

## **Addressing the Skills Gap: A Regional Analysis**

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*In the current volatile economic climate, job requirements and corresponding skill sets are also changing. This is evidenced by the apparent contradiction that while real unemployment rates for certain occupations remain high, jobs are left unfilled due to a lack of applicants with the requisite qualifications to fill them. Moreover, changes in existing jobs pose challenges for modifying existing skill sets. In order to stay competitive, organizational leaders and managers need to utilize effectively their investments in human capital. Using the case of Northwest Indiana (NWI), this study examines the current skills gap and solutions for closing it.*

### **INTRODUCTION**

A dilemma currently facing the United States (U.S.) workforce is the gap that exists between the number of unemployed workers who cannot find jobs and the difficulty employers have in finding workers with the skills to fill the vacancies that exist. In 2011, The Bureau of Labor Statistics assessed the number of job openings at 3.2 million, with 14 million American workers looking for jobs (Bennett, 2011). Whereas the unemployment rate has fluctuated around nine percent (Bennett, 2011), there are industries and sectors of the economy that have reported unfilled vacancies. On the other hand, there is an apparent excess of applicants for positions in some sectors of the economy. According to a 2011 study, American manufacturers cannot fill as many as 600,000 skilled positions –and the shortage was expected to increase over the next three to five years (“Study Finds Large Skills Gap in U.S. Manufacturing”). This indicates that a skills gap exists.

### **The Skills Gap**

Unemployment rates, while currently falling, continue to indicate a shortfall between the demand for and the supply of certain skills sets, creating a skills gap. The skills gap is the difference between the demand for certain skill levels and the supply of those people who possess those required skills. The concept of a skills gap is not a new one. This has been a persistent issue for labor markets ever since labor markets began. However, in the recent past, with data indicating less than stellar math and science scores

on the national level relative to other industrialized nations, attention in the media has been focused on STEM skills (science, technology, engineering, and math) or the lack thereof (BHEF, 2005). According to one study, the US ranked 35<sup>th</sup> out of 64 countries in math and 27<sup>th</sup> in science (OECD, 2012). Logic would suggest that the sectors in which gaps are most likely to exist are those requiring STEM skills. The evidence verifies this: In January 2011, a reported 52 percent of U.S. employers had trouble filling critical positions in these areas (Minton-Eversole, 2012 citing Manpower Group). Minton-Eversole (2012) also noted that over 80% of respondents in a 2011 survey by the Society for Human Resource Management indicated difficulties in filling vacancies for engineers, scientists, and highly skilled medical and technical jobs.

The current literature has focused much attention on the skills gap. This language implies that the supply of available workers is less than the associated demand at each occupation category. However, we can show that perhaps a skills mismatch is a more descriptive measure of the true nature of labor market stresses. A skills mismatch allows us to measure disequilibrium in occupational labor markets from both the surplus or shortage perspective.

Currently in Northwest Indiana (NWI), we measure the skills mismatch by using “Job Posting Analytics.” The analytics measure the number of unique job postings compared to the number of workers actually hired. For example, we see that in NWI between March 2013 and March 2015 there was a monthly average of 10,816 unique job postings, and during the same time period, there was a monthly average of 17,898 hires. This means that there were approximately two hires for every job posting over the two-year period, so at first it would seem that there are plenty of workers to meet the demand. However, when we look at individual occupations, we see a different story. (See Table 1 for a list of the top ten occupations job postings and hires.)

Taking the top ten occupations in demand within the seven-county region, EGR 1, over the same time period as above, we find the following:

**TABLE 1  
POSTING/HIRING MISMATCH BY OCCUPATION**

Occupation (SOC*)	Average Monthly Postings	Average Monthly Hires	Difference
	March 2013 – March 2015	March 2013 – March 2015	
Heavy Tractor Trailer Drivers	2,950	346	-2604
First-Line Supervisors Retail Sales Workers	527	212	-315
Registered Nurses	420	208	-212
Retail Sales Persons	389	752	363
Food Prep Workers; Including Fast Food	261	967	706
First Line Supervisors Food Prep Workers	260	208	-52
Customer Service Reps	222	165	-57
Stock Clerks and Order Fillers	207	261	54
Cashiers	186	568	382
Maintenance and Repair Workers	127	120	-7

Total mismatch (Postings – Hires) = (1742)

\*Standard Occupational Classification System

*Source: Emsi 2015.1; QCEW, non-QCEW, Self-Employed*

Despite the stated need for workers in STEM occupations, even these workers are not immune to the skills gap. The Society for Human Resource Management (SHRM) identified the top five applied skills

gaps for information technology workers as being *application (53%), critical thinking/problem solving (45%), written communications (30%), leadership (28%), and oral communication (28%)* (SHRM, 2013, p. 1). This perspective is supported by others who have indicated that in order to survive in the current rapidly changing economic environment, IT professionals require a variety of skills for which they are often ill equipped, such as change management (Czarnecki, 2011), project management, problem solving, and relationship skills (Gallagher et al., 2010). Furthermore, Gorman (2011) suggested that there is a growing need for information technology professionals to acquire business skills. He proposed that IT professionals need training in analytic, decision-making, presentation, and persuasion skills to bridge the gap between their technical skills and their need for leadership skills. The lack of business and so-called “soft skills” is not limited to those in engineering and technical fields. For example, a study by SHRM indicated that finance professionals were deemed deficient in professionalism/work ethic, critical thinking/problem-solving, written communications, leadership, and oral communications, in that order (SHRM, 2013).

Positions in STEM fields are not the only ones going unfilled. According to a 2012 Career Builder study, the five areas that US organizations had the greatest difficulty filling were engineering 67%, C-Level Positions 60%, Information technology 60%, Research and Development 54%, and production 54% (Careerbuilder). Moreover, evidence indicates that jobs requiring “middle skills” are also at risk. Middle-skill jobs, which require more than high-school education, but less than a four-year degree, make up the largest part of the United States and Indiana’s labor markets (National Skills Coalition, 2012).

The discrepancies between supply and demand in various sectors of the workforce suggest a need for action, leadership engagement, and workforce management to close the gap. On the surface, the situation appears to suggest that the rate of unemployment could be reduced by shifting some of the unemployed to areas where a demand for labor exists. Such shifts would require that skills be transferable from one sector to another with relative ease. Thus, we are faced with the challenge of re-equipping the current workforce with the requisite skills needed to close the gap.

How can a society of managers and leaders address and ultimately solve problems such as those previously outlined? There are no quick fixes to the issues at hand; the magnitude of the problems suggests that neither the private sector nor the public sector alone possesses the expertise or resources to effectively address them. It is thus proposed that coalitions and partnerships between constituents with varying expertise would be more effective than any single entity at addressing the issues. Furthermore, solutions will require multifaceted strategies executed through strategic thinking and planning. In this study, the problems posed by the skills gap, as well as possible solutions, will be examined with a focus on the Northwest region of the State of Indiana. This region was selected for two main reasons: (1) This region’s economy is dominated by the manufacturing sector, where the skills gap is an acute issue, and (2) several of the initiatives noted below have been implemented in regions with similar socio-economic structures.

### **The Economy of Northwest Indiana**

The region known as Northwest Indiana (NWI) is composed of seven counties: Lake, Porter, La Porte, Newton, Jasper, Starke, and Pulaski. Using data obtained from the U.S. Bureau of Economic Analysis, we calculated the Gross Regional Product, (GRP), for NWI in 2015 to be \$35.7 billion, with Lake County contributing approximately 65% of the total GRP. This measure includes total expenditures by consumers, businesses, governments, and net exports. The data also indicated that average household earnings are \$50.4K, which is approximately 82% of the earning of the average U.S. household (\$61.4K). Three of the largest contributors to household earnings are the utilities, manufacturing, and construction sectors, with healthcare a close fourth. Another interesting measure is that this region exports approximately \$8.2B more than it imports. This means that \$8.2B is injected into Northwest Indiana from other regions, states, etc. (Emsi, 2015, p.1).

We also found that, in 2015, the three largest sectors with respect to their contribution to GRP are construction and manufacturing, together contributing 35.68% of the total economic activity, with the

Healthcare sector contributing approximately 8.5% within NWI. Labor markets within these sectors are especially vulnerable to the skills gap, as will be discussed later in this paper.

As of December 2015, the total labor force in the NWI region was 406,498, with 380,890 employed and 25,608 unemployed, resulting in a non-seasonally adjusted unemployment rate of 6.3% (Indiana Workforce Development, 2016).

By comparison, Indiana's unemployment rate for the same period was 4.6%. Unemployment levels from December 2013 to December 2015 fell from 8.0% to 6.3%. This decrease in the unemployment rate within this region is reflective of similar changes in the unemployment rate nationwide. Nationally, the unemployment rate decreased from 6.5% to 4.8% during the same period. These rates are, of course, the U3 measure (the official measure of unemployment from the Bureau of Labor Statistics (BLS), calculated as the number of persons unemployed/the number of persons in the labor force), which is declining at a painfully slow rate. U3 for December 2015 was 4.8% nationally and 4.6% in Indiana. This might suggest that the national and regional unemployment situation is improving. However, this may not be the case. There are two reasons for our skepticism: (1) The way in which unemployment rates are calculated. The official civilian labor force is composed of those over the age of 16 years old who are employed, plus those who are actively seeking employment. As such, if an individual becomes discouraged because of unsuccessful job searches or lack of opportunity and stops searching for jobs, the BLS does not consider that individual to be participating in the labor force. Therefore, the unemployment rate could drop without there being an actual increase in the number of unemployed finding jobs. Thus, the official unemployment measure does a mediocre job at best in calculating the true level of unemployment and does not capture the true magnitude of the unemployment problem. The Bureau of Labor Statistics publishes an alternate metric for unemployment, which addresses the concerns noted above. That metric is referred to as the U6 measure. According to the BLS, for the state of Indiana the average U3 rate in 2015 was 4.8%, while the U6 measure was 9.0% ("Local Area Unemployment Statistics," 2016).

The alternate metric, i.e. the U6 measure, averages 5.7% higher than the published U3 measure in the state of Indiana with similar differences in the designated regions (BLS and authors' calculations). This difference leads us to conclude that a significant percentage of our workforce is underemployed, or they are, at best, marginally attached to the labor force. The intriguing question would be, "Why?" The authors of this paper propose that an additional factor – the skills gap or mismatch – might be a contributing factor. One component and contributor to the overall skills gap that has gained some attention is the middle skills gap.

### **The Middle Skills Gap**

The skills gap exists at various levels. One area that has gained particular attention is the middle skills gap. Middle skills describe highly specialized mechanical, technical, and production careers that may require industry or government certification but not necessarily a bachelor's degree. Growing middle-skills industries such as manufacturing, construction, and healthcare are facing the most significant skills shortages. Employers in high-skills STEM fields (science, technology, engineering, and math)—which require at least an undergraduate degree—also will be hard-pressed to find adequate talent in coming years. (American Society for Training and Development (2012).)

Key industries in Indiana are unable to find enough sufficiently trained workers to fill these jobs. In 2009, approximately 55% of jobs in Indiana were middle skill jobs. However, it was projected that only 49% of the workforce possessed those necessary skills. Other Midwestern states face similar challenges. During the same time period in Illinois, 50% of the jobs were middle skill jobs, while only 41% of the workforce possessed those skills. The numbers were 54% and 49% Iowa, and in Michigan 50% and 45% for the same period (National Skills Coalition, 2012).

Projections for increased demand for these middle skills will only exacerbate the problem. Researchers have projected that in Indiana the demand for middle skill workers will remain close to the 55% level, as it was in 2009. What is the reason behind this skills gap? Some (Deloitte, 2011; National Skills Coalition, 2012) have blamed the lack of willingness on the part of the national and state legislatures to fund education. The reality is that public funding is either not forthcoming or would be

inadequate for future needs. Uncertainty also exists as to what those specific needs will be in the future. Training and educating workers with specific skills should attempt to fill not only current gaps, but also address future needs. This suggests the need for transformations in managing the workforce along with new paradigms of leadership and management to proactively address the labor demand/supply needs of the future. A review of historical developments and perspectives on managing the workforce may provide some insights into how we arrived at the current situation and may provide some guidance on the development of strategies for the future.

### **Transformations in Managing the Workforce**

From a historical perspective, transformations in the U.S. workplace have resulted in a corresponding evolution and merger of management and leadership theories and applications. In the early 20<sup>th</sup> century, management was largely seen as “bossing.” This practice evolved as a result of the creation of the assembly-line process in manufacturing, which did in fact result in standardization of processes and products. Workers were often uneducated, illiterate, and non-English speaking. Under these circumstances, supervisors and managers dictated that crewmembers unquestioningly perform the tasks they were paid to do (Emelander, 2011). A consequence was that managers did not expect – or even want – workers to think independently. The tasks performed were essentially small, repetitive steps requiring only brief, on-the-job training for skill development under strict supervision with speed and compliance emphasized.

This paradigm was effective and catapulted the United States to the position of world economic leader until well into the 20<sup>th</sup> century. At that point, a combination of forces converged, leading to the rise of other economic powers and removing the dominance of the American corporation and its workers (Deloitte, 2011). Automation and computer technology in the workplace required more highly skilled employees. Advances in developing countries with lower wages and benefits costs and fewer environmental and safety regulations combined with cheaper transoceanic transportation resulted in stiffer competition for U.S. companies abroad and at home. The old paradigms of management then proved to be less effective as the US lost its dominance in world markets.

In response, management placed greater emphasis on improving processes through inspection and quality programs to measure and adjust processes to improve efficiencies. Consequently, reorganization, reengineering, and related endeavors changed the role of managers to less “bossing” and more analyzing and strategizing. Employees too transformed from repetitive-task assignments to teams responsible for larger processes (Marquardt & Berger, 2000). Marquardt and Berger further explained:

Employees are moving from needing repetitive skills to knowing how to deal with surprises and exceptions, from depending on memory and facts to being spontaneous and creative, from risk avoidance to risk taking, from focusing on policies and procedures to collaborating with people. Work will require higher-order cognitive skills – the ability to analyze problems and find the right resources for solving them, often with both limited and conflicting information (p. 12).

Clearly, an evolved theory of management would be necessary to succeed in the changed conditions and with such a workforce. Thus, in the last half of the 20<sup>th</sup> century, another theory began evolving that would at first compete with management theory and then merge with it to provide strategies for coping with the massive changes in the workplace: leadership theory.

The importance of leadership in organizations cannot be underestimated, particularly in the context of effective partnerships for addressing the skills gap. The OECD (2008) identified leadership as a prerequisite for effective partnerships. The challenge for partnerships is formulating visions that address the objectives of multiple stakeholders. Implementation would require actions that go beyond self-interest. In other words, there is a need to motivate employees beyond mere compliance and following of existing policies to be more responsive to the needs of various partners. In other words, it requires leadership that is reflective of the definition of leadership advanced by Katz and Khan (1978): “the influence increment over and above mechanical compliance with the routine directives of the organization.” Such leadership formulates the vision of the organization as it drives the strategy that results in execution of the vision.

The OECD report suggested that other elements of effective partnerships include strategic planning and analysis, as well as effective management of human resources, thus implying the need for management skills in conjunction with leadership skills. It should be noted that leadership and management are two distinct skill sets.

The notion that management and leadership are seen as different skill sets has been illustrated by several authors. For example, Slim made the distinction as follows: “leadership is of the spirit, compounded of personality and vision: its practice is an art. Management is of the mind, more a matter of accurate calculation, of statistics, of methods, timetables, and routine; its practice is a science. Managers are necessary; leaders are essential” (Slim, 1957). Likewise, Warren Bennis (1989) stated, “Managers do things right. . . . Leaders do the right things,” the implication being that leaders challenge the status quo, while managers preserve it. Consequently, good managers do not necessarily make good leaders, and good leaders do not necessarily make good managers. Each has a distinct role. Leadership qualities are far less tangible and measurable, while most management processes can be measured (Trevor Gay in Junarso, 2009). Today’s business leaders need to have the ability to motivate, manage, and develop employees to address the shortfall between the demand and supply of certain skills in current labor markets. As the environments in which organizations operate experience rapid technological and social change coupled with upheavals in the global economy, organizational leaders must have the knowledge and skills to be proactive in establishing systems that maintain stability, yet are responsive to change. Without question, the skill sets of both managers and leaders are critical in finding solutions for the skills gap, as illustrated in the case of Indiana.

### **Addressing the Skills Gap**

Given the enormity of the current unemployment crisis, such a mammoth undertaking would require input from multiple constituents. A possible solution lies in using merged manager-leader skills to form partnerships and coalitions that will create, equip, and motivate an effective labor force. This may require a strong partnership among private and public leaders to grow the community of talent, which will serve to satisfy the demand for workers in the future. Additionally, the contributions of those providing formal education, as well as industry and on the job training will be needed to address the skills gap.

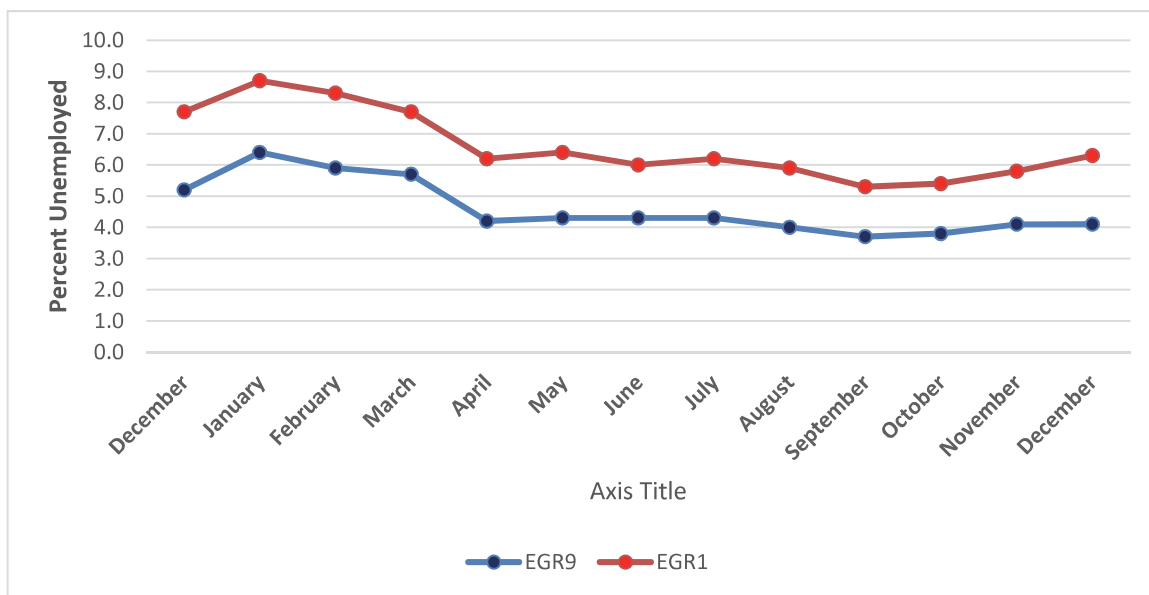
### **Public Private Partnerships**

The decentralization and fragmentation of workforce policy in the United States, particularly in the areas of employment policy, pose a major challenge in addressing the skills gap (OECD, 2008). As such, the OECD suggested that partnerships and coalitions address the skills gap between private and non-profit sectors (OECD, 2008). This suggestion appears to have some validity in that several such initiatives implemented in the US – such as the one implemented by AAR (2013) to address skills gaps in the aerospace and aviation industry – have resulted in some degree of success in closing the skills gap, but have been limited in scope. Broader regional programs that address the skills gap across industries and in various sectors of the economy are likely to have a greater impact on the economy. An example of such an initiative is that implemented by regional coalitions in the Economic Opportunities by 2015 program (EcO15) in Southeast Indiana (SEI). The initiative focuses on education and careers associated with advanced manufacturing, healthcare, and hospitality/tourism industries for 10 counties in Southeastern Indiana. Advanced manufacturing is the value-added combination of people, processes, and products, which remains competitive in a high-wage environment in the pursuit of continuous improvement. Advanced manufacturing is the major economic cluster in SEI, and therefore, the major focus of the area’s initiative. To meet the workforce needs of today’s manufacturers, EcO15 and the national “Dream It. Do It.” campaigns are working together to promote much needed training for learners that addresses the need for highly skilled workers in the new manufacturing environment in the region. The EcO15 program focus is on three industry clusters: Manufacturing, Healthcare, and Hospitality. The region’s leaders focused on attracting talent, which changes structure; developing talent, which increases achievement; and engaging talent, which creates opportunity. This opportunity then attracts more talent, and thus, we expect the cycle to continue (Community Education Coalition, 2008).

**Application to Northwest Indiana**

This program may be fully or partially transportable to other regions with similar sectors and appears to be a viable means of addressing the skills gap. While the benefits of this model of growing talent may appear obvious to those in economic development circles, in practice implementing such efforts is very challenging and requires dedicated leadership and commitment from all sectors involved. Northwest Indiana, which has similar cluster components to Southeast Indiana, could possibly benefit from such a program. However, there are presently no similar efforts on the part of regional leaders in NWI to engage in EcO15 type programs. Unemployment rates in Southeast Indiana are persistently lower than the unemployment rates in Northwest Indiana. (See Figure 1.)

**FIGURE 1  
UNEMPLOYMENT RATE COMPARING EGR1 WITH EGR9  
(DECEMBER 2014 – DECEMBER 2015)**



Source: Emsi 2015.1

It should be noted, however, that such partnerships cannot be considered a panacea for addressing skills gaps in all areas. Moreover, such coalitions are not without their challenges. They are subject to lack of relevant expertise, limited financial and human resources, and the challenge of managing conflicting and sometimes incompatible priorities (OECD, 2008). They require human resource development and economic development strategies working in tandem, and as these are often viewed as separate fields with professionals working in silos, the result is lack of coordination and contradictory strategies with lack of coordination (OECD, 2008). Furthermore, determining the effectiveness of such initiatives is often nebulous due to the lack of established criteria for measuring their effectiveness (OECD, 2008).

However, given the similar dominance of manufacturing in Northwest Indiana and in Southeast Indiana, policy makers would be prudent in giving these programs a closer look. (See Table 2 for the listing of the top six industries by contribution to GRP within the two regions.)

**TABLE 2**  
**TOP SIX INDUSTRIES BY CONTRIBUTION TO GRP**

EGR 1*			EGR 9**	
	Contribution to GRP	% of GRP	Contribution to GRP	% of GRP
Manufacturing	\$10,719,380,771.92	30.01%	\$5,191,741,532.63	36.46%
Health Care and Social Assistance	\$3,023,725,312.31	8.46%	\$665,773,666.27	4.68%
Government	\$2,429,171,575.23	6.80%	\$1,130,512,896.59	7.94%
Construction	\$2,026,953,628.09	5.67%	\$467,803,222.50	3.29%
Retail Trade	\$1,897,531,624.74	5.31%	\$686,721,628.47	4.82%
Wholesale Trade	\$1,699,033,077.07	4.76%	\$588,861,579.22	4.14%

\*EGR 1: Jasper, Lake, La Porte, Newton, Porter, Pulaski, and Starke Counties.

\*\* EGR 9: Bartholomew, Dearborn, Decatur, Franklin, Jackson, Jefferson, Jennings, Ohio, Ripley, Switzerland Counties

Source: *Emsi 2015.1: QCEW, non-QCEW, Self-Employed*

### **Education and Training**

In conjunction with public private partnerships, educational institutions need to be involved in developing solutions to address the skills gap, as they are primarily responsible for providing the knowledge and skill development of the workforce. In its 2011 Yearbook, The Organization for Economic Cooperation and Development (OECD, 2011) noted that employment rates in OECD countries are lower for individuals with college degrees than for non-graduates. Additionally, they observed that pay for college graduates has not been decreasing, while those less educated have been experiencing a drop in wages.

The situation in the US and Northwest Indiana parallels these findings. Nationally, the unemployment rate among high school dropouts is approximately 15.8%, while the unemployment rate among college graduates is approximately 4.8% (Harvard Graduate School of Education, 2011). By comparison, in NWI, the unemployment rate among high school dropouts over the same time was 19.5%, while among college graduates it is 5.6% (U. S. Department of Labor, 2011). Bridgeland et al. (2011) found that 63% of business leaders indicated that a bachelor's degree was important for achieving success in the workplace. Obviously, credentials are not without value. The implication here could be that the simple solution would be to send the unemployed to college and provide incentives, resources, and motivations for degree completion. Such strategies would require coordinated efforts between government, education, and the private sector. In reality, this might not be feasible due to the fact that not everyone has the desire or capacity to obtain a college degree. Additionally, the possession of college degrees does not guarantee employment. Even among college graduates, unemployment rates vary widely by discipline. A recent study conducted by Georgetown University Center on Education and the Workforce, Carnevale et al. (2012) found this to be true. (See Table 3 below).



**TABLE 3  
COLLEGE MAJORS, UNEMPLOYMENT, AND EARNINGS\***

UNEMPLOYMENT RATES				EARNINGS		
Major	Recent College Graduate	Experienced College Graduate	Graduate Degree Holder	Recent College Graduate	Experienced College Graduate	Graduate Degree Holder
<b>AGRICULTURE AND NATURAL RESOURCES</b>	7.0%	3.5%	2.4%	\$32,000	\$50,000	\$65,000
<b>SCIENCE-LIFE/PHYSICAL</b>	7.7%	4.7%	2.2%	\$32,000	\$60,000	\$87,000
<b>ARCHITECTURE</b>	13.9%	9.2%	7.7%	\$36,000	\$64,000	\$71,000
<b>HUMANITIES AND LIBERAL ARTS</b>	9.4%	6.1%	3.9%	\$31,000	\$50,000	\$65,000
<b>COMMUNICATIONS, JOURNALISM</b>	7.3%	6.0%	4.1%	\$33,000	\$54,000	\$64,000
<b>COMPUTERS AND MATHEMATICS</b>	8.2%	5.6%	4.1%	\$46,000	\$76,000	\$91,000
<b>EDUCATION</b>	5.4%	3.9%	1.9%	\$33,000	\$43,000	\$56,000
<b>ENGINEERING</b>	7.5%	4.9%	3.4%	\$55,000	\$81,000	\$100,000
<b>LAW AND PUBLIC POLICY</b>	8.1%	4.5%	3.5%	\$34,000	\$55,000	\$70,000
<b>SOCIAL SCIENCE</b>	8.9%	5.7%	4.1%	\$37,000	\$60,000	\$85,000
<b>INDUSTRIAL ARTS</b>	—	4.7%	—	—	\$71,000	—
<b>HEALTH</b>	5.4%	2.2%	1.9%	\$43,000	\$63,000	\$81,000
<b>PSYCHOLOGY AND SOCIAL WORK</b>	7.3%	5.9%	3.2%	\$30,000	\$45,000	\$60,000
<b>RECREATION</b>	8.3%	4.5%	2.0%	\$30,000	\$50,000	\$61,000
<b>ARTS</b>	11.1%	7.1%	6.2%	\$30,000	\$46,000	\$55,000
<b>BUSINESS</b>	7.4%	5.3%	4.4%	\$39,000	\$63,000	\$84,000

Source: (Carnevale, Cheah, and Strohl (2012)

*\*Recent college graduates are 22-26 years of age; experienced workers are 30-54 years of age. Graduate degree holders are limited to 30-54 years of age. Percent unemployed are computed based on total employed and unemployed. Earnings based on full-time, full-year workers.*

Unemployment rates among recent college graduates ranged from 13.9% for Architecture majors to 5.4% among Health and Education majors (Carnevale et al., 2012). Thus, not all college graduates have the requisite education to assure low unemployment. A national focus on STEM skills, as noted earlier, has led to a focus on preparing students for careers in these professions and reaching students at earlier ages. In Northwest Indiana, for example, organizations such as First Energy and NiSource have provided

funding to K-12 institutions to encourage students to enter STEM fields (“STEM Classroom Grants,” May 2016; “Sustainability,” n.d.). However, the skills gap needs to be addressed in other areas. An OECD (2011) report sheds some light on this by indicating that the education that is needed for the 21<sup>st</sup> century is one that equips learners with critical-thinking, decision-making, problem-solving, collaboration and communication skills. Similarly, Pace (2011), in her analysis of a report by the Hay Group, identified cognitive, emotional, and behavioral skills as being essential “leadership competencies for the new business world order.” Knowledge cannot be viewed as static; as advances in all sectors and disciplines change, so too must the knowledge imparted to students. Thus, educators need to go beyond imparting knowledge; they need to provide tools for creating and transforming knowledge as the need arises. To effectively address business needs, the lines of communication between business leaders and educators need to be strengthened so that together they can ensure that the learning taking place is beneficial to all.

It should be noted that formal education cannot be limited to the classroom. Formal education may not be appropriate or the best option for addressing all skill deficiencies (ASTD, 2012). A bachelor’s degree is not a requirement for many of the occupations experiencing labor shortages. According to the Bureau of Labor Statistics, nationally eight out of ten of the top growing occupations do not require a bachelor’s degree (“Employment Projections,” 2016). This list was confirmed for Northwest Indiana as well (EMSI, 2016). Thus, formal education needs to be supplemented and supported by other forms of workforce education, such as skills certificates, apprenticeship programs, and other forms of on the job training (ASTD, 2012). Czarnecki (2011) noted workers learn best by observing leaders applying the skills on the job and through coaching and mentoring.

## CONCLUSION

It may be said that the unemployment rates both in the US and in NWI in particular engender a call for action. The complexity of the situation and factors contributing to unemployment suggest a multi-pronged approach involving multiple constituents. Evidence suggests that the undertaking must of necessity engage the public and private sectors as well as those responsible for educating and training the labor force. This requires education and training that builds capacity and prepares the workforce for current and future challenges by equipping them with the necessary cognitive, emotional, and behavioral skills to better prepare them to undertake the challenges of a changing and dynamic economic environment.

Educators will need to go beyond providing knowledge to providing tools for knowledge transformation and knowledge creation. It also requires leaders and managers who think and operate outside of traditional silos. The solutions discussed here are not exhaustive and are intended to provide an alternative perspective on the unemployment situation and open the door for dialogue between and among researchers, educators, and policymakers.

Traditional approaches often suggest identifying the knowledge, skills, and abilities needed to gain employment in underserved sectors and then developing strategies to address them. Such approaches tend to be reactive. An alternative approach would be to be more proactive and identify the skills sets that will be required for success in the current and future workforce. Developing such strategies would ensure that the skills obtained by workers would match the needs of future employers.

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