Licking County WORKFORCE SUMMIT

Creating a Competitive Economic & Workforce Advantage for Our Community

In Combination With Licking County School Administrator's Kick-Off

Keynote Speaker: Dr. James R. Stone
Author of College and Career Ready in the 21st Century: Making High School Matter

James R. Stone, III is a Distinguished University Scholar at the University of Louisville. A Professor of Work and Human Resource Education, he is also the Director of the National Research Center for Career and Technical Education, a position he has held since 2002. Previously, Stone held professional rank at the University of Minnesota and before that, the University of Wisconsin-Madison. His scholarly work focuses on connection education for youth and adults to the workplace. He has published more than 100 journal articles, books and book chapters, and reports of research, more than a donzen of which have received national awards. Because of his expertise in this field, Stone is asked to provide advice to such organizations as the National Science Foundation, the National Center for Education Statistics, the ERIC system, the National Academies of Science, many states' education departments, and large urban school districts' agencies. Frequently called upon to keynote stage and national conferences and participate in international conferences and meetings, Stone has delivered more than 200 speeches and presentations of research in the past decade.

August 6, 2014
8:00am – 1:30pm
(registration starts at 7:30am)

Longaberger Golf Club
One Long Drive
Nashport, Ohio 43830

Event Sponsors:

BCAC – Business Community Advisory Council
First Federal Savings of Newark
Licking County Board of Developmental Disabilities
Licking County Chamber of Commerce
Licking County Educational Service Center
Licking County Safety Council
OhioMeansJobs | Licking County DJFS

Continental breakfast & lunch included $20.00 per person registration fee.

Checks payable to:

Licking County Chamber of Commerce

Registration Required

Breakout Sessions (Choice of 3 sessions)

Keynote Breakout
Presenter: Dr. James Stone

HR Issues
Presenter: Scott Warrick – JD, MLHR, CEQC, SPHR, Scott Warrick Consulting, Training & Employment Law Services

OhioMeansJobs K-12
Presenter: Beth Bronkar

Pax GBG (Good Behavior Game)
Presenter: Alissa Horstman

STEP Panel
Panel: Carolyn Wells

Junior Achievement
Panel: Shawna Corder

Employer Panel
Panels: Owens Corning, PCA, Buckeye Skilled Trades

Luncheon Speaker

Topic
Presenter: Kelly Ault

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A VITAL LINK

Making a difference together

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C-TEC

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OhioMeansJobs|Licking County/LCJFS

The Boeing Company

Registration & Continental Breakfast — Starts at 7:30am

Welcome & Keynote Presentation — 8:00am-9:15am

Welcome & Opening Remarks
Nelson McCray – Superintendent, Licking County Educational Service Center

Keynote Presentation
Dr. James Stone – Author of College and Career Ready in the 21st Century

Breakout Sessions — 9:30am-10:15am

Westbrook Room – OMJ K-12
Presenter: Beth Bronkar – C-TEC

Montgomery Room – Challenges of Hiring Skilled Workers
Panel: Lori Hubble – Buckeye Skilled Trades and Katie Cobb – Owens Corning

Felumlee Room – What's in it for Elementary Staff?
Presenter: Dr. James Stone – Keynote

Wilson Room – Junior Achievement
Panel: Shawna Corder – Park National Corporation; PJ Gassman – Park National Bank; Angela Coyne – Stevenson Elementary

Breakout Sessions — 10:30am-11:15am

Westbrook Room – OhioMeansJobs K-12
Presenter: Beth Bronkar – C-TEC

Montgomery Room – Manufacturing Camp Panel
Panel: Fred Paul – C-TEC; Jeff Jardell – Polymer Technologies and Services; Matt Thompson – Seal-Rite Door; Timothy Speidel – Packaging Corporation of America; Andy Maynard – DOW

Felumlee Room – What's in it for Employers
Presenter: Dr. James Stone – Keynote

Wilson Room –The "Flipped" Classroom
Presenters: Dr. Anna Davis – Ohio Dominican University; Alex Nikias – St. Xavier High School

Breakout Session — 11:30am-12:15pm

Westbrook Room –Pax GBG Good Behavior Game
Presenters: Alissa Horstman – Kirkersville Elementary; Todd Liston – Southwest Licking School District; Jeff Hammond – Kirkersville Elementary

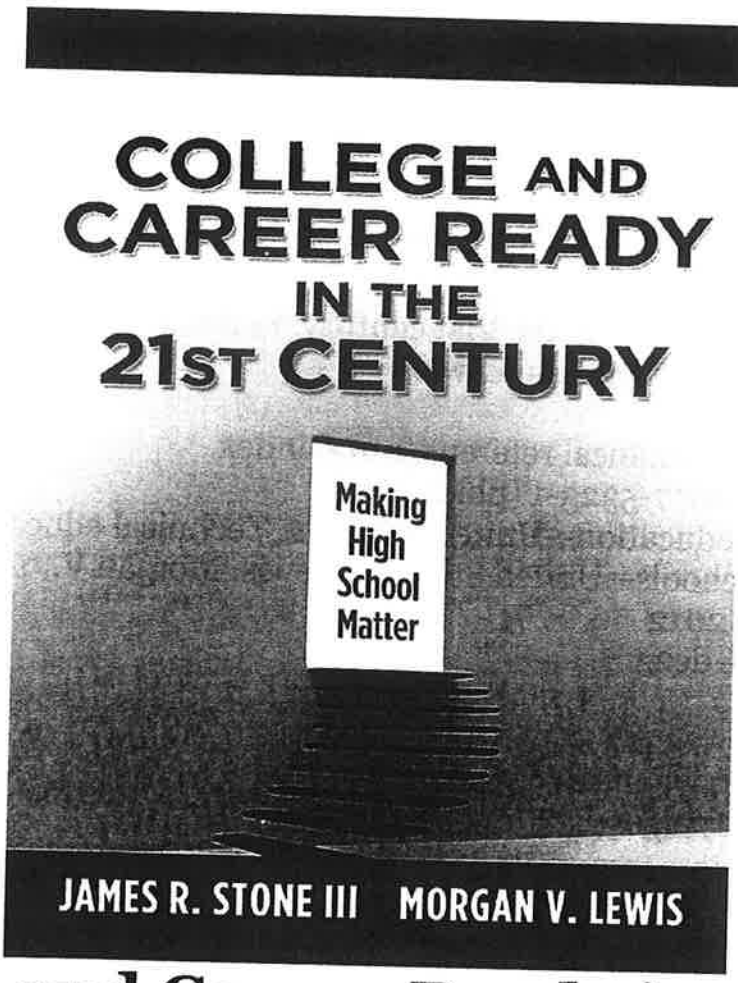
Montgomery Room – OhioMeansJobs for Employers
Presenters: Windy Murphy and Lori Mye – OhioMeansJobs | Licking County

Felumlee Room – STEM in the Classroom
Presenters: Rori Leath – The Works and Tina Hummel – C-TEC

Wilson Room – STEP
Panel: Carolyn Wells – Licking County STEP; Melissa Felumlee – Heritage Middle School; James Mason – Lakewood Middle School; Tami Dunlap - Bayer

Lunch — 12:30pm-1:30pm

Lunch Presentation – Moving Beyond Lockdown/ALICE Training
Gus Moore – Deputy, Licking County Sheriff's Department



College and Career Ready in the 21st Century

MAKING HIGH SCHOOL MATTER

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MAKING HIGH SCHOOL MATTER

James R. Stone III
Morgan V. Lewis

TEACHERS COLLEGE PRESS

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About the Authors

James R. Stone, III is a Distinguished University Scholar at the University of Louisville. A professor of Work and Human Resource Education, he is also the Director of the National Research Center for Career and Technical Education, a position he has held since 2002. Previously, Stone held professorial rank at the University of Minnesota and before that, the University of Wisconsin–Madison. His scholarly work focuses on connecting education for youth and adults to the workplace. He has published more than 100 journal articles, books and book chapters, and reports of research, more than a dozen of which have received national awards. Because of his expertise in this field, Stone is asked to provide advice to such organizations as the National Science Foundation, the National Center for Education Statistics, the ERIC system, the National Academies of Science, many states' education departments, and large urban school districts' agencies.

Frequently called upon to keynote state and national conferences and participate in international conferences and meetings, Stone has delivered more than 200 speeches and presentations of research in the past decade.

Morgan V. Lewis is a consultant to the National Research Center for Career and Technical Education at the University of Louisville. Lewis has over 40 years of experience in research, policy analysis, and evaluation of education and training programs. His focus has been primarily on school-based programs designed to prepare young people for employment, but he has also studied programs in correctional institutions, parole offices, day care centers, and public welfare agencies. He is the author or coauthor of more than 150 publications.

Lewis received his doctorate in Industrial/Organizational Psychology from Pennsylvania State University. While in his doctoral program, he worked on a multistate evaluation of vocational education and that experience set the direction for his future career. After receiving his degree, he remained at Penn State for 13 years conducting research and evaluation studies for state and federal agencies. In 1978 Ohio State University was awarded the contract for the first National Center for Research in Vocational Education and Lewis joined its staff. When the national center moved to the University of California–Berkeley, Lewis continued at Ohio State as a staff member of the Center on Education and Training for Employment until his retirement in 2006. During his years at Ohio State, he served as a consultant to vocational education and workforce agencies in China, Turkey, Kyrgyzstan, and the Philippines.

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Contents

Preface

Education in the United States, especially high school education, has become increasingly narrow in focus. In the name of improving education for all students, high schools have become the new middle school. That is, there is no intrinsic value in a high school education except to prepare all youth for the next level of education, presumably college.

While no doubt well intended, we argue that the net result of such a focus is a system that ill-serves perhaps as many as 60% of the students who start 9th grade. This is the estimated percentage of those who will never complete a college credential.

Efforts to increase academic rigor and attainment are not new. In the 1950s the Soviets launched Sputnik and a generation of youth was directed toward becoming, literally, rocket scientists. In 1963 that effort was modified by an expanded federal investment in vocational education, Public Law 88-210. By the late 1970s, Japanese and German manufacturers were successfully competing against American manufacturers and the impulse again was to focus on education. This, and other influences, led to the *A Nation at Risk* report that began what has become nearly 30 years of education reform churn with schools and teachers under constant criticism. Within a decade, however, thoughtful reformers recognized the folly of a single curriculum for all students and thus came youth apprenticeships, the school-to-work movement and other efforts to provide multiple pathways for young people to succeed.

Then came No Child Left Behind. This reform effort, like those that came before, was predicated in part on assumptions about how the presumed

decline in American education would bring down our economic competitiveness. Yet today's major economic competitors, China and India, hardly have education systems America would seek to emulate. So there must be something other than education that explains a nation's economic competitiveness. As further evidence of the disconnect between education and economic robustness, one only needs to look at where some of the most advanced manufacturing plants in the United States have been located in recent years: Boeing and BMW in South Carolina; Toyota in Kentucky; Mercedes in Alabama; General Electric in Mississippi. The educated work-force argument would argue for locating such sophisticated, highly technical enterprises in New Jersey, Massachusetts, Minnesota, or Iowa. Clearly, more than education is at play in economic competitiveness.

There are other, more important reasons to examine why and how we should structure multiple opportunities for young people in high school today. The most compelling is that despite all the efforts over the past several decades, only a minority of 9th graders will complete a 2- or 4-year college degree. There are many reasons for this. Certainly, rapidly rising costs of higher education represent a barrier. The capacity of higher education, especially that of community college systems, limits options for many. And, as we will discuss, many high school graduates are simply not capable of mastering the academics demanded of traditional 4-year colleges, but possess other talents valued in the labor market.

In today's lexicon the phrase "college and career ready" has gained traction. We suggest that perhaps we should simply discuss "career ready" recognizing that some career pathways require 4 years of college or more and others a 2-year post-high-school technical degree, but there still remain many that require only a high school level of education. The high school diploma, we argue, should be coupled with some signal that the graduate is prepared to be employed, a credential that documents the skills that have been acquired.

As Barton (2006) has observed, high school is the last education opportunity paid for wholly by the public. Its purpose has to be to do the best it can to provide all who leave it the foundation necessary to enter, or further prepare for, adult life. For this reason, we propose an approach, a strategy, to once again make high school matter.

Finally, we would like to express our appreciation to our colleagues at the National Research Center for Career and Technical Education who conducted much of the research reported in this book with funding provided by the Office of Vocational and Adult Education, U.S. Department of Education. We also wish to thank the hundreds of educators and thousands of students who cooperated in this research. Needless to say, the views expressed are our own and may not be shared by our colleagues or the Office of Vocational and Adult Education.

Rhetoric and Meaningful High School Reform

Education's contribution to the American economy has been a fundamental assumption of those who advocate for skill training as a part of public education since the beginning of the 20th century (Commission on National Aid to Vocational Education, 1914/1974). It was not until the 1960s, however, when the federal government expanded its role in financing vocational education and what was then called "manpower training," that this contribution began to receive continuing examination. Becker's 1964 book *Human Capital* summarized the available knowledge and provided a rationale for efforts to improve both individual and societal well-being through education and training. Educators welcomed this explicit endorsement of what they had long contended, but few foresaw that if they were credited for their contributions to growth they could also be blamed when the economy slipped.

In the late 1970s and early 1980s the American economy experienced an unusual and damaging combination of high inflation with little or no economic growth—a combination that was labeled "stagflation." The global economic dominance that America had enjoyed after World War II as other industrialized nations rebuilt their economies was fading. During this period, also, the number of new entrants into the labor force began to decline as the last of the Baby Boomers completed their education and sought employment. Employers had fewer applicants from which to choose and often were disappointed with the skills of those they hired.

In 1980, in the midst of stagflation, Ronald Reagan was elected president. Among the issues on which he had campaigned was a promise to eliminate the federal Department of Education, which had been created under the Carter administration. His Secretary of Education, Terrel Bell, had been appointed with the understanding that he would close the department (Borek, 2008). To provide support for such a decision, Secretary Bell established a commission to examine the quality of education. In 1983 the National Commission on Excellence in Education issued its report, *A Nation at Risk*. That report did not lead to the elimination of the Department of Education, but it did launch a movement to improve education that continues to this day.

THE RHETORIC

The basic argument of *A Nation at Risk* was that the quality of American education had declined and this decline was directly linked to the poor economic conditions the nation was experiencing. If the decline was not reversed, the future was dire:

Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. ... the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people. (National Commission on Excellence in Education, 1983, p. 5)

The commission provided no analyses of the link between education and the economy to support its assertions. Nevertheless, the report focused public attention on a number of indicators, such as the poor performance of American students in international comparisons of test performance, to launch a host of reform initiatives. Virtually every state increased the number of academic credits required for high school graduation and specified the subjects in which these credits were to be earned (Zinth & Dounay, 2007). These increases were accompanied by a variety of efforts to improve the preparation of teachers, to adopt rigorous standards, and to require more accountability. One result of the convergence of these initiatives was the passage in 2001 of the No Child Left Behind legislation, which requires highly qualified teachers for core academic subjects and adequate yearly progress and establishes sanctions to be applied when these requirements are not met.

Have the many reforms of the past 2 decades achieved their goals? The rhetoric of those advocating for more rigorous academics implies they have not:

It is clear that the science and engineering problem begins early in the K–12 pipeline. We are losing our future scientists and engineers around the junior high school years. Less than 15% of U.S. students have the prerequisites even to pursue scientific/technical degrees in college. U.S. high school students underperform most of the world on international math and science tests. And most have little interest in pursuing scientific fields. (Council on Competitiveness, 2005, p. 49)

The National Summit on Competitiveness (2005) has one fundamental and urgent message:

If trends in U.S. research and education continue, our nation will squander its economic leadership, and the result will be a lower standard of living for the American people .... By 2015 [the country needs to] double the number of bachelor's degrees awarded annually to U.S. students in science, math, and engineering, and increase the number of those students who become K–12 science and math teachers. (pp. 2, 5)

The National Center on Education and the Economy (2007) echoes this message:

If we continue on our current course, and the number of nations outpacing us in the education race continues to grow at its current rate, the American standard of living will steadily fall relative to those nations, rich and poor, that are doing a better job. (p. xix)

MORE IS NOT BETTER—IT MAY BE WORSE

These assertions are the same as those in *A Nation at Risk*, despite the changes that occurred after that report was released. In 1982, high school graduates earned an average 12.9 academic credits; by 2005, this average had increased to 17.4 (Snyder, Dillow, & Hoffman, 2009). The average student in 2005 had, in effect, experienced 1 full year more academic courses than his or her 1982 counterpart. During these 2 decades, however, scores of 17-year-old students on the reading test in the National Assessment of Educational Progress (NAEP) changed very little, moving within a five-point range

between 285 and 290 with the lowest average score occurring in 2004 (Rampey, Dion, & Donahue, 2009). In the same period the average number of credits earned in both science and mathematics increased more than a full credit (2.2 to 3.3 in science and 2.6 to 3.7 in math; Snyder, Dillow, & Hoffman, 2009) and the NAEP score in mathematics rose from a low in 1982 of 298 to 305 in 1990 (Plant & Provansnik, 2007). This was a statistically significant increase, but there has been no significant improvement in the past 18 years. The content of the NAEP science tests changed in the mid-1990s but there was a significant decline in scores between the early 1970s and the mid-1990s. With the newer tests, only 21% of students tested as proficient in 2009 (NAEP, 2011).

For almost 30 years our nation has asked its students to take more courses in the core academic disciplines. Standards have been adopted with the goal of making these courses more rigorous. These reforms have not produced improved performance on tests that measure what these courses are designed to teach. There is no question that in a global economy with high rates of technological change, a sound basic education is essential for all workers. Unfortunately, the current approach of more academics and more rigor, especially in science and mathematics, is not producing the outcomes that are desired.

STEM and College and Career Ready

The emphasis on science and mathematics has created the STEM acronym: Science, Technology, Engineering, and Math. Performance in science and mathematics courses has traditionally served a sorting function, identifying those students who are encouraged to prepare for entry into science and engineering occupations. The prevailing assumption, reflected in the quotations presented above and in the continuing rhetoric today, is that if more students take more of these courses, the nation will produce more engineers and scientists. As a result of having more of these workers, the nation will produce the technological innovations that will enable American workers to compete with their low-wage counterparts in other nations.

For many, STEM is primarily, if not exclusively, about science and mathematics education, not career and technical education (STEM Education Coalition, 2011). Others think of STEM as a set of skills nested in specific occupations such as accountants, software engineers, electrical and mechanical engineers, scientists of all varieties, operations research analysts, and database administrators, among many others. STEM programs for such occupations generally lead to careers in these areas. Most, if not all, narrowly defined STEM occupations require a baccalaureate or more for entry. Such occupations account for only 5–7% of current or expected employment in the United States (Carnevale, Smith, & Strohl, 2010). That said, such is the importance of STEM that STEM-related occupations have disproportionately

contributed to job creation and wealth creation in the past century and no doubt will do the same in years to come.

But how many scientists and engineers do we really need? Lowell and Salzman (2007) have tracked the flow of students through the science and engineer education pipeline. Their analysis found that the education system produces qualified graduates far in excess of demand. The most recent data show that 16% of first-time bachelor's degree recipients majored in STEM (Cataldi et al., 2011). Each year there are more than three times as many 4-year-college graduates competing for science and engineering occupations as there are openings. From 1985 to 2000, an average of about 435,000 U.S. citizens and permanent residents graduated with bachelor's, master's, and doctoral degrees in science and engineering. Over the same period, there were about 150,000 jobs added annually to the science and engineering workforce.

An update of this analysis (Lowell, Salzman, Bernstein, & Henderson, 2009) found the same or even increasing rates of retention in the STEM pipeline from high school to college, college to first job, and college to mid-career job, but less retention among the highest performing students. The data analyzed provided no reasons for this decline among the best science and engineering graduates, but the authors state: "This analysis does strongly suggest that students are not leaving STEM pathways because of lack of preparation or ability .... The problem may not be that there are too few STEM qualified college graduates, but rather that STEM firms are unable to attract them. Highly qualified students may be choosing a non-STEM job because it pays better, offers a more stable professional career, and/or [is] perceived as less exposed to competition from low-wage economies" (p. iii).

Another frequent claim is that China and India produce far more engineers than the United States and this gives them an advantage in the global economy. The basis of this claim lies in how each country defines an engineer. A study conducted at Duke University (Wadhwa, Gereffi, Rissing, & Ong, 2007) found that in China many skilled tradesmen, such as mechanics, and graduates of 2- and 3-year programs are counted as engineers. National data were difficult to obtain in India, and the sources that were available included a wide variety of occupations in computer science. A survey of 58 corporations engaged in offshoring engineering jobs, reported in the Duke study, found the top reason for hiring in other countries was lower salary costs. This survey yielded little evidence that implied there is a shortage of engineers in the United States.

A study by the McKinsey Global Institute (Farrell, Laboissière, Rosenfeld, Stürze, & Umezawa, 2005) also supports the Duke findings. The McKinsey study involved interviews with human resource managers of 83 multinational companies. These managers reported that 8 out of 10 engineering graduates in the United States could successfully work in their

companies while fewer than 3 out of 10 in India and 1 out of 10 in China could do so.

Although all CTE programs address some aspects of science, mathematics, and most certainly technology, not all are focused on engineering or engineering-related jobs. Many CTE programs do, however, address STEM-related careers, the second focus of the STEMEd Caucus. These include careers in automotive technology, medical technology, nursing, process control, machining financial management, and many other kinds of occupations. In a very real sense, all occupationally oriented career and technical education is STEM-related. Some of these occupations require a bachelor's degree or more, but many can be found in the subbaccalaureate labor market and vary in the amount and kinds of mathematics and science they require (ISEEK Careers, 2011).

Dropout Rates

One possible, unintended consequence of the increased emphasis on moving all youth to college, the focus on STEM, and the consequent narrowing of the high school curriculum may be to exacerbate the stubbornly persistent high dropout rate. Presently the United States ranks 23rd among leading industrialized nations in the proportion of youth who complete secondary education (Organisation for Economic Cooperation and Development [OECD], 2008).

High school dropouts are difficult to identify and measure. State and local methods of reporting dropouts vary widely, and it is in the self-interest of educational agencies to define and count dropping out in ways that minimize the number. In some measures, individuals who obtain a General Educational Development (GED) certificate are counted and in others they are not. There is one indicator, however, that can be applied uniformly across states: the ratio of the number of graduates reported by state educational agencies to the number of 17-year-olds in the population. Barton (2005) reported this figure for the past 130 years, from school years 1869–1870 through 1999–2000. The ratio reached a peak at 77% in 1969 declined to 70% in 1995 and stayed at approximately that level for the remainder of the period examined. This indicator is lower than most other measures of dropouts, but it has the advantage that it is not influenced by reporting policies of local school districts or the self-report and nonresponse biases inherent in population surveys and longitudinal studies of defined cohorts of students. An analysis of different sources and methods by Heckman and LaFontaine (2007) found somewhat higher graduation rates than Barton, but the same decline starting in the early 1970s.

The best estimates imply that between 20% and 30% of students do not graduate from high school. Many of these dropouts earn GEDs, but their economic and social outcomes are significantly lower than those of high school

graduates who do not go on to college, and do not differ significantly from those of similar dropouts without such certificates (Heckman & LaFontaine, 2006). The real challenge facing high school education is not to increase the rigor of what is taught but to provide a more appropriate curriculum for those who find the typical academic class boring and frustrating. In the following chapters, we present evidence that these students are unlikely to benefit from more rigorous academics taught in the traditional manner.

It is unfortunate but true, as any high school teacher will attest, that for many students the typical academic class is an ordeal, not an opportunity. There are teachers who can reach such students, but they are the exception. Even with the best preservice preparation and continuing professional development, no significant number of mathematics teachers will become like the late Jaime Escalante and be capable of teaching calculus to inner-city students. And even he taught only those students who were willing to do the extra studying that was needed. The very fact that the film *Stand and Deliver*, based on Escalante's experiences, was made underscores how unusual his success was (Mathews, 1988).

As students are required to take more academic courses, and as these courses are made more demanding, which outcome becomes more likely for those students who have difficulty in these courses? Will they study harder to meet these higher standards or will they leave school? The final exit from high school is the result of a process of disengagement from school that begins much earlier, often in the elementary grades (Beatty, Neisser, Trent, & Heubert, 2001). Requiring a more rigorous curriculum, absent other changes in instruction and support, will not reverse this process. If increased rigor does anything, it is likely to accelerate disengagement. There is an alternative—teaching academics in the context of how they are used in occupations—that has a higher probability of producing the improvements that are desired. In the next section, we outline the components of such an alternative.

A CAREER-FOCUSED APPROACH TO MAKING HIGH SCHOOL MATTER

Let us be clear in what we recommend. We are not trying to change the high school curriculum for all students. The career education effort in the 1970s (Herr, 1977) and school-to-work in the 1990s (Hughes, Bailey, & Mechur, 2001) attempted to bring about total curriculum reform with little lasting effect. There are new efforts in this regard that will be discussed in Chapter 2. The dominant curriculum produces the results desired for that proportion of the student population who performs well in academic classes. These students, too, find their classes to be boring, but they have accepted the rules of the game (Fried, 2005; Tripp, 1993). They study enough to get good grades and are prepared for college and the access to management, scientific, and

professional occupations that obtaining a college degree makes possible. We focus in this book on those students for whom the academic classroom is a poor match with their interests and learning styles. These are the students who are most likely to "major" in CTE or could benefit from a robust CTE. Over the years, this group of students has been called the "forgotten half" or the "neglected majority." By whatever name, they represent a substantial proportion of high school students today.

With the current emphasis on college for all, one not involved in secondary education might think that CTE has faded from the high school. That is hardly the case. Three types of CTE courses are offered in virtually all high schools: family and consumer sciences, general labor market preparation, and occupationally specific preparation.[1] Family and consumer sciences have their origins in home economics education, one of the three occupational areas authorized to receive funding in the first federal vocational education legislation, the Smith-Hughes Act of 1917. Today the content of family and consumer sciences includes human development; personal and family finance; housing and interior design; food science, nutrition, and wellness; textiles and apparel; and consumer issues (American Association of Family and Consumer Sciences, 2011). General labor market preparation includes career exploration, introduction to technology, and basic computer applications, such as keyboarding/word processing. Occupational courses teach skills within career clusters and increase in specificity as students advance.

Statistics on enrollment by subject area are obtained from transcript studies and the most recent available are for students who graduated in 2005. In that year virtually all graduates (97%) took at least one CTE course. The average graduate earned a half credit (0.51) in family and consumer sciences, a second half credit (0.46) in general labor market preparation, and three credits (3.0) in occupational courses. Over nine out of ten graduates (92%) took at least one occupational course, and slightly more than one of every five graduates (21%) earned three or more credits in a sequence of related courses within a defined occupational area. Analysts who examine the effectiveness of CTE have adopted the term *concentrators* for students who earn three or more credits in one occupational area.

Some of the students who take several related CTE courses have clear occupational goals and use their courses to prepare for future careers. Many more, however, are still in the exploratory stage of career development. For these students, occupational classes and work-based learning provide a test of how well their interests and abilities align with the occupations they are considering. Some take CTE courses just to escape academic classes. Whatever their reasons, it is our contention that CTE classes have the potential to enhance student engagement in their education, and this engagement can be used to improve the skills needed for success in the new economy.

All occupations that require technical skills that must be acquired through training provide opportunities for incorporating instruction designed to increase students' literacy, mathematical, and scientific skills and understanding.

This is our basic proposition. We concede that the typical CTE course does not always capitalize on these opportunities. Nevertheless, the potential is there, and in our judgment this potential is more promising than asking students to take more traditional academic courses. In this book we present the evidence upon which we base this judgment and suggest the kinds of initiatives that should be pursued if the potential is to be realized. Before making this argument, however, we question the prevailing claim that the skills needed to be college and career ready are the same. The primary source of this claim is an analysis by the test company ACT (2006) in which it linked the performance of students on its college readiness examination to the performance of workers on its WorkKeys examination. In Chapter 2 we analyze the academic standards and courses that are said to define college and career readiness. We argue that defining career readiness primarily in academic terms ignores the employability and technical skills that employers seek and that CTE courses develop. Chapters 3, 4, and 5 extend our argument by describing how CTE can enhance *engagement* in education, improve academic and technical *achievement* through contextualized instruction, and ease the *transition* to further education and employment. Chapter 6 presents the evidence on the effects of CTE participation on earning and examines the charge that CTE is a means of perpetuating existing inequalities in society. Chapter 7 offers a scenario on how engagement, achievement, and transition could be affected if a district made a long-term effort to improve the rigor and relevance of its CTE programs.

2014 Licking County Workforce Summit/Administrator's Kick-Off

Creating a Competitive Economic & Workforce Advantage for Our Community

Comments and Reactions

Please comment on the following:

	Excellent	*Good*	*Average*	*Below Average*	*Poor*
Itinerary	O	O	O	O	O
Keynote Presentation	O	O	O	O	O
Breakout Sessions	O	O	O	O	O
Accommodations	O	O	O	O	O
Handout Materials	O	O	O	O	O

Any comments you would like to make about the speakers?

What did you like best about today's event?

What did you like least about today's event?

What can we do to make this event better?

How did you learn about the event?

Please describe the sector you are from (Employer, Administrator, Educator, Workforce Development Professional. Etc).

How do you plan on incorporating the information into your position following the event:

What topics would you like addressed at future events?

Thank you for your comments and suggestions. The information you provide will be used to evaluate the success of the Workforce Summit and improve future events.

Name (Optional) _____