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Education and Local Economic Development: Why Skills Matter, How We're Doing, and Leverage Points for Change

Companion Document/Speaking Points

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I want to briefly talk about why improving educational quality is important to the economy, especially the local economy, how we're doing on educational quality in Kalamazoo County and Calhoun County, and how business leadership can help improve educational quality for local economic competitiveness.

First, why is educational quality so important to the economy? Everyone knows that more education and more skills increases productivity and wages, but I want to mention a few aspects of the economic returns to education that I think are under-appreciated.

One key point that is under-appreciated is that the economic returns to a person getting more education and skills are not only returns for that individual, but also have strong spillover benefits for the local and national economy. For example, at the local level, we know from research that an individual's wages not only depend on his or her own level of education, but also on the average level of education in the metropolitan. In other words, how much education and skills one individual in a local economy gets has spillover benefits for his fellow local residents. In fact, these spillover benefits appear to be of similar or greater magnitude t the direct benefits of education for the individual.

To take one empirical example of these spillover benefits, when a metropolitan area increases the percent of college grads by one percent of the area's population, the area's average wages go up by over twice as great as one would predict based on the wage gains for those getting the college degrees. This 1% boost to percent college graduates boosts average wages in the metropolitan area by about 1.9%. But the direct effect on the earnings of those receiving the college degrees is only the 80% boost for each individual from getting a college degree times 1%, or 0.8%. The other 1.1% is due to wages going up for individuals whose education and skills did not directly change.

These spillover benefits are because business productivity and location and growth depend on having many skilled workers and getting them to interact, and not on just having a few skilled workers. Even if I have the best skills in the world, my employer may be unable to profitably introduce some new technology unless my team of co-workers also has good skills. Within clusters of related industries, the overall productivity of the cluster may depend on the skills of workers at the clusters' suppliers, and also depend on the ability of firms within the clusters to steal ideas and workers from each other.

A second point that is sometimes underappreciated about education and skills is that what is important is not only "hard" skills, but "soft" skills. By hard skills I mean whatever is measured by tests of literacy, math, or other academic skills. By soft skills, I mean social skills, the ability to deal well with other people, as well as the ability to be able to plan and organize one's actions to achieve some desired goal. We know that workplace productivity is affected by literacy and

math skills. But it is also affected by soft skills, which includes the ability to show up at work on time, to deal with customers, co-workers, and supervisors, to work in teams, and to be proactive and be a leader. Both hard and soft skills are an important part of what the educational system needs to do to support economic productivity.

A third point is that these economic productivity advantages of a stronger educational system are realized at the local level, not just for the national economy. Some people act as if Americans are so hyper-mobile that everyone in the economy is moving away from home to get jobs. Other people have an economic model in their heads where the number of local jobs of different types is fixed, so that if the economy produces more skilled workers than the current jobs, the only possible outcome is that those more skilled workers will to move elsewhere. Not so.

About two-thirds of all Americans spend most of their working career in the state they were brought up in, and this percentage is actually higher for Michigan. Over half of all kids will spend most of their working careers in the metropolitan area they were brought up in. This does not seem to be much lower for smaller or slower growing metro areas. Slower growth is reflected more in less in-migration than in more out-migration. To a large degree, the quality of our local labor force is based on the quality of our local educational system. We can import some skilled workers, but a more reliable way of boosting local educational quality is to grow our own skilled workers.

Furthermore, local economic growth will respond to the number and skills of the local workforce. If you supply the skilled workers, the economic growth will come. How could it be otherwise? Labor force quality is an absolutely key factor in affecting business competitiveness in a global economy. If an employer can find a more abundant supply of skilled workers in place A than in place B, it has every incentive to choose that location as a place to locate in and expand.

This argument is empirically verified by research on metro area growth determinants. One of the most persistent findings in the research literature on what drives metropolitan economic growth is that an area's skill level, as measured by the percent of college graduates, is a very strong determinant of an area's long-run growth rate, and to the area's ability to recover from the problems of a dominant industry. Areas with more skills are able to reinvent themselves and adapt to economic change. According to research by Ed Glaeser, a 10 percentage point increase in the share of an area's labor force that is college educated increases long-run growth rates by one-half percentage point per year. That may sound small, but an annual differential of one-half percentage point, compounded over 10, 20, or 30 years, has extremely large effects on the long-run size of a local economy.

The local economic advantages of improving the quality of local educational system are strongest in the long-run, after the children have reached adulthood, but are also evident even in the short-run. For example, we know from empirical studies that higher 3rd grade test scores increase property values. We know this from empirical studies that have compared similar houses, located in the same neighborhood, but divided by an elementary school attendance zone boundary. An increase in 3rd grade test scores that is equivalent to what students learn in a half-year—one-half a grade level equivalent—has been estimated to increase property values by about 5%. Presumably this increase in property values is because better local school encourages the in-migration of parents. As a result, increased local school quality not only increases future labor supply of students, but also increases labor supply in an area immediately by attracting parents.

So, local school quality and local skills are important to local economies. How is the Kalamazoo and Calhoun area doing on school quality? I think on the whole, the picture is mixed. I don't think local school quality is deteriorating. Along some dimensions, it might even be getting a bit better. But it is not getting to where we would like it to be.

On test scores, although this hasn't been much emphasized in public discussions, average test scores on many MEAP tests have increased modestly since most of the MEAP tests went to a new format in the fall of 2005. For example, from the fall of 2005 to 2011, average 3rd grade reading scores, according to the MEAP, went up in Kalamazoo and Calhoun schools by the equivalent of what the average 2nd or 3rd grader learns in about 3 or 4 months. Over that same time period, from the fall of 2005 to the fall of 2011, average 8th grade math scores went up by the equivalent of what the average 7th or 8th grader learns in about one full year or grade level. If one does a little calculation of how much students learn from kindergarten to 3rd grade in reading, or kindergarten to 8th grade math, these increased test scores are roughly equivalent the average amount of learning per year picking up by about 7% or so. If these increased test scores are actually due to the educational system improving, as opposed to other changes outside the schools, that is a significant increase in educational productivity.

On the other hand, high school dropout rates remain stubbornly high in Kalamazoo and Calhoun County, as they do in most of the U.S. The most recent data suggests that as of 4 years after entering high school, the average high school graduation rate in Kalamazoo and Calhoun Counties is 73%, with 12% dropping out of high school, and the other 15% still continuing in school. By 6 years after entering high school, the graduation rate has gone up to 80%, but 17% have dropped out. The long-run high school graduation rate in Kalamazoo and Calhoun Counties is probably a bit over 80%. This is roughly consistent with national data, which show high school graduation rates of a little under 80%, with relatively little change in the last 30 years. Now, national data suggest that the 80% or so high school graduates will be augmented by about 7% of the dropouts who later go back and get a GED. But empirical estimates by Nobel-prize winning

James Heckman and others suggest that in general, GED holders do no better in the labor market than high school dropouts. This isn't necessarily because the GED doesn't require academic skills—the test has been upgraded in recent years to be more demanding. Rather, it may reflect that GED holders, compared to high school graduates, either are perceived to have lower levels of "soft skills," or may actually have lower levels of soft skills. In any event, increased GED holding is by no means a good substitute for a high school graduation rate that is too low.

In addition for students who do graduate from high school in Kalamazoo and Calhoun Counties, skills are not as high as we would like them to be. All students now take the ACT in Michigan. The ACT has standards for what test scores are associated with students having a 75% chance or better to get a C or higher in a typical freshman college course. For example, according to the ACT, only 29% of all 11th graders in Kalamazoo and Calhoun County have a sufficiently high ACT math score that we would expect them to have a 75% chance of getting a C or higher in a college algebra course. Now, not everyone needs to get a C or higher in a freshman college algebra course. But 29% seems a bit low for the proportion of students who might find it in their interest to do well in a freshman college algebra course. I should emphasize that there is no sign that these problems in college readiness skills have increased over time. I suspect that the same statistics would be true 30 years ago. However, we might have a greater need today for higher levels of all types of skills, including math skills.

Therefore, it isn't so much an issue of the educational system deteriorating. If anything, the educational system might be improving somewhat. Rather, the issue is the gap between the needs of our local and national economies economy for more people with more hard skills and soft skills, and the difficult challenge the educational system faces in dramatically improving those skills.

A big part of the issue is that these skills are only in part produced by the educational system. A huge part of whether hard skills and soft skills develop to their optimal extent is what happens outside of school, prior to kindergarten, or after school or during the summer. For example, there is good reason to think that kindergarten readiness isn't where it needs to be. Now, in the case of kindergarten readiness, part of the problem is that right now we do not have good measures of average kindergarten readiness. So, in Kalamazoo County, as part of our efforts to help examine the case for wider access to preschool, we did a survey to look at student overall readiness for kindergarten in terms of both hard skills such as language, pre-literacy skills, and math, and soft skills such as behavioral skills. We concluded that only 44% of entering kindergartners were at what we would consider optimal readiness levels for doing their best in school.

What can be done to significantly increase the quality of the educational system, and indeed our entire skills development system, in producing higher levels of both hard and soft skills for a broad range of the population of Kalamazoo and Calhoun Counties? I think of this as what are

the key leverage points. What policies can we adopt that have two key characteristics: first, they have a have benefit to cost ratio, that is a high bang for the buck? Second, these policies must be feasible to be run at a large scale, so that these high benefit to cost ratio policies can be run at a large enough scale that the social benefits are truly large?

In education and skills development, there seem to be two types of policy approaches that show consistent and rigorous evidence of working if implemented in a high-quality way. First, if we intervene at early enough ages, simply adding more learning time results in quite large benefit-cost ratios in terms of long-run effects on skills and the economy. Second, if we wait until later age, we can still make a difference, but policies must be much more targeted. These later age policies work much better for workers who have decent minimum levels of basic hard skills and soft skills. And at this later stages, the policies that work best are those that are strongly tied to specific sets of skills that expanding employers are demanding in the labor market.

Adding more learning time at early ages raises short-run and long-run skills because people are more malleable at earlier ages, and it is easier to change not only how much they know and can do, but how easy it is for them to learn more. If early one, you are able to provide someone with better hard and soft skills, they are likely to find further learning easier. In other words, as Nobel prize winning economist James Heckman has argued, at early ages, skills beget skills, or actually more skills beget easier further skills development. This is particularly true for soft skills development. If a child learns early on how to get along better with their fellow students and with the teacher, their experience of school is likely to be more positive, and they will learn more in subsequent grades. Now, you can also add skills earlier on by increasing the quality of teaching or the curriculum. But these reforms are more complicated to implement than simply increasing learning time, which we know will work.

One example of a policy that works to increase learning time at an early age is preschool education. High-quality pre-K consistently shows strong evidence of success. In the short-run, a half-day of preschool for one year at age 4 can raise student test scores at kindergarten entrance by about 10 percentiles. These strong effects occur for a broad range of students, including both low-income and middle class students. Pre-K lowers special education assignment rates by 40% during K-12.

In the longer-run, high-school dropout rates and crime rates drop due to participation in high-quality pre-K by about 25%. Adult earnings of former participants increase by 5 to 10% for a half-day of preschool. For each dollar invested in high-quality preschool, the present value of future earnings increases by about $3.

These longer-run effects of preschool are not due to some magic effects of knowing a few more letters and numbers at kindergarten entrance. Rather, a child who in pre-K learns more hard

skills and more soft skills at kindergarten entrance will be more self-confident, and better able to get along with peers and the teacher in kindergarten. As a result, that child will do better in kindergarten and learn more. In turn, the child will do better in 1st grade, and learn more there, and so on. The long-run effect is to lead to an adult with better education attainment and more work-relevant skills, both in hard skills and soft skills. The old cliché is that everyone I need to know I learned in kindergarten. What should be added is that we get off to an even better start with better long-term results if we begin learning those skills in pre-K programs.

Another addition of early learning time that works to improve long-run skills is mandatory summer school in early elementary school for kids who are behind. Studies of mandatory summer school in Chicago Public Schools show that students learn about twice as much per week as students typically learn during the school year. Summer school is relatively cheap per student, perhaps less than $1,000 per student. The student achievement effects would be expected to lead to considerable long-run benefits in terms of higher future adult earnings. The ratio of the present value of the future earnings increases, divided by the cost of summer school, yield an economic benefit-cost ratio of around 8.31.

At later ages, people are less malleable, and it is harder for a policy to consistently get results for all students. For example, it is hard to find policies that consistently work to turn around the life prospects for 9th graders who are reading at a 3rd grade level. That doesn't mean they have no hope, for there are people in this situation who do turn their lives around. It just means we don't have clear and rigorous evidence of policies that will generally work for older students and adults with the weakest skills.

On the other hand there are policies that will work for older students and adults with at least some basic level of skills, for example, 9th grade students who are reading at a 7th grade level. For older students and adults, what seems to most consistently work is linking up the education provided in a high-quality way with the skills needed by employers with expanding labor demand. This helps provide the students with more in-demand skills, while also motivating students, and encourages teaching that is more hands-on, which is more effective for the vast majority of students.

One such policy with rigorous evidence of success is high school career academies. High school career academies are small learning communities in which a group of students stays with the same group of teachers from 9th or 10th grade on. The career academy is designed around a career theme. The curriculum is designed with some input from businesses in that career cluster. Students have opportunities for work shadowing and internships. The career academy model has been evaluated rigorously using random assignment methodology. Career academies have been found to significantly raise employment and earnings of participants compared to non-

participants, while not impairing educational attainment. For each dollar invested in career academies, the present value of future earnings increases by about 11 times costs.

What can businesses do to advance reforms that will increase educational quality? First, they can advocate for better public policies. Michigan invests about one-third less per capita than the average state in preschool education, and the leading states invest about 4 times as much per capita in preschool education as we do. Almost no school districts have the funds to provide summer school in early elementary school for all students who need it, as the state aid to education is designed around providing funds for the regular school year, with no supplemental funds for summer school. And high school career academies have become a more difficult option for many school districts in Michigan, as the Michigan Merit Curriculum, which requires all students to follow a curriculum similar to what would be required to go to the University of Michigan, makes it difficult for students to take vocational courses. Businesses can advocate at the state levels for reforms that would add resources for additional learning time at early ages, and give more flexibility to do more career oriented education at later ages.

Second, businesses can provide financial support. At a small scale, businesses can provide scholarships for children to attend preschool, or to attend summer school. Businesses can provide support for career-oriented curriculum materials in high school.

Third, in the career education area, businesses can become more involved in the career and technical education system. Even if a school district does not move to a career academy model, there are many high-quality career and technical education programs that can benefit from greater business involvement and support. Businesses are needed to work with programs on career-relevant curricula, to provide job shadowing and internship opportunities, to provide teachers with opportunities to learn more about what skills are needed in the modern workplace, and in some cases, to provide sites for career and technical education to take place.

Fourth, businesses can provide other volunteer resources. Students at an early age need additional learning time. After-school or summer tutoring is helpful. Providing volunteer support in preschool classrooms is helpful. Some businesses, for example PNC, provide employees with opportunities for paid release time to help out educational programs in various volunteer capacities. This is a hands-on model that is worth emulating.

To sum up, the local educational system’s quality is absolutely key to long-run economic growth and per capita income in the Kalamazoo and Calhoun area, because a high quality education system both grows and attracts skilled people, and skilled people have profound effects on the productivity and productivity growth of area businesses. Our current educational system is not deteriorating, and indeed is slightly improving in some respects, but still has too many students who dropout or who don’t end up with even close to their optimal level of skills. The educational

reforms that can best increase educational quality is by adding high-quality early educational time for all students, and by providing more employer-oriented education at later years. Businesses can advocate for these reforms, fund them on a small scale on their own, and become involved as volunteers in helping to promote both career education, and additional learning opportunities for younger students.