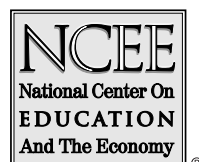


High School and Beyond: The System is the Problem — And the Solution

*Marc Tucker, President
National Center on Education and the Economy*

October 2, 2002

This paper was commissioned by Jobs For the Future, and has been prepared for discussion at two meetings to be held in October 2002 sponsored by the Gates Foundation, and co-sponsored by the Aspen Institute, Jobs for the Future, the National Conference of State Legislatures and the National Governors' Association.



High School and Beyond: The System is the Problem — And the Solution

Marc Tucker, President
National Center on Education and the Economy¹

High school is the Waterloo of the current round of school reform. There are many signs that the standards and accountability movement is having a substantial effect on the performance of elementary schools, even those that have a history of poor performance. And there are grounds for hope that real progress will be made in the middle schools. But high schools are another matter. Virtually everyone familiar with this landscape believes that our high schools are the most deeply troubled and most difficult to change of our elementary and secondary education institutions.

Change is clearly needed. About a quarter of the students who enroll in the ninth grade drop out before they graduate. Close to 70 percent of those who graduate (about half of the cohort) go on to some form of two year or four year college, but half or more of those who enter college saying that they want a degree do not have one six years after they enrolled (leaving only 25 percent of the original cohort with some sort of postsecondary qualification).

Why, you might ask, is that bad? Maybe it is alright if only 25 percent of the cohort have some sort of postsecondary qualification. How would we judge what is good enough?

One way to think about that issue is to look at the job of auto mechanic. The good auto mechanic jobs are in the dealerships. In most places, these days, you cannot get a job as an mechanic at a car dealership without a two year college

¹ This paper was commissioned by Jobs For the Future, and has been prepared for discussion at two meetings to be held in October 2002 sponsored by the Gates Foundation, and co-sponsored by the Aspen Institute, Jobs for the Future, the National Conference of State Legislatures and the National Governors' Association.

degree in a program the dealers helped design. The same is true for many welding jobs. And for many responsible entry level jobs in construction.

This is because the content of these jobs now requires greater skills in English, math and science than used to be the case, and partly because of rapid advances in technology.

The bottom line is that it is still possible for young people to leave high school with an eighth grade level of literacy or less and get a low-skill job that pays a little more than the minimum wage. But it is not possible for that young person to support a family on that wage or with that kind of education. More and more, we can predict with accuracy that a young person who leaves high school unable to complete successfully at least a two year college degree program faces a life of constant economic struggle. That is why the fact that only 25 percent of the cohort meets that goal now is very ominous, for both the individuals involved and the nation as a whole.

The reason only 25 percent make it is not a mystery. It is probable that as many as half of all students who leave high school with or without a diploma have no more than an eighth grade level of literacy. So it is little wonder that a quarter of the courses offered in our higher education institutions are remedial courses, that is to say, middle school or high school courses. It is easy enough for high school graduates to get in to our open enrolment institutions. The problem is getting out with a degree that means something. The reality is that the majority of the postsecondary programs that lead to careers that pay well require reading, writing and mathematical skills that as many as half of all high school leavers do not have. These students enter our community, technical and four year colleges full of hope, but one-third of those who start do not return after their freshman year and many of the rest end up taking courses intermittently without ever getting a degree that qualifies them for the kind of careers they expected their work in college to qualify them for.

But, I can hear you saying, this is nonsense. There are plenty of jobs that do not require college degrees and high schools have been successfully preparing students for these jobs for years. Why should that not continue to be the case? The traditional options for students not planning to go to college are still widely available: the general curriculum and the high school vocational curriculum. Students can still take general education courses and get a job in retail sales or some other area of the economy that requires only the most basic of skills. Of, if they are more ambitious, they can get into a vocational education program in high school, community college or technical college that may qualify them for technical jobs that pay better than the jobs just described.

But these paths are increasingly problematic, too. Competition from low-wage countries for low-skill jobs is drying up the supply of low skill-low pay jobs and keeping the wages to be earned in those jobs low. There are now many more people seeking low skill, low pay jobs (because those are the only jobs they are qualified for) than there are jobs available for them to fill. That will be even more true in the years ahead if the nation as a whole succeeds economically.

But what about the skilled jobs that our trade schools used to prepare students for? Many of these jobs pay well. And the demand for people who can do them is as strong as ever. But the fact is that it is now almost impossible for our comprehensive high schools to afford either the specialized equipment or the specialized faculty needed to train their students for jobs like auto mechanic that used to be the mainstay of the high school vocational program, let alone other jobs requiring higher technical skills. That is why the automobile dealers went to the community colleges to create the two year programs in auto mechanics. Because most high school vocational education programs lack the resources to buy the expensive equipment and hire the specialized instructors needed to keep up with ever more complex technologies, our vocational programs are rapidly becoming repositories for our forgotten — and increasingly angry — adolescents.

So far, this analysis would suggest that we have a big problem in our high schools, but our postsecondary education institutions are doing a good job

picking up the pieces. Not so. In one state after another, community colleges that used to have a strong vocational and technical program are opting to expand their general education programs at the expense of their technical training programs, because they find it increasingly hard to find students who have the English and math skills that their technical training programs require, and because it is cheaper and therefore more profitable to offer the general education programs. There are, of course, no employers looking for people with two-year general education degrees. The only value of these general education programs is as transfer programs to the upper division of four year colleges. But the failure rate of students in the general education programs is very high (because they are often admitted to these degree programs without first having to show that they can do college level work) and the transfer rate to four year colleges is very low (for the same reason and because these students often wind up in general education programs by default, having failed to succeed in more technically demanding programs). But the economics, as I just pointed out, favor expansion of these general education programs anyway, despite these facts.

The reality is that the incentives that operate on our postsecondary institutions cause them to take anyone they can get who can be counted against the full-time-equivalent totals used to calculate their reimbursements from the state. They will take the most qualified students available if there are more students applying than they have room for, but they will take anyone who meets the minimum qualifications if the alternative is releasing their staff and shutting down their classrooms. Thus the failure of the schools to produce students who can do college level work is neatly matched by the willingness of the colleges to take anyone who can fog a glass if that is what is necessary to balance their budgets and keep their faculties employed.

The picture on the employment side matches the picture on the postsecondary side. There is a two-tier system in the United States. Large employers offering good careers will not hire young people who have just graduated high schools. The jobs available to freshly minted high school graduates tend to be offered by small employers or franchisees of large retailing or food service companies and

the pay and benefits tend to be very low in this tier. While the more desirable employers in the first tier have explicit hiring criteria, those in the lowest tier, just like the open enrolment institutions, will take the best that they can get. Many of these employers now routinely expect to have to provide basic literacy instruction and instruction in elementary arithmetic and fractions to their new hires.

In a system in which employers and colleges routinely take “the best that they can get,” the message to the high schools and the students is that virtually any student who can stagger to the finish line of high school can get a job or go to college and therefore has a glorious future awaiting them, despite the fact that their actual skill level may be well below that of a substantial fraction of the basic school graduates of many developing countries.

I have just described what can only be considered as a growing national disaster. As these economic forces continue to gather speed, more and more students will find themselves unable to hold their economic heads above water. As the high schools and community colleges continue to shut down their vocational programs, employers will find ever greater shortages of qualified technical personnel. Those employers that can do so will go offshore to get what they need. Others will invest in labor-saving technology or go out of business.

What we most need is a new system for bridging the end of compulsory education and the beginning of work and further education. By way of explaining what I mean by a system, I will quickly provide a composite sketch of the way a number of other advanced industrialized nations organize education for the years in which our students attend high school. The easiest way to identify the weaknesses of our present system is to contrast it with other established systems that are producing better results.

In the countries I have in mind, all students take more or less the same curriculum for their first nine or ten years, set to the same standards, and then go their separate ways. The stereotypical view of the European system is that the

decisions made by or for a student at the end of basic schooling are irrevocable for life. That was true at one time, but is no longer. In Denmark, for example, students who have elected gymnasium (the route to university) for their upper secondary path are increasingly making a lateral move afterwards to pick up a vocational credential. Similarly, governments are making it much easier for students who start in the upper secondary vocational curriculum to add enough demanding academic courses to qualify them to take the university exams, formerly open only to gymnasium students. Denmark has, in addition, created new paths for students in their upper secondary vocational schools that go directly to the university entrance exams. This program, the technical gymnasium program is just as demanding as the traditional gymnasium, but is composed of courses many of which are built around problems and projects. Graduates of this program are highly valued by both the universities and employers offering attractive careers and therefore have lots options.

These countries are responding to the same pressures we are — the drying up of low skill jobs and the enormous resulting political pressure to provide postsecondary education to virtually everyone — but they have some very important advantages over us.

First, many of these countries have done a much better job than we have in the first nine or ten years of the education process. The effects are most visible in the bottom half of the distribution, where their students typically achieve at far higher levels than our lower half. That means that they are better prepared for gymnasium and for a vocational education that requires serious intellectual effort. There are many factors that explain their success. Among those of most interest here are the following: common expectations for all students set by their standards and their examination systems, a standard curriculum that all students take through what we think of as the lower division of high school, schools that are typically much smaller than ours, especially at the upper grade levels, and the fact that their interscholastic sports program is organized and managed by their municipalities, not their school systems.

Second, in most of these countries, there is a national school leaving exam that serves also as a college (they would say university) entrance exam. There are very few private universities, so it is very clear how well a student has to do to go to university, thereby providing a powerful motivation to achieve. In our country, one can go to most institutions called colleges with no more than a high school diploma, the requirements for which are typically minimal.

Third, there is a much stronger tradition of vocational education in these nations, typically accompanied by a national system of occupational skills standards and strong employer participation. In most of northern Europe, students who do not meet the skills standards simply cannot get a job in their chosen occupation, so students planning to enter the work force after what we call high school have strong incentives to take tough courses and work hard in school. Employers play multiple roles in the process of training the students for their chosen occupations, assessing them against the standards and, in many other ways, easing the transition from school to work.

One other feature of these other systems is important to note. When students go from gymnasium or its equivalent to university, they are not in fact entering the equivalent of the American college. They are entering professional school. These students have finished their general education (including the experience our students are supposed to get in the first two years of college) in gymnasium. Gymnasium typically begins in the tenth or eleventh year of schooling and lasts three years. Thus university typically begins in the thirteenth or fourteenth year, whereas, in our system, professional education can begin anywhere from the junior year of college to the first year of graduate school. From the standpoint of system efficiency, these other — mostly European — nations have managed to create a system that produces the same or better outcomes while saving the cost of one to three years of very expensive university education.

Systems so constructed have many advantages. They are, among other things: 1) effective, in terms of producing a total population that is as highly skilled as that of any other nation and, no less important, able to learn quickly what it needs to

learn to adjust quickly to changes of all kinds as they come; 2) flexible, in terms of enabling people to pursue enormously varied objectives and to change their minds along the way; and 3) admirably efficient, in terms of the total cost in time and money needed to produce a person with a given qualification.

Certain other features of these systems are worth noting. They depend on having clearly demarcated parts of the system and on clear, universal standards that serve as gateways for moving from one part of the system to another, in particular from lower secondary education to upper secondary education, from upper secondary education to university, and from upper secondary vocational education into the labor market. The existence of these gates provides strong incentives for students at every level of the system to take tough courses and study hard, in order to reach their goals, which can only be won by successfully passing through these gates.

Second, these systems invest heavily in assessment, which is typically done by having real people examine the extended work product of the students and comparing it to the standards. Very few of these countries use the standardized, norm-referenced, machine-scored tests that are so popular in this country.

Third, the high schools in these countries are much smaller than those in the United States at the lower division level. Teachers frequently follow the students through the grades, getting to know both students and their families much better than is the case in the United States.

Fourth, the institutions in other countries offering programs at a level comparable to the upper division of high school here have the feel, not of our high schools, but of our community and technical colleges. Students are treated much more like adults and the place feels much less like a custodial institution.

Fifth, the countries that use systems of this sort are paying more and more attention to guidance, finding ways to help students understand their options and identify those that suit them.

Sixth, though these systems are dynamic, undergoing constant change, they are not an endless amorphous experiment. The governments that use systems of this sort believe that it is important to have structures that guarantee similar opportunities for students throughout the whole nation, structures that are simple enough and stable enough to be understood and negotiated by everyone, everywhere.

It is, I think, worthwhile to “helicopter up” to get a look at the structure of these systems from the broadest possible point of view. I will repeat some of the points just made, but you will see them, I hope, in a different context.

The point I want to return to and explore more thoroughly is the having to do with clear gateways and many flexible paths between those gateways. The modal pattern, as I said above, calls for nine or ten years of basic education set to a common set of standards. During their basic education, students take a common required curriculum with very few choices in it, culminating in a set of examinations set by the ministry. Students can then choose among an increasing variety of academic and vocational courses and programs and can mix and match those options. The range of their initial choices is constrained by the grades they received in their exams and their basic education courses, but, increasingly, students who did not do well in basic school can still get to university with enough hard work. The standards for getting into the next stage of education and for getting an entry level job in these systems are very clear and they are not waived. There are typically multiple pathways available for getting to the next destination, and there a wide variety of safety net programs and institutions that provide alternative routes to the established gateways for those who failed in the regular programs.

In the northern European version of these systems, there are three stages: primary education, secondary education and tertiary education. Primary and lower secondary education together constitute what I have called basic education in this paper and it runs through the first nine or ten years. It is the same for

everyone. Upper secondary education is the next three years for gymnasium students, the next two to five years for vocational education students. Tertiary education is advanced professional and technical education. The important gateways in these systems are the gateways between lower secondary and upper secondary education, between upper secondary and tertiary education and between education and work (these last are in the form of standards for acquiring a “qualification” to embark on a particular line of work, which qualifications are earned by passing a set of practical and written examinations).

It is this combination of fixed gateways with clear standards and multiple pathways for getting to those standards that makes these systems work as well as they do. The gateways serve to align the different levels of the system, in the sense that everyone providing a program at a given level knows what students entering that level know and can do. There is no “remediation” in a system like this, because one does not go on to a higher level in the system until one has met the standards required to do so. There are programs for students who have not succeeded at a given level of the system, to help them get to the point at which they can meet the standard for the entering the next stage of their education, but they do not confer credit for the next stage.

It is useful to briefly contrast what I have just described with the portrait of our own system with which we began. I will just hit a few high points, as follows:

- Whereas all students in the countries we have studied have strong incentives to take tough courses and study hard in school, few of ours do. Except for the students who plan to go to selective colleges (a small minority who do indeed work hard in high school), the rest believe that they can go to college with a minimum of effort. Because there are no formal qualifications for most low skill and semi-skilled jobs, students know that they can get many of these jobs with a high school diploma and some of them without. In their minds, getting a high school diploma means no more than getting a C or a D in courses with little content and not causing too much trouble in school. The end result is that, whereas almost

all students in the countries to which I am comparing us have to work hard in high school to get what they want after high school, few of our students have to do so. We have robbed our teachers of motivated students.

- Whereas other countries have created a common required curriculum for the first nine or ten years of schooling, we have permitted our schools to create a great variety of curricula for their students. These curricula reflect a wide range of expectations, most of them low.
- Whereas other nations use “gateway” exams to control access to the next tier of opportunity in their systems, the boundaries between tiers in our system are very porous. The result is that students below the top performers think they have no standards against which they must work to get what they want, or, worse still, they are not aware of the real standards that will be imposed at key points in their career until the deficit they have to make up to reach those standards is enormous, often insuperable.
- Our high schools are far larger, more anonymous and more custodial in character than the high schools in other countries with more successful systems, which produces students who less engaged, more alienated and less likely, as a result, to achieve.
- Our system is very much more costly than the other systems I have been describing for two important reasons: it takes years more to produce the same result because the onset of professional education comes so much later, and, we spend a fortune providing middle school and high school education in colleges with higher unit costs.
- Our system tends to produce mediocrity because employers and colleges are incited to take the best that they can get from a supply of applicants of indifferent quality; whereas, in the standards-based systems I have been describing, the applicants do not get to present themselves for consideration

until they have met certain explicit standards that the employers and colleges have helped set.

- Our system takes an enormous toll on both students and teachers — on students because many begin bored and end up cheated because they find out what the true standards for getting good jobs are too late to develop the skills they need to land them, on teachers because we rob them of motivated students.

We should not copy the system of any other nation and probably could not, even if we wanted to. But when you have fallen a long way behind the leaders, it is not out of order to take a look at the way that leaders get results before going off in another direction. No doubt, some Americans will take umbrage at the idea that we are not the leader, but the evidence is too overwhelming to ignore. The TIMSS studies showed not only that our high school students are far behind the pack in general science and general math, but that we are even farther behind in advanced math and science. The more recent PISA studies place us, at best, in the middle of the pack, far behind the leaders. Clearly, our graduate schools are the best in the world, attracting students from every quarter of the globe. But it is now clear that as many as half our lower division college students would not qualify for admission to postsecondary educational institutions in much of the rest of the industrialized world. And no one I have ever met believes that the United States is still competitive in vocational education at the high school level.

So I would like to offer a modest proposal for an American adaptation of the international system I have been describing. It is intended to enable us to reach the goals I described above, related to quality, flexibility and efficiency. The principles that underlie the proposals made below are those that our organization used to develop our America's Choice high school design, but they could just as easily become the basis for a state's formal 9-16 education policy.

STEP ONE: Establish the first Gateway: Create a state standard for entrance to the state college systems without remediation, and establish this as a standard

that all high school students must meet as a condition for advancing to the upper division of high school.

The first step would be to create a state standard for entrance into the bottom tier of the state higher education institutions. At a minimum, meeting this standard would certify that the person has the skills in reading, writing and mathematics needed to do college level work in those and other subjects. States would issue a certificate to high school students who meet this standard. The expectation would be that this standard would be met by the time a student is 16 years old or at the end of the tenth grade. There are two reasons to do this. First, this is the age by which most other advanced nations expect their students to complete the common curriculum, and there is no reason why it should take longer to do that in the United States than elsewhere. Second, if most students are expected to reach this goal by the end of their sophomore year, that will leave two or more years for students who have not reached that goal by the end of their sophomore year to reach that goal before they have to leave high school. The aim is to set a fixed standard. Some students would take longer to meet it than others, but all students would have to meet it to be admitted to a two-year or four-year state college. Setting this standard is not based on the assumption that everyone will go to college, but rather on the assumption that, in the current economic environment, it is the obligation of government to provide them with the skills they need to so.

STEP TWO: Develop assessments to judge whether students have met the standard stipulated for the first Gateway

The second step is to develop assessments adequate to make this determination. This is no small step. The only way to find out whether someone has the skills and knowledge to write an essay that meets the standard of college level work is to ask that person to write such an essay and read it and critically evaluate it. We acknowledge that this is so when it comes to the way we assess students taking the Advanced Placement tests, which cost \$75 per student per subject to take, but we do not do so when it comes to the typical state assessments at the tenth grade

level, on which we spend much less. It is also the case that virtually all experts on the subject agree that high stakes systems of the sort that I refer to here should be based on multiple modes of assessment. We would model the new assessments on the Cambridge University examination system, which includes course syllabi, end of course exams, end of course sequence exams, and a scoring system that takes into account not only the scores on the exams just mentioned, but also scores based on teacher grades on teacher-assigned work that are checked by professional assessors. The Cambridge tests do not cost as much as the Advanced Placement tests, but they are much more expensive than the typical state high stakes 10th grade test.

STEP THREE: Create the conditions that will make it possible for high schools to get all their students to the new college-ready standard

The third step is to create the tools, policies and support systems that will enable our high schools to get their students to the standards just described. What follows is a sketch, hardly a complete treatment of this immensely complex issue:

- Create policies and provide the funds needed to convert large high schools into much smaller institutions, on the order of four hundred students each. Where new buildings cannot be created, then the existing ones should be converted into buildings occupied by separate small schools located under one roof.
- Create a “standard state curriculum” for the lower division. By “standard state curriculum,” I mean actual syllabi that would specify the content and sequencing of about three quarters of the total course load for the lower division of high school, complete with end-of-course exams. Successful completion of these courses would normally mean that a student could expect to meet the standard for the exams on which the first Gateway certificate would be based. The rest of the time available in the freshman and sophomore years would be available for electives or for double period courses in the core subjects needed by students who enter high school two

or more grade levels behind. The state would also need to create syllabi and instructional materials for these double period courses and other safety net programs needed by students who enter two or more years behind in the core subjects. The idea of a standard state curriculum for the lower division of high school means that there will be no general track, no vocational track, no career academies (if by that is meant a program with a career education focus) and no distractions. It may mean the use of career themes or work-based learning for some students, not for the purpose of providing technical skills, but for the purpose of motivating students to continue their academic studies (more on this in a moment). These programs may employ a traditional pedagogy or a highly innovative one, but they exist for one purpose only — to get their students through the first gateway.

- Require low-performing high schools to use a comprehensive school design for high schools that has a record of improving the performance of low-performing schools. These schools are typically in chaos and suffer from poor leadership and therefore require the kind of extensive support and cohesive program that only a comprehensive school design can provide. Getting virtually all of our high school sophomores to the proposed Gateway standard will take a Herculean effort. Astonishingly little research has been done in the last fifty years on the problems of low performing high school students and even less on developing curriculum for them that really works. The states and the federal government need to greatly increase the level of effort on this front to get results on the scale that is needed.

STEP FOUR: Establish the options available to students who have successfully passed through the first Gateway

The next step is to carefully define in policy the options that are available to students who reach the new certificate standard. Those of us at the National Center on Education and the Economy who have been working on this problem

over the last 12 years are now convinced that the next step for all students should be the beginning of some form of college. If the standard that the student has met qualifies that student for do college level work, then why not send that student to college?

But they need not leave high school to embark on college, though they should have that option. Here's what I mean.

First, students who get their certificate and want to pursue a program leading to a two year technical degree or certificate ought to leave the high school and go straight to a community or technical college offering such a program. I have in mind here everything from programs in welding and auto mechanics to programs in software systems management, hotel and restaurant management, cardiovascular technology and technical graphics and design. Very few high schools in the United States can afford the equipment (which has to be constantly updated) and the faculty needed for such programs. The institutions that should have these programs are the community and technical colleges and that is where we should send students who want to pursue such programs.

States that elect to go down the path I am suggesting may turn around, however, to discover that their community colleges (many states do not have separate systems of technical colleges) are jettisoning their technical programs in favor of their general education programs, which are cheaper to operate, do not require that the students have strong reading, writing and math skills (though they should) and lead to a more prestigious position on the academic pecking order. The implication is that many states may have to strengthen the incentives operating on their community colleges to offer strong 2-year technical programs to make this aspect of this proposal work. Or they might choose instead to create a separate system of technical colleges, if they have not done so already. In any case, it is important to make sure that the incentives operating on the two year institutions are consistent with the goal of maintaining a strong system of technical education in the state, and do not operate in a way that tends to degrade that system. More on this below.

But what about the students who do not choose to leave their high school to pursue a technical program at the local community or technical college?

How many options these students have and the nature of the options will depend on the size and location of the school and the preferences of the community, but the common feature would be that all of the options would represent some form of going to college in high school. Among the examples of such programs would be the International Baccalaureate program. This program was conceived as the embodiment of a European gymnasium program set to a high European standard. Even the most selective of American selective colleges admit IB diploma holders as college sophomores. Another alternative would be a demanding program based on the admission requirements of the highest level of the state university system and including a substantial number of Advanced Placement courses, another way to enter college with a head start. Still a third option would be another program set to a high academic standard but employing a pedagogy heavily based on problems and projects. Our own organization will be working on the development of such a curriculum over the next few years. And there are other options. Some high schools may be able to offer only one such option. Others might be able to offer many. Most options will take advantage of faculty resident in the school, but others might be virtual, available from the World Wide Web.

In this conception of a new system, high schools and community colleges will compete directly for students. The public and the students will benefit greatly from such a competition. High schools, to compete successfully, will have to give their upper division high schools the look and feel of college in order to compete. They will look less like custodial institutions. Students will be free to come and go as they please, but they will be there because they want to be there and, as a result, will be much more likely to behave like good citizens of their schools and much more motivated to pay attention to their academic work.

Both the public and students will benefit enormously from cutting out what is now a largely wasted senior year in high school. College can begin right after the sophomore year, not the senior year, for those who want that option. Those who want more time to prepare themselves for a very competitive college can stay in high school to do so. No more milling about, waiting for the future to begin. Staying in high school will appeal to students who want to stay with their friends, spend more time getting ready for the next stage, or whose parents think that they are not yet ready to go off to another institution or another town. Leaving high school for community college will appeal to others. Having high schools and community colleges competing for the favor of these students can only improve course offerings and moderate costs. Everyone should benefit.

At this tier of the system, there would be not be a standard state curriculum. But that is not to say that there would be a free-for-all either, because the range of course and program offerings would be framed by the next set of Gateways in the system.

STEP FIVE: Establish the second Gateway: This Gateway would be set at the standard required for transfer into the upper division of the lower tier of the state college system. Create the examinations needed to determine whether this standard has been met.

This second set of Gateway examinations would be available to high school upper division students and lower division college students as a target to shoot at if they want to transfer into the state four year college system at the end of their program. Meeting the standard set for this Gateway would guarantee transfer into the state system . All upper division high schools and community colleges would be required by the state to offer programs that, as a minimum, provided the skills and knowledge needed to meet this Gateway standard. The standard would be set not in terms of courses taken and time spent, but rather in terms of performance to be demonstrated on an examination, leaving room for the people operating high school upper division programs and community college lower division programs to be very creative with respect to the way they

designed their courses and programs. These standards would apply to students who took their upper secondary program in community or technical colleges as well as those who took their program in the high schools, and so all students would be on an equal footing, no matter what path they had chosen. Individual postsecondary institutions and individual programs within those institutions could impose additional requirements, of course, but the core performance requirements in the public institutions would be known by everyone and common across the board.

Clearly, many of the high school upper division students and community college lower division students will be shooting at a target other than transfer into the state college system. Some will want to go to the state university, others to private or out of state universities and some directly into the work force. The point of having this Gateway is to set a clear minimum standard of program provision and to remove the mystery of what the outcome standard is for the community college general education programs, providing a guide to the student as to what it takes to successfully transfer into a four year degree program and a measure of accountability for the high school and community with respect to their success in helping their students achieve their goals. The proportion of students sitting for these exams and their pass rates will be a very useful measure of institutional performance.

I do not mean to suggest in this discussion that only conventional high schools and community colleges would be preparing people for this second set of Gateway exams. The great strength of the Gateway conception is that, properly implemented, it leaves great scope for innovation and enterprise with respect to how people get to a Gateway — any Gateway. To visit Denmark is to encounter a dizzying array of formal and informal institutions of all kinds dedicated to getting people of all ages and conditions ready for one or another of the gateways in the Danish system. If policy focuses on the defining the gateways, creating the appropriate performance measures and providing flexible funding for people in a great variety of situations, and gets out of the business of designating only a handful of institutional types that can offer the services

needed to get to a particular gateway, then the taxpayer and the student will enjoy a system that runs more efficiently and provides many more pathways for people in every circumstance.

STEP SIX: Establish the third set of Gateways — skill standards for the technical degree programs to be offered in the two-year postsecondary institutions

What is missing and badly needed in the community and technical college system are standards for the technical occupations and assessments to gauge when those standards have been met. It now appears that the National Skill Standards Board, chartered to develop such a system, may not do so before it sunsets. Some states are working on them, but state standards are no substitute for a national system. Absent these standards, the colleges set their own standards, which vary widely, producing a situation in which employers do not know what degree and certificate holders can do and degree and certificate holders have a hard time marketing themselves to employers for the same reason. Standards are the key to a successful school to work transition in all the nations in which such standards are in use.

The states, working separately and together, need to redouble their efforts to establish clear standards for the technical occupations. These standards need to be performance standards, not courses-taken and time-in-the-seat standards. Employers, representatives of labor and educators need to collaborate in setting them, and there must be a fair way to assess them. Examples of such systems abound in other nations. Documents are available from the National Skill Standards Board that provide guidance that states can use to set up effective skills standard-setting groups and develop high quality standards and assessments. And several states have already sponsored the development of quality standards for use in their states.

STEP SEVEN: Create mechanisms to align education finance with the new organizational structure

If the community colleges and the new upper division high schools are to compete on an equal footing, then their general education programs will have to be financed on the same basis. In both cases, they should be financed based on student enrollment.

Implementation of the system I have described could easily become the occasion for the state providing a free education for all state residents through the first two years of college. I say that because this system will save the state enormous sums of money because it collapses the last two years of high school and the first two years of college for many students.

I pointed out above that community colleges now have an incentive to drop their technical courses in favor of general education courses because the revenues are the same in both cases but the costs are higher for the technical courses. The Danes have solved this problem by calculating the costs of offering these technical courses and providing compensation to the college for each full-time-equivalent student at a rate that reflects the differential cost of offering these courses. What makes this system work is the standards that have been established for the technical occupations. Though the courses of study might be different, the skills and knowledge on which the candidates for certification will be tested are the same for a given occupation, making it reasonable to establish a common reimbursement for all the programs designed for a particular occupation.

One other point about finance. Great Britain has found a way to deal with their shameful dropout statistics in higher education. They give their further education colleges (similar to our community colleges) a sign-up fee when a student matriculates and a certain amount in each year thereafter, but most of the compensation does not come to the college until the student has received his or her degree. There is much more mobility among college students in the United

States than in Great Britain, but I still believe that it would be possible and useful to adapt the British system to the U.S. by deferring some of the compensation to the postsecondary institutions the student attends until a degree is awarded, whether the student attends only one such institution or several.

Some additional comments on these proposals are in order.

First, there is the matter of accountability. In this system, the lower division high schools would be accountable for getting all their students through the first Gateway. That is a very focused accountability standard. Community college general education programs and upper division high schools would be held accountable, at a minimum, for the proportion of students meeting the second Gateway standard. This standard is just as focused as the first. Community and technical colleges offering two to five year technical programs in areas for which standards have been established would be held accountable for the proportion of their candidates that actually meet the standards established for the occupation for which they are studying.

Second, there is the matter of governance. States that have separate governance mechanisms for community colleges, state colleges, state universities, state vocational education and training and public schools will find it very hard to pull off the kind of system integration that I am advocating unless they establish some kind of superordinant mechanism to coordinate policy making on these issues. New Zealand some years ago established a governmental unit separate from all the entities just named to establish the standards and measures used to build all the key gateways in their system. That is an extreme measure, but it illustrates the lengths to which that nation was willing to go to build a coherent system.

There is the matter of the high school diploma. Under this proposal, the high school diploma is not a gateway. But the diploma will continue to be important to many people for many reasons. Up to now, the diploma has not typically been set to an academic performance standard, but has served as a measure of

the student's persistence and determination in completing the requirements for the diploma. Both employers and higher education institutions have valued it on those grounds, knowing that students who have what it takes to persist are more likely to do well after high school than those who do not. In my view, the state should continue to authorize high schools to issue the diploma to people who complete a prescribed program of studies with passing grades. Most employers and four-year higher education institutions will require that candidates have the diploma and have met the requirements for the first Gateway certificate. In many cases, however, the diploma will not be awarded until the candidate has completed both the lower and upper divisions of high school or the lower division program and a two-year college program.

Lastly, there is the issue of the politics of changing the system as it currently exists. Why would the community colleges want to educate high school students? Why would the high schools be willing to give up their students to the community colleges? How can the state get the higher education community to work with the schools to establish the criteria and set the exams for the first gateway certificate? How can the state get employers, representatives of labor and educators to agree on occupational standards that will be used to set the curriculum for the provider institutions and judge their performance? How can the state merge two quite different funding schemes for the schools and for the colleges into one equitable system?

These are all tough issues and they do not represent a complete list of the issues that will have to be addressed in the political arena to make this system work. These issues present themselves differently from one state to the next. In some, it may not be possible to resolve them. In others, mechanisms are already in place that can facilitate their resolution, or the leadership has the political support needed to drive solutions through reluctant constituencies. In most places, some of these challenges will be readily managed and others will take great skill and determination.

Because the actual situation on the ground differs so greatly from state to state, it would be foolish for me to offer pat solutions to the problems just enumerated. Having said that, it would be irresponsible to make no suggestions as to the direction of possible solutions. Let me offer a few ideas along those lines.

Take the matter of high schools being willing to give up some of their students to the postsecondary sector. This actually happened some years ago in Minnesota, where the state made it possible for high school students to enroll in any higher education institution that would admit them before high school graduation, and take their daily average attendance money with them. Many states now permit high school students to take courses in community colleges while still enrolled in their high school program and some, beyond Minnesota, make it possible for students to leave their high school before graduating to enroll in their community college as a degree candidate, sometimes getting their high school diploma and their two-year degree at the same time. Thus, there is ample precedent for the kind of policy structure proposed here.

Community colleges are the most entrepreneurial of our educational institutions. I think it quite likely that they would be happy to enroll degree candidates coming out of the sophomore year of high school, and they would probably be happy to strengthen their technical offerings if they could be sure that the additional costs of these programs would be taken into account in the policies that govern their reimbursements by the state.

The proposal on the table assumes that the higher education system would no longer be permitted to offer remedial courses for credit. There would be nothing to prevent them from offering non-credit safety net programs, but, even so, this prohibition would probably result in a net decline in enrollment, at least in the near term, and would therefore produce substantial opposition. Such policies, however, are being instituted in some parts of the country, which is proof that it is possible to do so.

In the longer run, of course, the policies suggested here are likely to result in larger enrollments throughout the whole higher education system, because the demand for higher education will steadily rise and the current failure rates should be sharply curtailed by the measures proposed here. But long run benefits are of little political interest to political leaders who could be defeated in the short run on the basis of the positions they take today.

On the whole, though, I would argue that although it will be difficult to enact the package of policies here advocated, it will not be impossible to do so. Many pieces have already been enacted somewhere in the United States. It remains to put them all together in one place. When that happens, opportunities for young people will be enormously increased and the taxpayers will be getting a lot more for their money.

One last point. The brevity of this paper in relation to the breadth of the subject gives it a somewhat breezy air that I thoroughly regret, to the extent that it suggests that I believe the agenda laid out here can be easily accomplished. I do not believe that. It is very difficult to establish a sound skill standards system, to organize an upper secondary vocational system that is matched to the standards and at the same time is nimble enough to be properly responsive to rapid technological developments and changes in work organization. The task of creating a lower division high school program that actually enables the vast majority of students to reach the first Gateway standard in two years is an immense challenge.

My point is not that it is easy. My point is that it is both possible and necessary. We know that it is possible because other nations have done it. We know that it is necessary because our analysis of the economy leads to no other conclusion. So we have, I think, no choice but to put our shoulders to the wheel and begin.