



U.S.A. Skills Gap in Manufacturing Jobs: Educating Workers for Jobs in the New Economy

by Margherita Roiatti

The U.S.A. manufacturing industry, decimated during the Great Recession, is bouncing back. The indicators look strong. The figures provided by the [Bureau of Labor Statistics](#) demonstrate that the manufacturing sector has the highest output among industries, and now accounts for 10 percent of all workers. Open jobs in manufacturing stand at the highest level in 15 years, averaging 345,000 per month on federal level. However, the job openings record in manufacturing does not appear to be outweighed by an equally strong phase of hiring. **Automation and technology, ever changing, dominate manufacturing jobs. The skillset required for finding and keeping today's manufacturing jobs is more sophisticated than ever.**

On these grounds, **Sandy K. Johnson, President of the National Press Foundation**, interviews **Nicole Smith** (Research Professor and Chief economist at the [Georgetown University Center on Education and the Workforce](#)) and **Josh Zumbrum** (National economics reporter for the Wall Street Journal) **to take the stock of the so-called skills gap.**

Starting from the commonly accepted skills gap definition, the NPF journalist investigates the phenomenon highlighting both the strictly economic concerns and the most relevant aspects for the journalistic storytelling.

The stakes are high. In 1979, the output for every manufacturing employee equalled \$100,000; today, it is \$300,000. It means that for achieving the same output a smaller number of workers is needed but, at the same time, the employed workforce is required to be high skilled, educated and qualified for working with high-tech and complex machinery. According to the [Manufacturing Institute](#), over the next decade nearly 3 ½ million manufacturing jobs will likely be needed and the skills gap is expected to result in 2 million of those jobs going unfilled due to the vocational and professional misalignment which is the «*distance between the professional profiles trained by the education system and the labour market needs in terms of professional competences*» (E. Massagli, *Politiche formative e disallineamento formativo e professionale*, [Bollettino Adapt n. 19/2016](#)).

The above mentioned empirical evidence leads to the widely-accepted definition of skills gap, namely the circumstance occurring when the pace of technology outgrows the supply of skilled labour. However, during the course of the [webinar](#) it emerged that such an abstraction does not take into account two other key factors for placing the debate on competences in its proper context and better understanding the skills shortage problem in manufacturing.

The first element to be taken into consideration is the “cyclical pattern”. Manufacturing loses jobs during recessions and gain them back during the recovery phases: for example, between December 2007 and January 2010 manufacturing lost about 2.7 mln jobs and, of those, 1.6 mln were of people with a high school diploma or less ([A. P. Carnevale, T. J. A. Gulish, America's divided recovery](#), [Georgetown University Center on Education and the Workforce](#), 2016). It should

be highlighted that jobs that come back don't exactly overlap the ones that have been lost (in spite of belonging the same industry), being more sophisticated and requiring to progressively demonstrate new complex competencies.

The second feature that should occur to display properly the competences mismatch is its systematic nature, which delineates the skills gap as a systematic non-availability of the skills and education required to do the job by the entire industry concerned, primarily at a state level and in a second step at federal level (regardless of the particular business case study which is otherwise most interesting from a journalistic point of view).

Moreover, the geographical framework is an additional significant element influencing the misalignment between the skills demanded and the ones outlined in the *curricula* submitted for the job vacancies. In light of the labour force [reshoring](#) trends (opposite, if compared to the previous disposition toward offshoring and relocating because of the wage differential in countries such as China and India). It is possible to detect an increase in workers' towards mobility due to improvements in the property market, which domestically might fill the gap of the areas suffering from skills shortage.

The mobility assumption described above is related to the utmost importance of training in its broadest sense, as an education and training system, as a re-training scheme within individual companies. With this background, it is possible to notice a progressive shift from a demand for labour force with basic schooling (high school diploma) to a workforce providing licences and certification of post-secondary education.

In addition to these constraints, there are basically two specific points to be addressed. Firstly, when companies state that they cannot find anyone with the required skillset why don't they commit themselves in recruiting people who are good workers and train or re-train them to gain those skills? Usually, money spent on training – specifically within the businesses field - tends to be highly cyclical as linked to the performance of economy. In other words, when the economies are doing well employers are likely to considerably invest on their employees, financing in-house training activities; vice versa, in response to economic downturns, one of the first budgets that gets cut is the one allocated for the workforce education and training programmes.

Secondly, as far as companies are increasingly pushing the task of providing the workforce with the required skills and qualifications to community colleges and universities, what could be the education system relevant contribution for facing the U.S.A. manufacturing skills gap? An initial response could be addressing the communication issues between manufacturing employers and their potential employees: one of the challenges that community colleges and university would face is to demonstrate to their prospective students how skills provided them would be designed to be transferable across a range of opportunities that might be beyond a particular individual manufacturing job. In addition, it is necessary to settle an education system able to extend the STEM (Science, Technology, Engineering, and Mathematics) based competences to the liberal disciplines students for increasing their diplomas' marketability and manoeuvrability. Moreover, it is desirable to improve mutually beneficial public-private partnerships between manufacturing business industries and educational institutions for better matching between students and job openings, thanks to a tailored training career pathways. To sum up, *«a learning-based labour market requires a work-based learning system»* (L. Casano, *La Grande Trasformazione del Lavoro – Istruzione e formazione, ovvero il tassello mancante della grande trasformazione del lavoro*, Bollettino Adapt n. 41/2014).

Removing the misalignment between what employers are asking for and what employees can supply with their skills set in this ever-changing manufacturing industry is one of the biggest issues that labour market has to deal with. In order to help close this skills gap, post-secondary schools must become more responsive to employers' needs and more accessible to non-traditional students (e.g. students that do not enrol in college right after high school).

The challenges posed by the development of manufacturing productive processes are not restricted to the American context, but relate to all industrialised countries where manufacturing still play a central role from a socio-economic point of view. In order to minimize training costs, industry relies on academic providers' ability to supply a high level of entrylevel skilled workers. If educators are unable to meet industry's talent demands, manufacturers and students will increasingly view colleges as irrelevant (with implications in terms of economic and social benefit), failing their cultural and political mission of providing a favourable environment for the social cohesion. In order to properly increase the economic significance of education and training institutions addresses a major relevant challenge students are experiencing: to knowingly access the labour market instead of being overwhelmed by it.

In conclusion, a responsive education system, in line with the global transformation of work, would be not only possible and desirable, but is necessary and urgent. *Educating Workers for Jobs in the New Economy?* A genuine chance of democratisation.

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