocational magnet schools for their high school education. Some vocational magnet programs, such as Queens

Vocational and Ralph McKee High, teach academics and the technical skills of many different careers. Others, such as Art and Design High or Automotive High, focus on only one career. Students interested in magnet schools receive a folder of information that describes the different academic and technical courses of study available at each school.

Each year, 4,000 eighth-grade students from across the five boroughs of New York City list Aviation High School as one of their top four choices. Students interested in aviation, mechanics and the opportunity to attend a school that will prepare them for immediate employment, list Aviation as their first choice. Only students in the latter category are considered for admission.

Once the first cut is made, the admissions committee makes its final selections based upon each student's junior high school academic achievement and attendance record. The most important of these academic considerations is the student's math background. The guidance office spends up to three months checking with feeder middle schools to find out what math level students have completed. Because basic math knowledge is necessary to perform nearly all vocational lessons, students without this foundation rarely get in.

From this second cut, 450 students are offered admission (approximately 11 percent of total applicants). Another 450 students are also put on a waiting list, in ranked order. Few make it off of this list, however; on average, only fifty students who are offered enrollment actually decline admission each year. Because of such tight admissions, stories abound of highly motivated students who did not get admitted, yet wait with their parents in the front office for two days or more at the beginning of school to plead their cases before the principal.

Because of its high academic require-

ments, its narrow technical focus, and its distance from where some students live, not all admitted students stay at Aviation. Some move. Some find they do not like the school's overwhelmingly male population (93 percent of student body).

Some do not have the solid math background needed for the vocational courses. Some fail out or do not meet the attendance standard. But those who remain at Aviation stay because they love airplanes, they love fixing engines, and they know that their high school will provide them with a high-quality education to achieve their objectives.

To replace those who do go to another high school, about 100 tenth-grade students (about 20 percent of the class) from other New York City schools are admitted each year. These students have maintained acceptable grades (mainly in the "B" to "C" range) in their college preparatory-level academic courses. They share the desire to work on aircraft and they work very hard to catch up. They must make up ninth-grade vocational courses during the summer after their admission to Aviation because no academic or vocational graduation requirements are relaxed for tenth-grade entrants to the Aviation program.

Because of the success of Aviation students in both college and the workforce, the school has been accused of skimming the highest-achieving students from the "zoned" high schools,¹ much as Bronx Science and Brooklyn Tech do for high-caliber academic students. This is partially true; Aviation does skim. Students cannot gain entry to Aviation with D's and F's on their middle school transcripts. Counselors from Aviation note, however, that only a handful of those admitted could have gained entry to the top-level academic magnet schools in New York City.

¹ In New York City, "zoned" high schools are the magnet schools that enroll students based on where the student lives, not on their junior high school grades or application for admission.

A more accurate description is that Aviation attracts students from the zoned high schools who are very motivated and have clear career objectives. After all, Aviation students went through the effort of considering where to attend high school; then obtained, filled out and mailed in an application. They commute from all over New York City, some up to an hour and a half each way. Some travel through a dangerous neighborhood, take between eight and ten classes a day, and enroll in an intense course of study usually reserved for adults. Many enroll in summer school to complete the academic and vocational requirements.

Nonetheless, the school has had 90 percent daily attendance for a decade. More than half of all students have had a 95 percent attendance rate; 200 students, or one in seven, had perfect attendance in 1995-96.

The student body is ethnically diverse, as is the city. Half the student body is Hispanic; African-American, Asian and white students all make up approximately 15 percent each. Seventy percent of students receive free or reduced-price lunches. Many are legal immigrants or first-generation citizens. Forty-seven different languages are spoken by students. What these students have in common is drive, motivation and a clear vision of their future after high school. As junior Diego Gimenez said in May 1996,

My friends know I won't be home until seven. I just tell my friends I am working hard but I know what I want to be. They go home after school and sleep or get in trouble because they are bored.

Despite the strains and pressures of preparing students to become licensed aviation mechanics, Aviation High School offers its students the strong academic foundation and the high skill professional credential that they need to enter either college or a high-skilled, high-wage job immediately after graduation. With more than fifty years of history, Aviation High

can serve as a model for the implementation of school-to-career systems.

Aviation's History

Aviation was founded as the "Central Building Trades School" in 1925 in Manhattan. The school was opened to provide young men with a vocational education in high-skill career fields such as woodworking, plumbing and sheet metal. The school was renamed School of Aviation Trades in 1934, when the vocational curriculum was rewritten to focus exclusively on aviation. Students had the first opportunity to earn their aircraft mechanic's license while still in high school in 1949, when Aviation Trades became accredited with the FAA to license for Airframe.

The school name was changed to Aviation High School in 1957, when the school was moved from Manhattan to its present location in Long Island City. The six-story school building includes a large aircraft hangar to accommodate 20 small aircraft and one helicopter. Also, Aviation has 35 specialized shops that house welding, propellers, jet engines, landing gear, hydraulic systems and complete avionics laboratories.

In 1962, due to the improved facilities and new equipment, the FAA granted Aviation the ability to license for Powerplant. However, because Aviation High required students to complete both the full academic and vocational course sequences, students found it nearly impossible to earn all the necessary credits and skills to earn both of the FAA certificates and a high school diploma—even with summer school each year. Ninth graders took five academic and two vocational courses. Tenth graders took five academic and three vocational courses; eleventh—four or five academic and three vocational, and twelfth—four and four.

However, in 1964, two years after

earning the right to license for Powerplant, students who so desired were able to stay for an "extended 12th year"—essentially a 13th grade—to obtain both the FAA Airframe and Powerplant certificates, while still getting a full academic education. After fulfilling all academic requirements for a high school diploma, and all vocational requirements to earn one of the two FAA certifications during their first four years, students would enroll for half a day of intensive training in their 13th grade at Aviation to complete remaining vocational courses necessary to sit for the second FAA licensing exam.

In 1982, the Federal Communications Commission (FCC) granted permission to the school to train students for the Aviation Electronics (Avionics) License. To earn all three licenses during a five-year high school experience, one tenth-grade vocational course, Aviation Maintenance, was begun in the ninth grade. Related Technology, a prerequisite course for the FCC license, was also offered in tenth grade. Students were required to attend summer school. With hard work, and sometimes more than nine academic and vocational courses a day, students could earn an Airframe or Powerplant certification during their first four high school years, then attend school full time their 13th grade to earn their FCC Avionics license and their second FAA license.

Beginning in the early 1990s, budget cuts of up to 14.5 percent forced the school to become more creative in paying for its large, highly technical program. Aviation High, by its very nature, is an expensive school to run. Upkeep on 20 airplanes, labs, spare parts, and fuel fall on top of costs for academic textbooks and supporting materials that a traditional high school must pay for. It also costs more to fund a program with nine periods a day, three more than at a regular

high school.

In the aviation mechanics field, workers need three licenses to earn promotions and work on all aspects of an aircraft. Airframe, a professional license issued by the FAA, indicates proficiency in all aspects of the aircraft's structure, such as landing gear, throttle and navigation equipment. Powerplant, issued by FAA, requires mastery of all aspects of the engine and propulsion system. Aviation Electronics (Avionics), deals with the navigation and control panel systems that aircraft pilots use to operate the plane.

To earn each of these licenses, an individual must first have a strong academic foundation in the core subjects. Such academic knowledge is essential to understanding propulsion, aerodynamics, mechanical and many other processes of flight. Second, students have to complete a series of vocational courses at a licensed teaching institution to learn the specific technical skills in their licensing field. Finally, students must pass a final exam that covers general academic math, science and grammar questions, as well as technical questions specific to their licensing field.

At Aviation High School, the goal has been to provide both the academic and the vocational courses sufficient to train students to earn the three professional certificates. With the FAA credential, students immediately qualify for \$15 - \$17 an hour aircraft mechanic jobs upon graduation.

Like any high school, Aviation receives funding from the school district based upon enrollment. Aviation receives a slightly larger amount than other schools, because the FAA caps enrollment in vocational courses at twenty-five students, whereas the school district caps at thirty-six. Additional money is made available to Aviation strictly to fund the instructor costs due to smaller class size. The 14.5 percent budget cuts, however,

made the allotment insufficient to meet the educational needs of the students. Therefore, something had to give.

Academics could not be sacrificed, so the school looked for ways to reduce other vocational and administrative costs. For instance, the FCC Avionics certification was eliminated at Aviation as funding for its prerequisite courses (including Related Technology) was cut. Tutoring programs have lost funding, requiring instructors to volunteer their time after school to ensure that their students can get the remedial help they need to perform their vocational assignments. Other support services, guidance counselors, paraprofessionals, school aides and secretaries suffered similar cuts.

To help Aviation shoulder the burden, a local university, the College of Aeronautics, now invites Aviation students to take, free of charge, college computer science courses and advanced placement courses in chemistry, physics and calculus. In addition, the College provides faculty members who teach advanced placement calculus and physics classes onsite at Aviation at 7:15 a.m.—an hour before the regular school day. Finally, the College offers two summer institutes for Aviation students, at no charge, on their college campus, so that students can still get all the necessary training to sit for and pass the exam to earn an FCC Avionics license. The College uses this as an opportunity to promote their college and attract the highly competent Aviation graduates.

Therefore, Aviation students can still earn all three licenses during their five-year high school experience. While not all of their courses can be taken at their high school, if Aviation students work hard, attend summer school, learn the material, and go down the street to the College of Aeronautics for Avionics courses, they will be able to sit for the exams that allow them to earn the FCC license and

both FAA licenses.

The Vocational Half of Aviation

The technical half of the students' education is defined by the FAA's certification requirements. Students take the following vocational courses across their high school years to fulfill the FAA requirements.

Table 1—Vocational Course Prerequisites at Aviation High School

Grade	Course	Periods per Week
09	Aviation Maintenance/ Electronics	(2)
10	Metal/ Wood Shop/ Composite	(3)
11	Airframe/Powerplant	(4)
12	Powerplant or Airframe	(4)
13	Airframe (if Powerplant completed) or Powerplant (if Airframe completed)	(4)

Each of these vocational courses follows the precise academic and occupational skill standards written in Federal Aviation Regulation 147 (FAR-147). The textbooks are aligned exactly with the FAR-147 standards, to ensure that students receive training in all technical proficiencies they will need to pass the FAA exam. (To see FAR-147, please see Appendix A.) Instructors use these standards to design a curriculum that covers all necessary skills. The skill standards are clear, concise and highly usable.

With these clear and specific standards, instructors know exactly what their students should learn. Vocational instructors can focus their energies and creativity on determining how best to teach their students to understand the complex academic and technical concepts, not on figuring out what concepts should be learned.

Vocational Teaching Strategies

In the airplane hangar, four different vocational classes run in the four corner quadrants simultaneously. Each quadrant teaches one broad area of FAR-147 technical objectives for each course. No more than twenty students are in each quad-

Table 2—FAR-147 Aircraft Mechanics Skills Standards

A. Basic Electricity —

Level 1: Measure capacitance and inductance

- Explain the effect of inductive reactance in an electrical circuit.
- Explain the interrelationship of capacitive and inductive reactance.
- Define the term that describes the combined resistive forces in an a.c. electrical circuit.

Level 2: Calculate and measure electrical power

- Determine the power furnished by a generator to an electrical system consisting of various electrical units having specific load rating.
- Determine the power required by an electric motor that is operating at a specified efficiency and load.

Level 3: Measure voltage, current, resistance, continuity and leakage.

- Use an ohmmeter to check for open or short circuits.
- Use test instruments to check continuity.
- Explain the basic operating principles of a galvanometer.
- Connect voltmeters and ammeters into an electrical circuit.
- Explain the purpose of shunt resistor when used with an ammeter.
- Define prefixes such as micro, mega, kilo, and milli, in expressing electrical quantities.

rant, as per FAR-147 regulation. Once a student has fulfilled the technical objectives for his/her quadrant, then he/she moves to the next quadrant. Thus, student promotion is based on technical proficiency, not seat time.

At the start of each class, the vocational instructor assembles the students in front of the blackboard. When applicable, he scrawls physics and geometry equations on the board, to explain the academic concepts at work in the day's technical objectives. Students follow the lesson in their technical manuals, which require a twelfth-grade reading level. Then, students receive a hand-out, which details the FAR-147 objectives they are to accomplish.

After the short academic lesson, students join up in teams of three to four and use the academic concepts talked about at the beginning of class to perform the required FAR-147 technical objectives. The instructor moves from small group to small group, answering questions, demonstrating and explaining difficult concepts, and checking work to make sure it will keep the airplane safe for flight.

Through this process, vocational instructors both teach and reinforce the math, science, and English lessons learned during the academic portion of the student's coursework. With this system, students clearly see the connections between their vocational courses and their academic concepts and are encouraged to, because the academics must be used so frequently.

The FAA License Exam

After completing all required vocational courses, students must prove their knowledge and skills to the FAA by passing a written, an oral, and a practical examination, each given in three sections. Both the Powerplant and Airframe licenses require students to pass a General

Knowledge section. For Airframe, the section covers Airframe Structures and Airframe Systems and Components. For Powerplant, it features Powerplant Theory and Maintenance, and Powerplant, Systems and Components. Both tests, which each cost about \$100 to sit for, take more than eight hours to complete.

However, before students are eligible to sit for the FAA final exam, students must first pass a qualifying exam with at least an 85 percent. If students pass, they will be able to sit for the final examination. If students fail, they are required to take a summer refresher course on the test materials. The results of the qualifying exam are returned to the students so they can quickly determine where their weaknesses are, to better prepare for the refresher course or for taking the final. About 80 percent of Aviation students pass the qualifying exam the first time.

Exam questions are difficult. For instance, on the Airframe Test, a student needs to have mastered ten broad structural sectors of the aircraft, including its fire protection systems, electrical systems, communications and navigation systems. Just for one section—aircraft landing gear—a student will need to know how to inspect, check, service and repair landing gear, retraction systems, shock struts, brakes, wheels, tires and steering systems. This includes specific tasks, such as:

- determine aircraft tire inflation processes;
- calculate the effects of increasing temperature on "parked" brakes;
- detect internal leakage in a brake master cylinder; and
- determine the cause of excessive brake pedal travel.

So these exams require a high degree of mathematical, scientific, and technical knowledge. Here are some sample questions:

Table 3—Sample FAA Examination Questions

If the container volume of a confined gas is doubled (assume temperature remains constant), the pressure:

- a. increases in direct proportion to the volume increase
- b. remains the same
- c. doubles
- d. reduces to one-half its original value

As the velocity of the air across the aircraft wing increases, the pressure of the air on the upper surface:

- a. increases
- b. decreases
- c. drops to zero
- d. remains unchanged

When steel hi-shear rivets are used to assemble aluminum alloy structural components, they should be:

- a. used at no greater ratio than 1 hi-shear rivet for each 3 aluminum alloy rivets
- b. driven at 830° to 860° F. in order to reduce the possibility of cracking.
- c. coated with zinc chromate primer prior to assembly to reduce dissimilar metal corrosion
- d. fitted to extremely close tolerances

The use of water injection permits a reciprocating engine to be operated at high power output by:

- a. enriching the mixture
- b. suppressing detonation
- c. cooling the fuel-air charge as it passes through the intake manifold
- d. increasing the octane rating of the fuel

Answers: d, b, c, c.

A safe assumption is that students work extremely hard each year in each vocational course to ensure that they will be prepared to pass the difficult FAA certification exam. (To see further sample questions for the FAA exam, please see Appendix B.)

The final exam also holds high stakes for the school. The FAA grants "franchise" rights only to those schools that can successfully prepare aircraft mechanics. To ensure that these schools do a thorough job of teaching their students, the FAA requires that, of those who sit for the final exam, 90 percent must pass. If fewer than 90 percent pass for two consecutive years, the school could be put on probation. This is in addition to random, unannounced FAA inspections of the aviation training facilities on an annual basis.

Aviation consistently certifies 90 percent of those who sit for the FAA final exam. While not all students qualify to take the FAA exam, 80 percent of all Aviation twelfth grade students did pass the FAA exam in 1995-96. This accomplishment makes Aviation one of only a few high schools in the country that can license. Aviation is the largest public high school in the United States to grant FAA certification.

Vocational Quality of the Courses

As previously discussed, the vocational course quality is quite high. Students are able to pass a professional certification exam while in high school, on top of taking their academic courses. Students must earn a 70 percent to pass these courses, compared to a 65 percent for academic classes. If the vocational course quality was lower, few students would be able to pass the exam.

However, there is further testament to the professional quality of the vocational courses. Aviation High School has entered into articulation agreements with aero-

navitics-related colleges in Oakdale, New York; St. Louis, Missouri; Daytona Beach, Florida; and Scottsdale, Arizona.

The most extensive articulation agreements are with the College of Aeronautics, an institution that offers both associates' and baccalaureate degrees, also in Queens. The College of Aeronautics has inspected the curricula and understands the high quality of Aviation's vocational and academic courses. The College awards up to 74 advanced academic and vocational credit hours to Aviation graduates who enroll in their institution.

Powerful Incentives To Learn

With the FAA license in one hand, high school diploma in the other, an Aviation graduate is highly employable. Aircraft company employers can only hire workers who have earned this license. The license represents to students, instructors and employers, a high level of technical and academic accomplishment, and the professional competency to work on an airfield, repair aircraft and maintain the highest standards of safety.

Therefore, this FAA certificate acts as a powerful incentive for the student to learn the academic and technical skills required for the exam. Academic faculty say that students rarely question the relevance of their math and science lessons—they understand such information is necessary to understand their job and to pass the test. In vocational courses, students badger the instructor if they fall behind, because it will stunt their training and put them behind in preparation to pass the FAA test.

To recognize different levels of achievement, Aviation conducts an awards program, which is very prestigious among students and parents, called the "Wings" ceremony. Small "silver" wings are awarded to juniors and seniors who

average 85 percent or higher across their vocational classes, "golden" wings to those who average 90 percent or higher.

Local aircraft companies do not know, nor do they ask about, whether a student has earned these aviator wings. Within the school, however, earning the wings carries a good deal of prestige within the student body. Once a year, an induction ceremony is held. Many academic classes are released for a period to attend the assembly. Many parents take the day off from work, to sit proudly and applaud their son or daughter's achievement, even though some may not understand sufficient English to understand the speeches. The principal and a keynote speaker address the audience after the ROTC presentation of colors and the school band plays the national anthem. Students recite the "Aircraft Maintenance Student's Pledge":

I, as an Aviation Technician knowing full well that the safety and lives of others may be dependent upon my skill and judgment, promise to hold in valued trust the rights and privileges taught me by my certified maintenance instructors. I also understand and accept the great responsibility for which I am being trained as a certified maintenance technician. Therefore, I further promise unyielding adherence to quality craftsmanship, and the dignity of my vocation and the advancement of aerospace technology.

More than 100 students achieved either silver or gold wings in 1995-96.

If students find that the aviation mechanics field is full or that their interests change, they are still well trained for other skilled professions. Says one vocational instructor, "If it has a motor, our students can fix it." If the specific technical aspects of their aviation career change, they can still rely on the analytic skills and solid academic foundation their Aviation schooling provided. Some students go to work for the New York transit system, as an electric mechanic, welder or engineer. Some go to work out at the airfield, to pay their way through undergraduate, and in some cases, graduate, school. These college graduates have also

become journalists and neurologists, started their own businesses, joined the armed services as officers, or flown New York police helicopters. The impressive placement record of Aviation High indicates that attending a specific occupationally focused high school does not rule out other career options—so long as the school provides a broad and solid academic foundation.

The Academic Half of Aviation

The academic experience at Aviation is similar to other traditional, high-quality

New York City high schools. Students must take the same English, math, and science courses. Students can enroll in either a college preparatory (Regents) or a non-college preparatory program, and must take the courses outlined in Table 4 to graduate, according to their particular program.

More than 85 percent of the Aviation students complete the college-prep level Regents curriculum; 29 percent of students pass all the Regents exams and earn the Regents seal. About fifty seniors take Advanced Placement courses in Physics, English, history and Calculus.

All academic courses at Aviation follow

Table 4—Academic Courses Taken by Aviation Students

Non College Prep	9th Grade	College Prep
Regents English 9		Regents English 9
Humanities		Global Studies 1
Physical Education 9		Physical Education 9
Foundations of Science 9		Biology
Foundation of Sequential Math		Regents Math Q1
Fine Arts or Music		Art or Music
10th Grade		
Regents English 10		Regents English 10
Global Studies 2		Global Studies 2
Physical Education 10		Physical Education 10
Earth Science		Regents Chemistry
Regents Sequence Math 1		Regents Math Q2
Related Technology or Health		Related Technology or Health
11th Grade		
Regents English 11		Regents English 11
American Studies		American Studies
Physical Education 11		Physical Education 11
Chemistry 1		Regents Physics
Intermediate Algebra ²		Regents Math Q3
12th Grade		
Regents English 12		Regents English 12
Government/Economics (.5 yr each)		Government/Economics (.5 yr each)
Spanish		Spanish
P.E. 12		P.E. 12
Regents Sequence Math 3		Pre-Calc or AP Calculus

² The principal says that Intermediate Algebra has lower academic standards than Regents Sequence 2. If students enroll in Intermediate Algebra, they are expected to take Sequence 2 during summer school, to be prepared for Sequence 3 their 12th grade year.

the same New York City standards (called Curriculum Frameworks) that any zoned academic school would have to follow. These frameworks provide the academic instructors with fairly clear, concise academic content standards to aim at with their courses. For instance, an instructor could look at the standards below and understand easily the academic content their students need to learn:

Table 5—New York City Sample High-Quality Standards

Biology:

Explain how the genetic make-up of an organism is determined by its parents.

Math Course 2:

Solve problems involving the trigonometry of the right triangle.

Physics:

Explain the movements of Earth's plates and the consequences of such movements.

Economics:

Demonstrate an understanding of scarcity, supply and demand, markets, etc.

(To see a copy of NYC's science curriculum frameworks, please see Appendix C.)

The Aviation students enrolled in the Regents college-preparatory curriculum take Regents exams in each of the four core subjects to certify their mastery of the higher course content material. Regents tests are closely aligned with the New York state standards, so that students answer questions that should have been directly covered by the instructors in their Regents-level courses. These Regents exams are considered quite demanding.

The remainder who do not take the Regents Exams must pass the Regents Competency Tests to graduate. These exams also are aligned with the New

York state standards for the academic courses, and are considered minimum competency exams that measure whether a student has mastered the state's prescribed ninth grade standards. Aviation students, like any NYC public high school student, must pass each of these Regents Competency Tests to graduate with an academic diploma.

Students who complete the academic course requirements and pass all the Regents competency tests receive a high school diploma. Those who complete the more difficult Regents academic regimen and pass the Regents test receive a special Regents seal on their high school diploma, which garners them more favorable consideration when applying to a state university.

In April 1996, the New York State Board of Regents took a strong step toward upgrading the academic experience for the non-Regents students. The Board decided to phase out the Competency Tests and require all students to take the more rigorous Regents exams. There will continue to be a differentiated diploma system during the transition period, but the long-term vision in New York is to move toward a single, high-level diploma. During the transition period, students who score high enough on the exams and who pass certain required courses will earn a Regents diploma; students who score in a lower range on the exams will receive a local diploma; and students who do not reach a minimum level will not graduate.

Joint Academic and Vocational Activities

Aviation students have excelled in academics for a long time. Most are taking Regents-level courses. One-third are passing all Regents-level examinations. However, because New York will be requiring all students to pass the Regents

examinations, Aviation academic and vocational instructors are saying that they will need to find additional instructional strategies to help students reach this higher academic standard.

Many academic and vocational instructors believe that applied learning would help more students achieve this higher standard. However, faculty point to several hurdles which prevent them from moving quickly to incorporate these learning strategies.

The first problem is that no professional development money is available to give instructors the time, resources and expert support that would enable them to create high-quality lessons. Assistant principals, who normally assist instructors with curriculum development, also must teach, observe classes and do instructor evaluation. Administration is necessarily lean, due to budget issues. So, few institutional resources are available to help.

Second, because of the detail and rigor of the academic curriculum, instructors say that there is little room for error. If an applied lesson takes several days, instructors say they would fall far behind—with no room to catch up. Any application of academic concepts would need to be short, well produced and to the point.

Third, most academic instructors have little experience in the aviation industry. As in most traditional high schools, academic and vocational instructors have little time for interaction. The faculty meets once a month with their department to discuss changes in curriculum and administrative matters. They also meet once a month as a whole, to discuss awards the school has won, changes in the Regents system, and administrative matters. So the connections made come through more informal conversations between academic and vocational instructors. For instance, in 1995, a team of math and science instructors requested to see the curricula for the different vocational courses,

along with advice from vocational instructors on teaching these technical skills. This collaboration continues sporadically, as the instructors have time.

Nonetheless, informal conversations between instructors have led to some examples of academic and vocational integration. For instance, economics instructors in the twelfth grade invite an aviation analyst from the investment firm, Solomon Brothers, to discuss the economics of the aviation industry. Representatives from trucking and shipping companies talk about the economic trends in their respective industries, pulling in the core curriculum concepts covered that day.

Most of the integration, though, has come from the vocational end. Because students cannot understand the complicated workings of the hydraulics systems without understanding physics and geometry, vocational teachers find ample opportunities to assign academic homework assignments. For instance, a lesson on Aviator Breathing Oxygen systems, by Mr. Pollizotto, asks students to answer:

Why can't hospital Breathing Oxygen be used on aircraft?

How much pressure does a high pressure Aviators Breathing oxygen system contain?

What could happen to a person if they receive a limited supply of oxygen?

Answers: 1) Hospital oxygen has a high degree of moisture. At high altitudes, oxygen would freeze; 2) 1,950 - 2,100 pounds per square inch; 3) lack of oxygen to the brain will cause momentary happiness, followed by a slowing of movement and reaction time, blurry vision, met finally by the person passing out.

The answers all require biology and chemistry, and Mr. Pollizotto starts each vocational class explaining the academics and related technology needed to answer the questions.

Mr. Calucci, a vocational instructor, has helped math instructors teach a few lessons during the 1995-96 school year.

Paul Casella, another vocational instructor, has written an integrated curriculum where math is explicitly used in his shop lessons. In the main airplane hangar, math and physics equations are scrawled across the chalkboards, alongside airplane blueprints and lesson objectives. (To see a sample lesson that uses academics to explain vocational concepts, see Appendix D).

The primary goal of any high school is to ensure that its students master the common core curriculum. Aviation students, who started off as average- to below- average-achieving eighth graders, have become really motivated about fixing landing systems and firing jet engines. Aviation students take this same curiosity, this same intensity for learning, to their academic classes, as well. In interview after interview, no student suggested that academic courses were irrelevant, useless or any less important than the vocational courses. To students, both courses are a necessary means to an end.

Aviation has shown that, with traditional instructional strategies, more than 29 percent can earn Regents diplomas. Aviation students are intensely interested in pursuing a technical certificate and have stretched to learn academic concepts sufficient to pass these exams. Further integration of applied lessons will help to ensure that the remaining 70 percent also have mastered the necessary academic skills to earn the Regents seal.

Electives and Extracurricular Activities

Electives barely exist at Aviation. The school packs so many academic and vocational courses into the school day that there is simply too little time for electives. Nonetheless, there are about 180 members of the Aviation chapter of the Air Force Junior Reserve Officer Training Corp (ROTC) run by Major Michael Griffith, and 60 to 80 students in the Aviation marching band.

After school, Aviation High fields soccer, track and field, handball, basketball, skiing, volleyball and field hockey athletic teams. Last year, the handball team won the citywide championship. As for more academically oriented extracurricular activities, Aviation has a yearbook, school paper, color guard, city champion debate team, and chess and flying clubs. Aviation students won the Westinghouse economics competition in 1988. Finally, students have a junior-senior prom, a fashion show, and general volunteer activities like a blood drive and March of Dimes walk. This level of student involvement keeps most students from getting home until well after dark, most nights.

Workplace Learning

Clearly, Aviation High provides extensive simulation of work-based learning on the high school campus. Despite the use of potentially dangerous tools of the trade—welding equipment, jet fuel and propellers—Aviation has a strong record of student safety. Students are supervised by instructors at all times when performing dangerous tasks, such as running aircraft engines. Students receive continual safety demonstrations and advice. Students always have the backup of an experienced student and instructor. The large airplane hangar has several vocational classes going simultaneously, so that four vocational instructors and a professional aide are constantly available.

During the 1995-96 school year, Aviation started an internship program for fifteen students with Tower Airlines, headquartered at Kennedy International Airport. More than 50 students competed for these positions, sending in a written application and undergoing an in-depth oral interview. Selection was based on academic and technical performance. Interns must attend work every day on time. Two absences or three tardies result

in a termination. Students whose overall GPA falls below an 85 percent must resign from their jobs.

The Tower internships allow students to get some unpaid work experience, professional contacts and the potential for a job after graduation at this non-union airline. Each internship position allows the student to learn on-the-job skills, work on 747's with more modern tools than Aviation High, in a professional setting. Students do not miss academic classes to attend these internships. During our visit, Tower Air staff was unable to meet with us, so we were not able to judge the quality of the internship, nor the relationship of the interns to the adult workforce.

Other, unionized airlines have considered and rejected the idea of student interns. The past decade of airline competition, downsizing, corporate attempts at decertifying unions, coupled with increased concerns with airline safety leave several important questions that have a bearing on the appropriateness of using interns in this industry:

- Will airlines utilize interns without adequate supervision as a tool to cut costs?
- Should the internship explicitly require a certain level of intern supervision to prohibit possible abuses or dangers to the student?

Concerns and Recommendations

Aviation High School is a unique school and one of the best-kept secrets in New York City. A small, single occupation high school that trains for a narrow career field is only possible in a large school district such as New York City. The absolute rigor of the experience is nothing short of amazing. The high caliber of the vocational program is quite clear from the strong reputation, multiple

articulation agreements and advanced college credits that Aviation has established over its 60-plus-year history.

The strongest assets to this program are:

- balance required between academic and vocational preparation—neither side loses out;
- well-defined academic standards to guide a rigorous curriculum;
- well-defined vocational standards to guide a rigorous curriculum;
- a vocational program that should culminate in a career credential, if not two;
- the extensive technology labs and an air hangar with multiple aircraft to allow students to learn through experience;
- strong support from the College of Aeronautics to provide faculty and articulation agreements; and
- strong Advisory Board and Alumnae Association.

What could still be done to further improve this already successful school? First, academic teachers may be helped by further professional interchanges with the vocational teachers. Academic instructors could learn by accompanying the vocational instructors and their students to the airfield or by receiving a briefing on the FAR-147 regulations. Academic instructors might find it easier then to make further connections to real vocational activities that require their academic content, to help students better understand and retain these concepts. The school district has provided only a few days for this type of professional interchange between educators, but more are needed.

Second, Aviation students do not use computers. Because the aviation industry

moves toward still-further computerization, Aviation will face further hurdles if it cannot provide such training. Except for the FAA exam, which is taken in the "FAA computer center," students have limited contact with this form of high technology. It is essential that updated computers be integrated into the entire instructional system.

However, Aviation provides us with some solid evidence that average-achieving students, if motivated with challenging, interesting vocational work that leads to immediate high-paying, high-skilled employment after graduation, will apply themselves to a rigorous academic course of study. Aviation illustrates the potential for students to achieve amazing academic and technical accomplishments, if given appropriate instruction, facilities, expectations, and strong incentives for their efforts.

References

Aviation High School, *Aviation Hand Book*, n.d.

_____, *Air Force Junior Reserve
Officer Training Corps Manual*, 1995.

Crane, Dale, *Airframe Section Textbook*.
(Wyoming: LAP, Inc., 1985).

_____, *General Section Textbook*, (Wyoming:
LAP, Inc., 1985).

Crane, Dale, Charles Otis and Frank Delp,
Powerplant Section Textbook, (Wyoming:
LAP, Inc., 1983).

Federal Aviation Administration, *Federal
Aviation Regulations: Part 147 Aviation
Maintenance Technician Schools*, January
1993.

Foye, James, *Aircraft Technical Dictionary*, 3rd
Ed. (Wyoming: LAP, Inc., 1992).

MPR Associates, Inc. *Getting to Work: A Guide
for Better Schools*, (Berkeley, CA: National
Center for Research in Vocational
Education, 1995).

New York State Education Department, *Regents
Competency Test: English*, 1995.

_____, *Regents
Competency Test: Global Studies*, 1995.

_____, *Regents
Competency Test: Mathematics*, 1995.

_____, *Regents
Competency Test: Reading*, 1995.

_____, *Regents
Competency Test: Science*, 1995.

_____, *Regents
Competency Test: United States History and
Government*, 1995.



U.S. DEPARTMENT OF EDUCATION

FAX TRANSMISSION

Office of the Secretary
600 Independence Avenue, SW
Washington, D.C. 20202
Office: (202) 401-8450
Fax: (202) 401-0596

TO: *Shirley Sagawa* DATE: *1/12/99*
FAX: *456-6244* PAGES: , including cover.
FROM: Susan Frost / *Don Bernal*
Senior Advisor to the Secretary
SUBJECT: *Turnaround Schools*

COMMENTS:

*Shirley - Attached is the report and
press materials from last May re:
"Turning Around Low-Performing
Schools."*

RAISING STANDARDS AND STRENGTHENING ACCOUNTABILITY: KEYS TO IMPROVING PUBLIC SCHOOLS

October 28, 1997

President Clinton visited Oscar Mayer Elementary School in Chicago, where he met with parents, students and teachers to learn firsthand of Chicago's school reform efforts. The President called for more cities and states to raise standards and work aggressively to turn around failing schools, as Chicago has done.

President Clinton Praises Chicago School Reforms. More than a decade ago, the Chicago school system was singled out for having the schools that were "the worst in America." Today, noting significant increases in test scores over the past two years, President Clinton said that Chicago is now a school system on the move. Since legislation placed the school system under the control of Mayor Daley, Chicago has installed a new management team that placed the school system on sound financial footing, invested in needed school renovations and repairs, and adopted tough discipline policies. The school system has raised academic standards and implemented new programs to help students reach them. The Chicago Public Schools have strengthened the curriculum, expanded participation in preschool programs and kindergarten, provided training to help parents succeed as their children's first teachers, and implemented after-school programs to expand learning time and provide extra help to students who need it.

A Model of Accountability: Ending Social Promotions and Intervening in Failing Schools. President Clinton praised Chicago's tough accountability system, which holds both students and educators accountable for learning.

Chicago has ended social promotions, requiring instead that students meet academic standards at grades 3, 5, 8, and 9 before moving to the next grade level. Students who need it are given extra help to meet the standards, through extended day programs that keep schools open longer each day and provide tutoring, enrichment, and other kinds of academic help. Students who don't pass the tests at these key grade levels are required to attend summer school. Nearly half of those who attend summer school go on to meet the standards and are promoted to the next grade.

Chicago also holds schools to tough accountability standards, and takes decisive action when schools are failing. Schools with fewer than 15% of the students meeting national norms in reading are placed on probation. These schools are reviewed by a team of outside experts, which helps develop a corrective action plan that the school must follow. Schools on probation receive additional assistance and their performance is closely monitored. If the test scores fail to improve or if the school fails to implement the corrective action plan, the Chicago Public Schools can take additional steps, including requiring the principal and teaching staff to recoup for their positions, removing the principal, or, if necessary, closing the school.

Federal Support for States and Districts Working to Turn Around Failing Schools. President Clinton challenged other cities and states to follow Chicago's lead by taking decisive steps to turn around schools with persistently low performance. The President directed the U.S. Department of Education to produce and disseminate guidelines on effective approaches to turning around failing schools, based on the experience of Chicago and other cities such as San Francisco, New York and Philadelphia, states such as Maryland and Kentucky, as well as on lessons learned from business and education research. He also directed the Education Department to develop a plan for helping local school districts use existing federal education programs and resources, such as Title I, the Charter Schools Program, America Reads, and the 21st Century Schools program, to improve or close down failing schools, and to provide the students from those schools with the extra help they need to catch up academically.

**UNITED STATES
DEPARTMENT OF EDUCATION****NEWS**

**FOR EMBARGOED RELEASE: 2 p.m. EDT
May 7, 1998**

**Contact: Melinda Kitchell Malico
(202) 401-1008**

**TURNING AROUND LOW-PERFORMING SCHOOLS;
EDUCATION DEPARTMENT RELEASES GUIDEBOOK**

- In New York, a four-day review process of low-performing schools includes an intense examination of the school's leadership, curriculum, assessment, parent involvement, physical facilities and teacher quality. Everyone from the custodial staff to the principal is interviewed. Afterwards, a corrective action plan is drawn up to address deficiencies.
- A team effort for school improvement in Kentucky identifies troubled schools' academic programs as "in decline" or "in crisis," triggering entry into a state school improvement program that offers more state funding, tailored action plans and rigorous self-evaluation.
- A San Francisco principal asks teachers to strive for a new set of high teacher expectations in a reconstituted school, and hints that if they prefer the status quo, they should consider looking for a position elsewhere.

State and local examples of these types of efforts and information on what needs to be done to turn around low-performing schools -- and how states, districts and communities can approach school change -- are included in a new U.S. Department of Education guidebook, *Turning Around Low-Performing Schools: a Guide for State and Local Leaders*.

"We cannot and must not tolerate failing schools," said U.S. Education Secretary Richard W. Riley. "We need to stop making excuses and get on with the business of fixing our schools.

"Across the nation, there are schools that are taking significant steps to change what happens between teachers and students in the classroom, concentrating their efforts on dramatically improving student learning and achievement. Turning around low-performing schools is a huge undertaking, but it is the responsibility of school, community and state leaders across America."

-MORE-

-2-

Data from the National Assessment of Educational Progress show that the academic performance of students in our nation's highest-poverty schools can be several grade levels behind that of students in low-poverty schools. What do low-performing schools look like? The most critical issue is that such schools do not focus on learning, the report notes. Often the environment is not conducive to learning -- teachers are burnt out, school safety is a problem, and students, parents and the community are disengaged. Schools often hold low expectations for students and offer course work that is not demanding.

To achieve accountability, states and communities first need to identify low-performing schools. Districts and states must examine schools to determine, for instance, if teachers and principals are effective and well trained; if the school has high standards and a strong curriculum; whether student absenteeism, transfers and dropout rates are high; and how students perform on assessments. Texas, for example, annually collects performance data on all students to measure and rate school and student progress and rates schools "acceptable" if at least 40 percent of students in a school, as well as those in each racial and economic category, pass the state assessment. These data are made public and levels termed "acceptable" are increased over time.

Once identified, turning around low-performing schools is not easy. The most important area of reform for low-performing schools is providing high-quality curricula and instruction that help children reach challenging academic standards. All aspects of the school's operations, from strong leadership to professional development to community involvement, must support and sustain efforts to upgrade curricula and instruction and improve student achievement.

Districts can help schools focus on teaching and learning to high standards by:

- helping schools gain control of the learning environment by, for example, setting and enforcing discipline policies;
- encouraging schools to challenge all students to take rigorous course work;
- supporting district policies to extend learning time;
- creating a professional development program aligned with the curriculum and focused on improving instruction;
- providing services so that young children come to school ready to learn; and,
- helping schools implement comprehensive school reform programs.

-MORE-

Support and leadership from the school district can build the capacity of low-performing schools to improve student achievement by setting priorities such as:

- building strong leadership at the school;
- promoting policies that encourage teacher commitment to reform;
- using resources strategically;
- working in partnership with the community;
- helping schools use performance data to drive improvement;
- providing incentives for change and support for innovation.

If schools don't meet standards, states and districts must take steps to intervene, reorganize, restructure or close schools. Twenty-three states have policies for intervening and mandating major changes in such schools and 17 states grant this authority to districts. Reconstitution is a radical "last resort" intervention with wide-ranging ramifications not only for the schools involved but for the entire district and community.

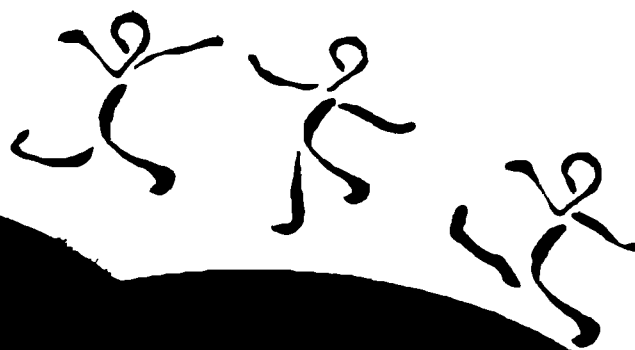
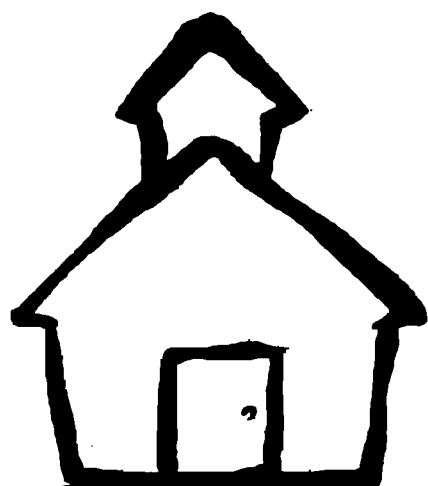
Several U. S. Department of Education programs are designed to help states and districts support improvement and create the means to hold schools accountable for student achievement. The new Comprehensive School Reform Demonstration Program is designed to help schools implement comprehensive reforms and turn schools around. Under Title I, the largest program of aid to low-income schools, states must establish standards and assessment systems to measure the progress of all children and to identify schools that fail to make adequate yearly progress. Goals 2000 funds can be used to raise standards of teaching and learning. In addition, President Clinton has also proposed several initiatives to help increase student achievement including:

- Education Opportunity Zones
- Reducing Class Size in the Early Grades
- America Reads Challenge
- After-School Programs -- 21st Century Community Learning Centers
- Funding to Modernize and Build Schools.

The guide includes an inventory of department resources to help states and districts improve low-performing schools. It responds to President Clinton's October 1997 directive to Riley to produce guidelines on ways to turn around low-performing schools and help cities and states use existing department resources to do so. The directive states that "no school improvement strategy can succeed without real accountability for results, as measured by student achievement."

Turning Around

Low- Performing Schools



A Guide for State and Local Leaders

U.S. Department of Education



**UNITED STATES DEPARTMENT OF EDUCATION****THE SECRETARY****May 1998**

Dear state or local leader:

I am pleased to respond to the President's directive with a guide for state and local policy-makers confronting the challenge of chronically low-performing schools. This guide speaks to leaders who want to turn around low-performing schools by making fundamental changes that create a safe, orderly environment that focuses on high standards of teaching and learning for all students.

There is little doubt that some of our schools are failing to provide the kind of educational experience we want for our children. In too many schools, expectations of students are low, teachers and parents are frustrated, and academic performance is poor. Particularly in our nation's highest-poverty urban schools, where two-thirds of the students fail to meet even minimum standards of achievement, the need for change is urgent.

There is no one place to lay the blame for low-performing schools. Many problems — poverty, limited resources, family stress, poor teacher training, unsafe learning environments, and other factors — contribute to frustration on the part of teachers, disillusionment on the part of communities, and discouragingly low levels of student achievement. While these problems are serious and highlight the complexity of the challenges facing schools, they cannot thwart our efforts to improve our schools.

We know that in countless communities, low-performing schools can and are being turned around. Our task is to make *every* public school a quality environment that focuses on teaching and learning. If we do not make that effort, we are sending a devastating message to children about our commitment to their well-being and to the nation's future.

This guide highlights how state, district, and community leaders can help schools focus on high standards of teaching and learning, build commitment for fundamental improvements in low-performing schools, and implement strategies to raise student achievement. The guide also examines approaches that states and districts are using to intervene in persistently low-performing schools. From Kentucky to Texas and Boston to San Francisco, public leaders are raising their expectations for students and schools, supporting system-wide reforms that work, and demanding school and student accountability for performance. Across the nation, there are examples of schools that, with a bold set of strategies, are changing what happens between teachers and students in the classroom, focusing on learning, and improving student achievement. Turning around low-performing schools is hard work, but it is the responsibility of each and every community in America.

Our society is only as strong as the education of our people. Let us raise our expectations of our schools. Let us dedicate ourselves to ensuring that all schools provide children with the skills they need to be successful and productive citizens. Let us work together to turn around low-performing schools.

Attached is a copy of the Executive Summary of "Turning Around Low-Performing Schools." For a copy of the full guide, please call the Department of Education at 1-800-USA-LEARN.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Dick Riley", with a stylized flourish at the end.

Richard W. Riley

Executive Summary

As we approach the 21st century, American public education is rising to meet a new challenge — high expectations and achievement for *all* students in *every* school. States and school districts are raising academic standards and making efforts to align curriculum, assessments, teacher training, and instruction with these challenging standards. The U.S. Department of Education is supporting these efforts with programs and resources to help improve teaching and learning in schools across the nation.

Expecting more from schools and students demands that state and district leaders face the important task of improving low-performing schools. In some of our schools, student achievement is dismal. Data from the National Assessment of Educational Progress show that the academic performance of students in our nation's highest-poverty schools is often several grade levels behind that of students in low-poverty schools. In low-performing schools, teachers sometimes have low expectations of students and feel that they can do little to improve student performance. Often the environment is not conducive to learning — teachers are burnt out, school safety is a problem, and students and the community are disengaged. Many low-performing schools are located in impoverished communities where family distress, crime, and violence are prevalent.

Limited financial, human, and program resources can leave these schools without the support they need to deliver high-quality instruction.

Turning around low-performing schools is not easy. It involves making strategic decisions about instructional practices and focusing all school staff on aligning every aspect of school operations, from professional development to parent and community involvement, in order to support and sustain efforts to improve student achievement.

Low-performing schools rarely have the capacity to make these kinds of changes on their own. While much of what it takes to turn around a low-performing school can occur only within the school itself and with the cooperation and commitment of school staff, states and school districts must provide the critical impetus and support for the process of change.

Fixing Low-Performing Schools: Pathways to Progress

- ✓ Set high expectations for students.
- ✓ Hold schools accountable for performance.
- ✓ Provide a safe learning environment.
- ✓ Create leaders at school and district levels.
- ✓ Let leaders lead.
- ✓ Recruit and retain the best teachers.
- ✓ Train teachers in instruction and curriculum.
- ✓ Support students with extra help and time.
- ✓ Involve the community in schooling.
- ✓ Create smaller schools.
- ✓ Close or reconstitute bad schools.

-Adapted from *Education Week*, January 8, 1998

By setting high academic standards, holding all schools accountable for performance, and identifying schools that do not meet those standards, states and districts are taking

important steps to raise expectations for all students. For schools that do not meet expectations, states and districts can do much to provide the support necessary to help them focus on improving teaching and learning. In schools where student achievement remains persistently low, many states and districts are actively intervening with resources and technical assistance to further the school improvement process. This guide describes some of the strategies that states and districts are pursuing to help turn around low-performing schools. It also suggests concrete actions that state, district, and school leaders, as well as parents and community members, can take. The guide concludes with an inventory of federal resources that can support efforts to turn around low-performing schools.

Raising the Stakes: Setting High Standards for Performance

Across the nation, states and districts are raising the stakes by establishing procedures and standards to define expectations for students, identify poor performance, and hold schools accountable for student achievement. Texas, for example, annually collects achievement data from the Texas Assessment of Academic Skills on its more than 3.7 million students. The state uses this data to measure not only progress at the school level but academic performance by racial/ethnic and income categories. For a school to be rated "acceptable" in Texas, at least 40 percent of all students in each racial and economic category must pass each section of the assessment. In addition, schools must maintain an attendance rate of at least 94 percent, and a dropout rate of no more than 6 percent. The data on each school is made available to the public and performance standards increase over time. In Texas, and in many other states and districts across the nation, schools that do not meet standards of performance are subject to sanctions or state and local intervention.

States and districts also are sending strong signals to students about their own accountability for academic performance. Chicago, for example, has committed to eliminating social promotion — the automatic passing of students from grade to grade regardless of whether they have mastered necessary skills. Districtwide, students who perform below minimum standards at key grades are required to participate in a seven-week summer school program.

Holding schools and students more accountable for performance is forcing states and districts to face the issue of low-performing schools head-on. Once these schools have been identified, how can states and districts help them do what it takes to improve student achievement?

Focus on Learning: Promising Strategies for Improving Student Achievement

The bottom line is for low-performing schools to make changes that will allow them to deliver high-quality curriculum and instruction so that all children reach challenging academic standards. This may seem straightforward, but it is not easy — for any school. Effective

schools are places where there is a coherent program for teaching and learning and where all key elements in the school are aligned with that focus. In the case of low-performing schools, states and districts can provide assistance by:

- **Helping schools gain control of the learning environment.** This is a prerequisite to focusing on learning. Schools cannot effectively implement instructional changes if they do not first address student discipline, safety, and high absenteeism. Districts can help school leaders by instituting a "zero tolerance" policy for violence and drugs and by consistently and fairly enforcing such policies. School uniforms and effective classroom management strategies also can help create an environment conducive to learning. Gaining control of the school environment means more than just implementing get-tough discipline policies; it also involves showing respect for students and giving them responsibilities, as members of the school community, for maintaining a safe environment for learning.
- **Concentrating resources and efforts on providing students with challenging curriculum and high-quality instruction.** If students are to be held accountable for reaching high standards of performance, then they must be offered the kinds of curriculum and instruction that will help them meet that challenge. Districts must demand that all schools offer challenging coursework to all students. To help ensure that every student reaches high standards, states and districts can use resources to increase instructional time, extend the school day or the school year, and offer after-school assistance to students who need it.
- **Providing services so that young children come to school ready to learn.** A child's early environment is critical to intellectual development and school success. In recognition of this fact, states and school districts can help ensure that more children benefit from early childhood services. In addition to providing pre-kindergarten for children, many local education agencies are partnering with community organizations to implement family literacy programs, such as Even Start, that support early childhood education, school readiness, and parent involvement in learning activities.
- **Creating a professional development program aligned with the content of curriculum and focused on improving instruction.** Professional development is an often neglected element of the academic program in low-performing schools. To be effective, professional development activities must center on the classroom. Community School District #2 in New York City, for example, concentrates its professional development resources and time on engaging teachers in learning about the materials they teach and skills they need to improve classroom instruction. The district works to identify teachers that need assistance and helps to counsel teachers out of the profession if they do not improve.
- **Helping schools implement comprehensive school reform programs.** Creating coherent educational programs in low-performing schools usually requires changes in

all aspects of a school, including its curriculum and academic standards, school governance, community-school relationships, staff development, technology, parent involvement, and services to meet children's needs. For this reason, Title I of the Elementary and Secondary Education Act emphasizes the need for schoolwide programs in high-poverty, low-performing schools. There are a number of research-based models and designs available to help schools address these multiple aspects of school effectiveness, and many provide technical assistance to help schools implement the designs. Districts such as San Antonio, Memphis, and Cincinnati are implementing a number of these models in a large proportion of their schools.

Building School Capacity: Systemic Support for the Process of Change

Research tells us that high-performing schools align curriculum, classroom practices, and professional development with high academic standards for all students. These schools also build a sense of teamwork among staff, work in partnership with parents and the community, and use performance data to inform choices and create a cycle of continuous improvement.

District support for these practices is key for building the capacity of schools to improve student achievement. Yet, low-performing schools are sometimes embedded in troubled school systems that cannot support the school improvement process. Individual school efforts can be thwarted by districts that fail to provide leadership and that lack the focus and long-term commitment necessary for turning around low-performing schools.

Therefore, part of the process of building the capacity of low-performing schools involves setting priorities on the district level, such as:

- **Ensuring strong leadership at the school.** Districts must recruit principals who will serve as instructional leaders.
- **Promoting policies that encourage teacher commitment to reform.** Districts should hire teachers enthusiastic about change and willing to work in low-performing schools. Districts also can be flexible, allowing teachers the chance to leave a school if they do not want to participate in the school reform process. Teacher and staff commitment to improving schools can be fostered by efforts to create smaller schools, which generally have better communication and collaboration among staff — two ingredients that are essential for creating a shared purpose and collective responsibility for school improvement.
- **Using resources strategically.** Schools must make tough choices about the ways they allocate their resources if they are to focus on improving teaching and learning. Low-performing schools and school districts often have multiple competing priorities. While districts and schools may implement separate programs intended to address

specific needs, the programs can be unfocused, disjointed, or work at cross-purposes. Pieced together, these multiple efforts often do not add up to a coherent whole. Districts must help schools coordinate and concentrate their resources on classroom instruction.

Districts also can do much to streamline their administrative operations and help redirect resources into the classroom. For example, part of Philadelphia's education reform plan "Children Achieving" involves implementing cost-cutting administrative reforms. Over the past two years, Philadelphia has been able to save more than \$29 million. To the extent that such resources can be targeted toward low-performing schools that work to develop coherent school improvement plans, streamlining district budgets can boost low-performing schools and help raise public and community confidence in local public school systems.

- **Helping schools use performance data to drive improvement.** Using data is important for identifying patterns of failure, diagnosing problems, and matching concrete solutions to educational needs. States such as Maryland and districts such as Minneapolis are disaggregating test scores to help identify causes for low performance, develop appropriate improvement strategies, and monitor progress as a strategy for continuous improvement.
- **Working in partnership with the community.** Schools cannot do their jobs alone. Low-performing schools, in particular, need the assistance of community stakeholders to raise student performance. Parent involvement is essential. Local businesses, colleges, and universities are invaluable sources of support. Teacher unions can be cooperative allies in the process of change if they are invited to work in partnership to improve low-performing schools.
- **Providing incentives for change and support for innovation.** Districts can help support school-level change by following the lessons of high-performance organizations. In many states, local educators, parents, community members, and school board members can create public charter schools that operate under performance contracts that provide greater autonomy along with accountability for results. Public school choice and open enrollment policies also can provide incentives for school improvement. Boston, for instance, allows parents to choose from an array of neighborhood schools, magnet schools, and public charter schools. Districts also can provide incentives for school improvement by rewarding success. Charlotte-Mecklenburg's Benchmark Goals program, for example, gives cash awards to teachers whose students meet a range of goals that reflect improvements over previous performance.

Intervening in Chronically Low-Performing Schools

Because low-performing schools often have little capacity to make major reforms demanded by accountability policies, many states and districts are providing systemwide support for school improvement. Twenty-three states have policies for intervening and mandating major changes in chronically low-performing schools — from helping “redesign” schools to, as a last resort, reconstituting failing schools.

In many cases, intervention has been a collaborative experience. For example, New York State has developed a process to help redesign low-performing schools. Teams of teachers, board of education members, union representatives, parents, and curriculum experts led by district superintendents conduct four-day visits to low-performing schools to examine all aspects of school operations. Based on the recommendations of review teams, schools and districts develop corrective action plans. In New York City, the process includes assigning low-performing schools to the “Chancellor’s District.” A school assigned to the special district receives extra resources and technical assistance until the district determines that the school has the capacity and commitment to support its redesign plan.

Districts such as Chicago and San Francisco have employed reconstitution measures in attempting to turn around chronically low-performing schools. While the strategy encompasses a number of practices, it generally represents the extreme along a continuum of intervention strategies. In its basic form, reconstitution involves closing a school and reopening it with new school leaders and usually with new teachers and staff. Reconstitution policies are controversial and there is no conclusive data about whether reconstitution is an effective strategy for school improvement. Some believe that the threat of reconstitution has been an important force for leveraging change in chronically low-performing schools. Opponents believe reconstitution policies unfairly place the blame for poor student achievement on teachers and damage fledgling school communities.

Regardless of the individual policy, state and district intervention in low-performing schools cannot succeed without the cooperation and commitment of those who actually work in the school. Turning around low-performing schools is difficult work. It requires high expectations, a focus on learning, a commitment to students, strong leadership, trust among school staff, and collective responsibility for student achievement. States and districts cannot dictate that schools have these characteristics, but they do have a critical leadership role in setting the context for change and raising the capacity of schools to acquire these attributes.

U.S. Department of Education Support

President Clinton and the U.S. Department of Education are committed to providing the support needed to help turn around low-performing schools. For example, beginning in July 1998, the Department will provide \$145 million for states to award to districts and schools working to implement high-quality, research-based comprehensive school reform

programs. Along with Title I of the Elementary and Secondary Education Act and Goals 2000, this Comprehensive School Reform Demonstration Program will present an opportunity for districts to target their lowest-performing schools for schoolwide improvement models.

President Clinton has also proposed several initiatives to help increase student achievement, particularly in high-poverty schools, including:

- **Educational Opportunity Zones** to help high-poverty urban and rural districts implement some of the kinds of policies highlighted in this guide that support school accountability and improvements in student performance;
- **Reducing class size** to a national average of 18 students per class in the early grades, a policy that research shows would especially benefit students in high-poverty schools;
- **America Reads Challenge**, an initiative that encourages school and community partnerships to provide quality reading instruction through linking in-school and out-of-school reading programs. The goal is to ensure that all children learn to read well and independently by the end of third grade;
- **21st Century Community Learning Centers** to fund school-community partnerships to build or expand after-school, extended learning programs for school-age children; and
- **School Construction Initiative** to help modernize school buildings through interest-free bonds to support a high-quality teaching and learning environment and to alleviate classroom overcrowding.

As we face a new century, it is time for America to renew its commitment to future generations. There is a role for each and every member of the school community in raising our expectations for all students, providing a safe learning environment, aligning educational resources and instruction with high academic standards, and choosing long-term improvement strategies. This guide provides examples of promising state, district, and school practices for helping children to learn, and suggests concrete steps that state and local policy makers, school leaders, parents, and community stakeholders can take to fix low-performing schools. Through these efforts, we can work together to make all schools places where students strive toward high levels of learning and achievement.

*America's
Choice:
high
skills
or
low wages!*

*The Report of
The Commission on the Skills of the American Workforce
June 1990*

NATIONAL
CENTER
ON
EDUCATION
AND THE
ECONOMY

EXECUTIVE SUMMARY

The Problem

Since 1969, real average weekly earnings in the United States have fallen by more than 12 percent. This burden has been shared unequally. The incomes of our top 30 percent of earners increased while those of the other 70 percent spiraled downward.

In many families, it now takes two people working to make ends meet, where one was sufficient in the past.

The United States is in the midst of the second longest economic expansion in its history. But that expansion is built largely on the fact that 50 percent of our population is employed compared with 40 percent in 1973. Forty million new jobs were created as the 'baby boom' generation reached working age, and more women entered the workforce. More of us have been working so we produced more.

However, workforce growth will slow dramatically in the 1990's. We can no longer grow substantially just by adding new workers.

The key to maintaining, to say nothing of improving, our standard of living is productivity growth — more products and services from every member of the workforce.

But, during the past two decades, our productivity growth has slowed to a crawl. It now takes nearly three years to achieve the same productivity improvement we used to achieve in one year.

If productivity continues to falter, we can expect one of two futures. Either the top 30 percent of our population will grow wealthier while the bottom 70 percent becomes progressively poorer or we all slide into relative poverty together.

The Task

To ensure a more prosperous future, we must improve productivity and our competitive position. We cannot simply do this by using better machinery, because low wage countries can now use the same machines and can still sell their products more cheaply than we can.

The key to productivity improvement for a high wage nation lies in the third industrial revolution now taking place in the world. The steam engine and electric motor drove the first two industrial revolutions, causing profound changes in work organization. This boosted productivity, quality and living standards dramatically. The creation of the modern factory in the 1800's and mass production in the 1900's followed these technology breakthroughs.

The advent of the computer, high speed communication and universal education are heralding a third industrial revolution, a revolution the key feature of which is high performance work organization.

The Organization Of Work In America

The organization of America's workplaces today is largely modeled after the system of mass manufacture pioneered during the early 1900's. The premise is simple: Break complex jobs into a myriad of simple rote tasks, which the worker then repeats with machine-like efficiency.

The system is managed by a small group of educated planners and supervisors who do the thinking for the organization. They plan strategy, implement changes, motivate the workers and solve problems. Extensive administrative procedures allow managers to keep control of a large number of workers. This form of work organization is often referred to as the 'Taylor' model.

Most employees under this model need not be educated. It is far more important that they be reliable, steady and willing to follow directions.

But in the world's best companies, new high performance work organizations are replacing this 'Taylor' method. These companies are using a new approach to

unleash major advances in productivity, quality, variety and speed of new product introductions.

Mass production methods will continue to produce high volume, inexpensive goods and services for a long time to come. But what the world is prepared to pay high prices and high wages for now is quality, variety and responsiveness to changing consumer tastes, the very qualities that the new methods of organizing work make possible.

'Tayloristic' methods are not well suited to these goals. Firms struggling to apply the traditional methods of work organization to more complex technologies, more frequent product introductions, increased quality requirements and proliferating product variety often create cumbersome and inefficient bureaucracies.

The new high performance forms of work organization operate very differently. Rather than increasing bureaucracy, they reduce it by giving front-line workers more responsibility. Workers are asked to use judgment and make decisions. Management layers disappear as front-line workers assume responsibility for many of the tasks — from quality control to production scheduling — that others used to do.

Work organizations like these require large investments in training. Workers' pay levels often rise to reflect their greater qualifications and responsibilities. But the productivity and quality gains more than offset the costs to the company of higher wages and skills development.

Despite these advantages, 95 percent of American companies still cling to old forms of work organization.

Is There A Skills Shortage In The United States?

Because most American employers organize work in a way that does not require high skills, they report no shortage of people who have such skills and foresee no such shortage. With some exceptions, the education and skill levels of American workers roughly match the demands of their jobs.

Our research did reveal a wide range of concerns covered under the blanket term of 'skills.' While businesses everywhere complained about the quality of their applicants, few talked about the kinds of skills acquired in school. The primary concern of more than 80 percent of employers was finding workers with a good work ethic and appropriate social behavior: 'reliable,' 'a good attitude,' 'a pleasant appearance,' 'a good personality.'

Most employers we interviewed do not expect their skill requirements to change. Despite the widespread presumption that advancing technology and the evolving

service economy will create jobs demanding higher skills, only five percent of employers were concerned about a skills shortage. These were mainly large manufacturers, financial service organizations and communications companies.

The reason we have no skills shortage today is that we are using a turn-of-the-century work organization. If we want to compete more effectively in the global economy, we will have to move to a high productivity work organization.

How We Prepare Our Front-Line Workers For Work

More than 70 percent of the jobs in America will not require a college education by the year 2000. These jobs are the backbone of our economy, and the productivity of workers in these jobs will make or break our economic future.

No nation has produced a highly qualified technical workforce without first providing its workers with a strong general education. But our children rank at the bottom on most international tests — behind children in Europe and East Asia, even behind children in some newly industrialized countries.

More than any other country in the world, the United States believes that natural ability, rather than effort, explains achievement. The tragedy is that we communicate

to millions of students every year, especially to low-income and minority students, that we do not believe that they have what it takes to learn. They then live up to our expectations, despite the evidence that they can meet very high performance standards under the right conditions.

Unlike virtually all of our leading competitors, we have no national system capable of setting high academic standards for the non-college bound or of assessing their achievement against those standards.

America may have the worst school-to-work transition system of any advanced industrial country. Students who know few adults to help them get their first job are left to sink or swim.

Only eight percent of our front-line workers receive any formal training once on the job, and this is usually limited to orientation for new hires or short courses on team building or safety.

The American post-secondary education and training system was never designed to meet the needs of our front-line workers. The system is a combination of education programs for full-time college students and short term training for the severely disadvantaged, and can be difficult to access. Because employers have not set training standards, few students can be sure that there is a market for the courses they pursue. Education is rarely connected to training and both are rarely connected to an effective job service function.

Another Way

While the foreign nations we studied differ in economy and culture, they share an approach to the education and training of their workers and to high productivity work organization.

- They insist that virtually all of their students reach a high educational standard. We do not.
- They provide 'professionalized' education to non-college bound students to prepare them for their trades and to ease their school-to-work transition. We do not.
- They operate comprehensive labor market systems which combine training, labor market information, job search and income maintenance for the unemployed. We do not.
- They support company based training through general revenue or payroll tax based financing schemes. We do not.
- They have national consensus on the importance of moving to high productivity forms of work organization and building high wage economies. We do not.

Our approaches have served us well in the past. They will not serve us well in the future.

The Choice

Americans are unwittingly making a choice. It is a choice that most of us would probably not make were we aware of its consequences. Yet every day, that choice is becoming more difficult to reverse. It is a choice which undermines the American dream of economic opportunity for all. It is a choice that will lead to an America where 30 percent of our people may do well — at least for awhile — but the other 70 percent will see their dreams slip away.

The choice that America faces is a choice between high skills and low wages. Gradually, silently, we are choosing low wages.

We still have time to make the other choice — one that will lead us to a more prosperous future. To make this choice, we must fundamentally change our approach to work and education.

1. Problem: Two factors stand in the way of producing a highly educated workforce: We lack a clear standard of achievement and few students are motivated to work hard in school. One reason that students going right to work after school have little motivation to study hard is that they see little or no relationship between how well they do in school and what kind of job they can get after school. Other advanced industrial nations have stringent performance standards that virtually all students must meet at about age 16 and that directly affect their employment prospects.

Recommendation: *A new educational performance standard should be set for all students, to be met by age 16. This standard should be established nationally and benchmarked to the highest in the world.*

We propose that all American students meet a national standard of educational excellence by age 16, or soon thereafter. Students passing a series of performance based assessments that incorporate the standard would be awarded a Certificate of Initial Mastery.

Possession of the Certificate of Initial Mastery would qualify the student to choose among going to work, entering a college preparatory program or studying for a Technical and Professional Certificate, described below.

Creation of the Certificate of Initial Mastery standard would require a new approach to student performance assessment. We recommend the creation of new performance based examinations for which students can explicitly prepare. The assessment system would provide multiple opportunities for success rather than a single high stakes moment of possible failure. Most important, the examination, though set at a very high standard, is not intended as a sorting mechanism on the pattern of virtually all the major tests now in use. Our goal is to

set a tough standard that almost everyone will reach, although not all at the same time.

Once created, this system would establish objective standards for students and educators, motivate students and give employers an objective means to evaluate the accomplishments of students.

2. Problem: More than 20 percent of our students drop out of high school — almost 50 percent in many of our inner cities. These dropouts go on to make up more than one third of our front-line workforce. Turning our backs on those dropouts, as we do now, is tantamount to turning our backs on our future workforce.

Recommendation: *The states should take responsibility for assuring that virtually all students achieve the Certificate of Initial Mastery. Through the new local Employment and Training Boards, states, with federal assistance, should create and fund alternative learning environments for those who cannot attain the Certificate of Initial Mastery in regular schools.*

All students should be guaranteed the educational attention necessary to attain the Certificate of Initial Mastery by age 16, or as soon as possible thereafter. Youth Centers should be established to enroll school dropouts and help them reach that standard.

Federal, state and local funds should be raised or reallocated to finance these dropout recovery programs. Once the Youth Centers are created, children should not be permitted to work before the age of 18 unless they have attained the Certificate of Initial Mastery or are enrolled in a program to attain it.

3. Problem: Other industrial nations have multi-year career-oriented educational programs that prepare students to operate at a professional level in the workplace. Graduates of these programs have the skills to hit the ground running when they get their first full-time job at age 19 or 20. America prepares only a tiny fraction of its non-college bound students for work. As a result, most flounder in the labor market, moving from low paying job to low paying job until their mid-twenties, never being seriously trained.

Recommendation: *A comprehensive system of Technical and Professional Certificates and associate's degrees should be created for the majority of our students and adult workers who do not pursue a baccalaureate degree.*

Technical and Professional Certificates would be offered across the entire range of service and manufacturing occupations. A student could earn the entry-level occupation specific certificate after completing a two- to four-year program of combined work and

study, depending upon the field. A sequence of advanced certificates, attesting to mastery of more complex skills, would be available and could be obtained throughout one's career.

The Secretary of Labor should convene national committees of business, labor, education and public representatives to define certification standards for two- to four-year programs of professional preparation in a broad range of occupations. These programs should combine general education with specific occupational skills and should include a significant work component.

Students could pursue these programs at a wide variety of institutions accredited to offer them, including high schools, community colleges and proprietary schools. The system should be designed to make it possible for students to move easily between the Certificate programs and college.

A means should be established to ensure that all students can receive financing to pursue these programs.

4. Problem: The vast majority of American employers are not moving to high performance work organizations, nor are they investing to train their non-managerial employees for these new work organizations. The movement to high performance work organizations is more widespread in

other nations, and training of front-line workers, funded in part by national assessments on employers or general public revenues, is commonplace.

Recommendation: *All employers should be given incentives and assistance to invest in the further education and training of their workers and to pursue high productivity forms of work organization.*

We propose a system whereby all employers will invest at least one percent of their payroll for the education and training of their workers. Those who do not wish to participate would contribute the one percent to a general training fund, to be used by states to upgrade worker skills. We further recommend that public technical assistance be provided to companies, particularly small businesses, to assist them in moving to higher performance work organizations.

5. Problem: The United States is not well organized to provide the highly skilled workers needed to support the emerging high performance work organizations. Public policy on worker training has been largely passive, except for the needs of a small portion of the severely disadvantaged population. The training system is fragmented with respect to policies, administration and service delivery.

Recommendation: A system of Employment and Training Boards should be established by Federal and state governments, together with local leadership, to organize and oversee the new school-to-work transition programs and training systems we propose.

We envision a new, more comprehensive system where skills development and upgrading for the majority of our workers becomes a central aim of public policy.

The key to accomplishing these goals is finding a way to enable the leaders of our communities to take responsibility for building a comprehensive system that meets their needs. The local Employment and Training Boards for each major labor market would:

- Take responsibility for the school-to-work and Youth Center-to-work transition for young people.
- Manage and oversee the Youth Centers.
- Manage and oversee a 'second chance' system for adults seeking the Certificate of Initial Mastery.
- Manage and oversee the system for awarding Technical and Professional Certificates at the local level.
- Manage a labor market information system.
- Manage and oversee the job service.
- Coordinate existing programs.

The states would need to create a parallel structure to support the local Boards, coordinate statewide functions and establish state standards for their operation.

In Conclusion

America is headed toward an economic cliff. We will no longer be able to put a higher proportion of our people to work to generate economic growth. If basic changes are not made, real wages will continue to fall, especially for the majority who do not graduate from four-year colleges. The gap between economic 'haves' and 'have nots' will widen still further and social tensions will deepen.

Our recommendations provide an alternative for America. We do not pretend that this vision will be easily accepted or quickly implemented. But we also cannot pretend that the status quo is an option. It is no longer possible to be a high wage, low skill nation. We have choices to make:

- Do we continue to define educational success as 'time in the seat,' or choose a new system that focuses on the demonstrated achievement of high standards?
- Do we continue to provide little incentive for non-college bound students to study hard and take tough subjects, or choose a system that will reward real effort with better pay and better jobs?

- Do we continue to turn our backs on America's school dropouts, or choose to take responsibility for educating them?
- Do we continue to provide unskilled workers for unskilled jobs, or train skilled workers and give companies incentives to deploy them in high performance work organizations?
- Do we continue in most companies to limit training to a select handful of managers and professionals, or choose to provide training to front-line workers as well?
- Do we cling to a public employment and training system fragmented by institutional barriers, muddled by overlapping bureaucracies and operating at the margins of the labor market, or do we choose a unified system that addresses itself to a majority of workers?
- Do we continue to remain indifferent to the low wage path being chosen by many companies, or do we provide incentives for high productivity choices?

Taken together, the Commission's recommendations provide the framework for developing a high quality American education and training system, closely linked to high performance work organizations. The system we propose provides a uniquely American solution. Boldly executed, it has the potential not simply to put us on an

equal footing with our competitors, but to allow us to leap ahead, to build the world's premier workforce. In so doing, we will create a formidable competitive advantage.

The status quo is not an option. The choice we have is to become a nation of high skills or one of low wages.

The choice is ours. It should be clear. It must be made.