

What is the Skills Problem in Manufacturing?

By Nichola Lowe

MANUFACTURING JOBS are coveted and for good reason. On average they provide significantly better wages and benefits compared to service-sector jobs that share a similar labor pool. This helps to explain the wide array of local and regional planning experiments aimed at stabilizing and sustaining manufacturing employment in the United States. Still, as numerous articles in the Winter 2012 issue of this magazine help to illustrate, much more is needed to support manufacturing job growth and in ways that ensure progressive outcomes in the form of quality jobs and good working conditions.

One frequently mentioned intervention involves increased federal and state support for worker training and education. But as we consider ways to extend this support, it is important to consider what else is needed to ensure that public investments in upskilling translate into quality job access. Coupling training and job quality concerns not only has implications for the status and bargaining power of manufacturing workers, but also for how and whether worker skill gets valued and rewarded.

Skill is clearly on the minds of manufacturing employers, and should also be a priority for progressive planners. It is impossible to pick up a newspaper these days and not read a story about looming skills shortages that could potentially limit the development of manufacturing in the United States. An oft-cited survey of U.S. manufacturers conducted by the Manufacturing

Institute and Deloitte Consulting estimates that close to 70 percent of firms will face a “moderate to severe shortage” of qualified labor. This has been used to explain why, despite the high unemployment rate, 600,000 manufacturing job openings remain unfilled in this country. The survey also notes that over 50 percent of U.S.-based manufacturing employers anticipate facing an intensifying skills shortage in coming years. An underlying assumption is that this skills deficit will curtail how much manufacturing activity there can be in this country, and affect future industrial competitiveness by stifling opportunities for innovation.

Narrow View of Skills: From Mismatch to Reinterpretation

But what this survey and others like it obscure is a more significant labor market challenge on the demand side of the skills equation. By this I mean that U.S. manufacturers, and policymakers for that matter, seem all too quick to narrow their definition of valued skill, shortening the list of who in our society is presumed to possess that skill and limiting the channels for skills development that they are willing to recognize, embrace and support.

This narrowed view of skill typically goes hand-in-hand with a growing educational bias that favors job seekers that have secured advanced degrees, often from four-year institutions. Community colleges are becoming a more influential voice by raising awareness of their role in opening up alternative employment pathways to job seekers who are not in a position to secure a four-year degree. Still, there is a tendency to over-emphasize the role of colleges as a *supplier* of skilled labor. As a result, insufficient attention is being



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given to efforts by community colleges and other labor market institutions to encourage U.S. manufacturers to *re-interpret* the skills they think they need and in the process, recognize greater degrees of freedom when it comes to accessing and developing workforce skill.

Recasting our labor market problem from skills mismatch to skills reinterpretation has implications for sustained job access in manufacturing. It also allows us to think more critically about the role that planners might play in expanding employer awareness of skills and sources of skills that are not encoded in advanced degrees. In essence, what is needed is a strategy of *skills reinterpretation* that starts by decoupling skills and college education and recognizes sources of worker competence that are participatory, 'lived' and context-dependent. As this implies, skill development should not depend solely on learning that takes place in a remote classroom setting, but rather should stem from the work experience itself and related work-based learning opportunities and exchanges. Formal education is likely to play an important role in supporting workforce development in manufacturing, but strategies of skills reinterpretation are fundamentally about getting employers to cast a wider net to recognize multiple channels for accessing and advancing skills. Reinterpretation then is about encouraging employers to also accept greater responsibility for upskilling through continued investments in their workforce and the development of internal pathways for career advancement.

A Tale of Two Manufacturers

To illustrate the potential impact of strategies designed to influence employer decision-making around skill, let's consider the divergent employment practices of two advanced manufacturing firms—one based in Northern Kentucky and one in Chicago. Both firms are small, employing around fifty workers. Both focus on design and engineering knowledge for product development and customized design work, and both self-identify as advanced manufacturers. Both are seeking new employees and acknowledge experiencing some difficulty with hiring in their respective labor markets, but the strategies they use to address their skill needs could not be more different.

The Chicago-based firm is intentionally moving away from a strategy of "growing its own" talent pool. They are adopting technologies which greatly curtail advancement opportunities for shop floor workers, essentially converting those into what the company CEO describes as "button-pushing" positions. They now rely on external sources for engineering talent, hiring recent university graduates. They support continued professional development for new engineers, though not for employees they hire for lower level positions. Essentially, theirs is a bifurcated employment strategy that reinforces deskilling and job churning at lower occupational levels. In isolation, they lend support to the view that a four-year degree is essential for securing a quality manufacturing job.

In the Northern Kentucky case, however, we find a very different set of practices that allow us to think more creatively about planning and policy options. Since initiating manufacturing in 2004, two shop floor workers hired with high school degrees have advanced to production engineering positions. In addition to enrolling incumbent workers in a community college and continuing education programs, the company has established in-house apprenticeship and co-worker mentoring programs. Clearly external educational supports matter here, but rather than being treated as *the* primary source of skill and skilled labor, they remain subsidiary to a more encompassing human resource strategy. What also sets this company apart is their commitment to continuous *upskilling*, which they support through an intentional strategy of over-hiring. Hiring more workers than are needed creates organizational slack and in turn, helps reduce potential conflicts between on-going training efforts and fixed production deadlines.

So what can we conclude from this comparison? It should be noted that the Northern Kentucky firm is German-owned and their practices are influenced by German models of vocational training. But simply casting this as a national "varieties of capitalism" story ignores the fact that this company is based in the United States, not Germany, and their skill development practices are supported by established and emerging U.S. training and labor market institutions—a community college, a local high school and more

recently, a regional workforce intermediary that specializes in manufacturing workforce development. As such, their experience reflects a more nuanced and potentially replicable story.

A Sector Approach

One option for influencing employment practices around upskilling involves sector initiatives in manufacturing. Sector initiatives are defined by the National Network of Sector Partners as “regional, industry-focused approaches that improve access to good jobs and/or increase job quality in ways that strengthen an industry’s workforce.” In the sector of manufacturing, these initiatives are estimated to number around 200 or so and reflect a diversity of organizational forms, including labor union-backed non-profits, federally-supported workforce investment boards and state-funded networks of community colleges.

The table below provides five examples of sector initiatives that

have adopted strategies in support of skill reinterpretation. All were initially created in response to perceived skill shortages on the part of manufacturing employers in their regional economy. But each has used their labor market position to engage manufacturers in a negotiated process over skill and in an effort to expand employment and advancement opportunities for individuals that lack college degrees.

The Recruitment Phase

So how do these five sector initiatives support strategies of skill reinterpretation? First and foremost, these initiatives work closely with employers to influence how skill plays out during the hiring process. Key here is their ability to help match job seekers with employers through pre-employment screening and assessment services. But in that role they do not simply act as agents of employers, as a private staffing agency might. Rather, they mediate the hiring process to support job seekers that might

otherwise be excluded from quality employment opportunities.

As part of this effort, most of these initiatives encourage employers to stop making hiring decisions on the basis of how an applicant looks “on paper.” Why? Because a resume tends to reinforce an educational bias and can obscure sources of tacit knowledge which may be hard to demonstrate and defend in writing. Sector initiatives instead work with companies to create evidence-based skill assessments, which they often develop in partnership with technical workers within the company. As subject area experts, these technical workers provide detailed information on skill requirements for specific tasks and at multiple occupational levels. This knowledge, which is not always in reach for human resource managers, is essential for clarifying skill requirements and is used to encourage employers to conceptualize bundles of attributes that reflect a variety of work experiences and backgrounds.

initiative	date started	location	type	manufacturing focus
Wisconsin Regional Training Partnership	1992	Milwaukee	jointly union- and industry-funded, grant funded	manufacturing, various
Lancaster County Workforce Investment Board	1999	Lancaster County, PA (west of Philadelphia)	WIB	food processing, metals
BioNetwork	2004	North Carolina, statewide	community college–driven non-profit	biomanufacturing, biofuels, food processing
ManufacturingWorks	2005	Chicago	WIA community affiliate, driven by mayor’s office	food processing, metals & machinery
Partners for a Competitive Workforce	2011	Greater Cincinnati, including Indiana and Kentucky	umbrella organization for regional workforce programs; non-profit with some grants, some WIB funding	auto suppliers, aviation, metal fabrication

But what happens when job seekers have gaps in skills that employers may be looking to fill? By specifying skills and bundling worker attributes, sector initiatives are in better a position to advocate for job seekers that might have most but not all of the preferred qualifications. This might involve getting employers to rank order attributes, thereby creating greater maneuvering room for applicants with some gaps farther down the list. Or it might involve sector initiatives providing new employee training that addresses more prevalent skills gaps within the applicant pool.

Existing Employee Support

Most sector initiatives also seek to influence how employers engage with and treat their existing workforce. Important here are interventions that encourage employers to better harness worker knowledge when introducing improved production practices and techniques—in other words, turning to workers when developing process innovations.

Sector initiatives first show evidence of underutilization of worker knowledge, including structural barriers that limit involvement of shop-floor workers in decision-making processes. They then intervene to remove these barriers, but also take steps to formalize processes for augmenting and defending shop-floor knowledge. In older firms, they have been known to create interim apprenticeships that act as skills equalizers for

incumbent workers helping to codify and augment skills learned earlier in their careers. But they also intervene to establish linkages to external institutions, including community colleges, that can support upskilling and related certifications. As this suggests, sector initiatives do find ways to incorporate formal educational programs and credentials, but in doing so they avoid blindly pushing a college or university degree. Rather, they use their labor market position to create a flexible training and credentialing resource that helps to prepare industry newcomers, but equally ensures that the hidden talents of the incumbent workforce become more visible and valued.

A Policy Crossroads

We are at a policy crossroads with respect to manufacturing. Federal and state industrial policy, while not quite set, poses a potential threat to manufacturing job access. President Barack Obama has been a strong advocate of manufacturing, but will this translate into deeper policy changes? Key agencies that influence manufacturing policy direction and discourse seem all too willing to take employer statements about their skills gaps at face value. As a result, these agencies are often focused on bolstering external educational supports and getting more individuals through these systems—the popular mantra being “college for all.”

If we start with the assumption that employers tend to overstate their skill requirements and in ways that

unnecessarily conflate skill with advanced degrees, we may find ourselves in a position to push for a more comprehensive institutional solution to standard “educational-fix” approaches. Efforts to shape and reshape employer perceptions of and practices around skill may result in more accurate strategies for skills identification. They could also prove more effective in stabilizing manufacturing employment and protecting established pathways into the middle class.

Sector initiatives provide a vehicle for progressive planners to influence employer thinking and decision-making, all the way down to the shop floor. Still, these initiatives are also in jeopardy and therefore in need of planning advocacy. As one example, funding sources for sector initiatives have been affected by budget cuts to the federal Workforce Investment Act. At stake is not just the future of manufacturing work, but the staying power of U.S. manufacturing. **P²**