
On Education and the Economy: A Conversation with Marc Tucker

Marc Tucker believes it's time to abolish the general, vocational, and academic tracks and establish a mastery standard for all students.

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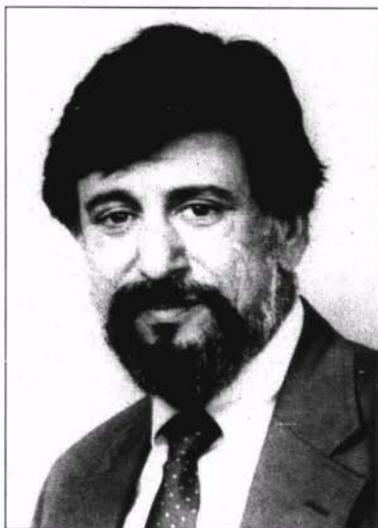
What was the impetus for creating the National Center on Education and the Economy?

The center was born out of a conviction that the enormous changes in the structure of the world's economy are presenting challenges to the United States that we cannot afford to dismiss.

There are two fundamental parts to the problem. One is that American business has to be restructured for high performance. The other is that when it is restructured for high performance, there will be a demand in this country for a quality of labor that is unprecedented in our history. The skills, talents, and abilities of most Americans will have to be of a standard that up to now has been reached by only 20 percent of the population.

Which is where schools come in?

Yes. If we want to maintain our current level of income in this country, our whole work force has to be vastly better educated than it is. Most of the companies in the United States these days are not competing with Japan and Germany; they're competing with the Philippines, with Mexico, with Thailand. If we are not better educated than



they are, by a lot, we will end up working for their wages at their hours. We can either be a high-skill and high-wage country or a low-skill and low-wage country. The consequences of not accepting these challenges would be a fairly steep dive into Third World status. It's as simple as that.

Why do restructured businesses need more highly skilled people?

The top businesses are finding that to get very high performance out of an

organization, they must assign the frontline workers duties and responsibilities that typically have been assigned only to management and senior professional personnel. Frontline workers need the authority to get the job done and to figure out how to do it in a context in which the goals have been clearly specified and agreed to; we must give them the resources that they need to do the job and hold them accountable for their performance.

A lot of people blame the schools for contributing to the erosion of America's economic competitiveness. Have the abilities of those leaving school and entering the work force really declined?

Some people think that we no longer attain standards that we used to attain, so we simply have to get back to where we were. People who think that way entirely misunderstand the situation.

The schools have, in fact, been getting steadily better over the years at a very slow rate, according to most, but not all, of the statistics. The problem is not that schools have gone to hell in a handbasket; it's that the nature of the world economy has changed dramatically in the last 20 or 25 years and schools have not changed with it.

If we're going to be a high-wage country, our skill requirements are going to have to go up. But right now we have a real gap between the skills that entry-level workers bring to the job and what the high-wage work force requires.

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What do we know about the skill levels of school graduates entering the work force? I'm surprised that business executives continue to claim that millions of dollars are spent teaching workers basic skills when the National Assessment of Educational Progress shows that nearly all 17-year-olds have mastered the basics.

Remember that the upper half of students set their sights on college. That means that what's available to employers who are hiring right out of high school is the lower half. The average level of attainment of students not going on to higher education is about at the 7th grade — not in terms of years spent in school but in terms of what one should be expected to know and do at a particular grade level. Since that's an average, half are going to be above that level and half below. It's hardly surprising that a substantial number of employers say these kids can't even read at a 6th grade level. All the evidence shows they're absolutely right.

NAEP says that kids can decode the language; they just can't make any sense of it. It says kids can add and they can do fractions, but when you present them with a restaurant bill and ask them to add it up and calculate the

tip, they can't do it. Employers are not interested in whether kids can do the addition and do fractions; they're interested in whether they can add up the restaurant bill and calculate the tip. In other words, to apply skills in several steps to solve a problem.

You seemed to worry the members of the National Education Goals Panel when you testified that a student's performance in school doesn't necessarily correlate with the student's performance on the job.

I am a very deep believer that the quality of economic performance in this country is going to be very much a function of the quality of human resources, and that, in turn, is going to be very much a function of the performance of our education system.

Having said that, everybody knows that class ranking and academic performance don't track all that well with performance in later life. What you need to be an effective emergency medical technician, an effective operator of a laser-based measuring device, an effective assembly-line worker in an advanced automobile assembly plant, is not simply a function of arithmetic and grammar learned. It's a function of your ability to make connections between the principles, the facts you have learned, and the demands of your particular environment. There's nothing automatic about that. The fact that you've mastered the fundamentals in school doesn't mean you're going to be able to apply them in a particular context on the job.

The key question facing us is: how do we increase the capacity of our work force to draw upon the academic knowledge that they have, in the specific context in which they're operating, to function at a higher level of performance?

How would the setting of high standards for all students improve their preparation to enter the work force?

One of the major things we discovered in the study by the Commission on the Skills of the American Workforce is that no country in the world that has achieved high educational performance did so without high and explicit standards and without attaching to those standards explicit rewards for students who attain them.

And these standards have to be part of a national system?

It's important to us to have a single national standard because we are, after all, one country. It's taken us 200 years to recognize that in education, but there are very high degrees of mobility in this country and, as I say, as we looked around the rest of the world there wasn't a single country that we found that had an effective education system that didn't have a national standard. Very powerful. So that's the first principle: many exams, one standard. The second is the idea of a mastery standard, which is very hard, I think, for a lot of Americans to grasp.

Why do we need a mastery standard?

The question that our testing system is designed to answer is, "How do I compare, or how does my school district compare, to others?" And so the answer comes back: you're on grade level or below grade level, you have a score of 68 and the median is 52.

The more interesting question is, "What do these kids know and what are they able to do?" The answer is, "We haven't got a clue," because the system is not designed to answer that question. We have to begin to stipulate

that in very concrete terms. Then the question with respect to any individual is: "Do they know it and can they do it?" And for a particular jurisdiction: "How many of our kids know that and can do it, and is that proportion increasing or decreasing?" That's an utterly different approach than ranking and sorting kids.

How does the concept of a mastery standard compare, if at all, to things like mastery learning or outcomes-based education? These are more familiar to educators.

This has been a real source of confusion. When we discuss the concept of a mastery standard with people in government or business, the word *mastery* conveys being able to apply learned skills. Business people have never heard of Mastery Learning; they don't know about objectives. But when we use the term *mastery* with educators, they think we're talking about Mastery Learning. And the way Mastery Learning has often been interpreted is not what we have in mind.

The Mastery Learning programs I've seen break learning down into little tiny components. We don't think you have to master this little bit before you go on to that little bit. We don't think that the detailed specification of objectives is the way to build a learning program that is going to get kids to the level of mastery that we have in mind. So when we say *mastery* we mean with a small *m*, not with a capital *M*.

What would be the implications of moving to a mastery standard?

What we have in American education is a time standard that is fixed and a performance standard that is variable. You get your high school diploma

after 12 years. Nobody knows what you know and can do at that point, but you get your diploma. The concept of a mastery standard would reverse that. It says the performance standard ought to be fixed and the time ought to be variable.

The Commission on the Skills of the American Workforce recommended that the United States should have what we call a "Certificate of Initial Mastery" that students would earn by reaching a high performance standard. And we said most kids ought to be able to achieve it at about the age of 16. That's very different from saying: "This is an exam that's administered at 16 and we're going to produce scale scores. You get a 6, you get an 8, and you get a 2 on a scale of 10." No — everybody passes, otherwise they don't get their certificate. If they don't, we give them help and they keep studying and keep taking it until they do.

That is a revolutionary idea. By the way, it's not only revolutionary for us, it is revolutionary for Europe. They don't do that; they use their exams to sort kids out. We are not proposing to use this exam to sort kids out.

But that's a major criticism of the system of exams and high stakes used in other countries — that it invariably causes students to be sorted into academic or vocational tracks or out of school altogether.

It is a common criticism. People have said to us: "Mastery standard, examinations — you're talking about a European-style system. But they track! We don't want to track here in the United States."

The reality is utterly different. Many of those other countries don't use any form of ability grouping or even grading until the age of 12 or 14. Uniquely among the nations of

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the world, we in the United States believe that school achievement is a function of natural ability. We also believe that we can determine natural ability very early on. So we administer tests to little kids when they are 3, 4, 5 years old, and on the basis of those tests we impute intelligence to kids.

And on the basis of their imputed intelligence we say: "Jackie is really impressive — we're going to give tough material to Jackie, and we're going to hold him to a tough grading standard because he's got a lot of potential. Jill, on the other hand, didn't score very well, so she's never going to learn too much. We won't give her very demanding material, but we're going to give her A's and B's because she's a good kid and she shows up and she tries hard." We operate the world's most vicious tracking system. There's no doubt of it. We track a hell of a lot earlier than any European country does, and we track, in the end, with much more finality, despite the way we think about ourselves.

Explain that, because I can hear people saying that we have a good high school completion rate and better access to higher education than most countries.

A third of the university degree engineers in Germany came out of their vocational education system. I would be astonished if more than 2 percent of the engineers in this country came up through our vocational education system. Americans have this idea that once you have been put into a track in Europe, you're done for. It's absolutely not the case.

People say that we do better with late bloomers than other countries.

That's crazy. What I described in the early grades goes on in the secondary schools, so that we have about half of our kids in the general curriculum and in vocational education. We pride ourselves on giving kids an infinite number of chances. We think of ourselves as having an open system. But, in fact, we don't.

We did a year's worth of interviews in Rochester, where we're involved in several projects with the local schools and community. We talked with students, teachers, parents, business people, college people. It is fascinating and depressing to listen to the kids, because they know exactly what has happened to them. The kids in the lower tracks, whether formalized or informalized, told us: "I was on the honor roll last year. Honor roll ought to mean something. But I got A's and B's for showing up to class." These are the kids the schools decided wouldn't amount to much so we pat them on the head.

What second chances are we talking about? The kids we interviewed said: "We can stay in school, but the best that we can hope for is working in the

grocery store for the rest of our lives." And they were absolutely right. That's what the data show, beyond a shadow of a doubt.

What are the implications of the Workforce Commission's recommendations for the academic, the general, and the vocational tracks?

That they would go away. That we would, for the first time in American history, make real what we have long said: that we believe all kids can learn. And we would have a single high standard of performance for all of our kids. We would actually expect them to attain it, which is hardly the case now.

This doesn't necessarily mean that all kids would have an identical curriculum. In fact, it almost certainly means that they wouldn't. They would not get there by the same path, but they would all be expected to get to the same place, and if you do that you can no longer have academic, general, and vocational tracks. Now a lot of people read that to say: "That means we're going to abolish the general and vocational tracks and all we're going to have is an academic track." Wrong.

What does being on the academic track mean today?

In my view, the academic track is a track upon which generally highly motivated kids embark because they are prepared, year after year, to say in effect: "What I'm learning doesn't make a whole lot of sense to me. But I believe the people who tell me that I have to learn this in order to get into college."

They play the game, basically.

They play the game, and they play it largely because they come from favored enough circumstances to

believe that if they play the game, they will win it. Most of the other kids believe that if they play the game, they won't win it and there's hardly any point. But what they are doing is playing a game. I was told when I was in school: "You have to learn this so you can take the course that follows it, and that course is a required part of the college preparatory curriculum, so you can't get into a selective college unless you do that." That's what playing the game is.

It seemed to me then, and it does now, that a lot of what I learned in school was totally unconnected to any purpose I've had outside of school. I think it's a great mistake to construct a curriculum like that. All kids would learn a whole lot better if there was constant interplay between learning the content and applying it. Academic and vocational — from kindergarten on up. Learn it and apply it. That's how I've learned everything of value to me since I got out of school.

Once a student has met this mastery standard, what next?

Our aim is not to trap students; they will get their choice. They can go into the work force, they can go into a high-level technical training program, or they can go into a program that will prepare them for a college degree program. It's their choice because they have met a high level of academic and applied standards. That's what we have in mind. There's no system like it in the world, but we think that if this country can, in fact, adopt such a plan and make it work, we will have the finest education system in the world. ||

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