

21st Century Apprenticeships:

Embracing Nontraditional PARTNERSHIPS and TECHNOLOGIES

BY GAYLA STONER, BRUCE BIRD AND JOHN GAAL

While concerns for skill shortages within the world of trades workers have been a focal point of a variety of recent studies and reports, the reactive alarm has not been sounded in the modernized registered apprenticeship program. Registered apprenticeship is a combination of on-the-job learning (OJL) and related classroom and shop instruction. There are more than 1,000 careers registered through apprenticeship programs with the U.S. Department of Labor's (DOL) Employment and Training Administration's (ETA) Office of Apprenticeship (OA) or federally recognized State Apprenticeship Agencies. A number of existing federally registered apprenticeship programs (RAPs) have

proven to be proactive and forward-thinking in their approach to meeting the needs of skilled trades workers.

Several such programs are overseen by John Gaal, director of training and workforce development for the Carpenters' District Council of Greater St. Louis and Vicinity; Gaal recently completed seven years of service as a member of the DOL's Federal Advisory Committee on Apprenticeship. To be sure, Gaal played an instrumental role in expanding the Code of Federal Regulation's Title 29, Part 29's (29CFR29) venues for approved training, to include nontraditional aspects such as online coursework and instructor quality not previously considered. (For more on career and technical education (CTE) instructor quality, please refer to *Certifying*

High-Quality CTE Educators in the January 2011 issue of *Techniques*.) On October 29, 2008, the ETA issued updated regulations of the National Apprenticeship Act of 1937. Significant historical changes of the traditional apprenticeship training process are happening as a result of modifications to 29CFR29.

2010 Versus 1969 Study

Manpower Inc. released the *2010 Talent Shortage Survey* of 35,000 global employers in August 2010. First on the list of employer challenges was the lack of skilled trades workers. Manpower's analysis report of the survey noted a plethora of concerns for the skilled trades. The shortage of skilled trades workers stems from several problems, including the retire-



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Education and training is a vital part of any employer's business today, and education and training will increase and maintain the competitiveness of a skilled workforce.

ment of older blue-collar workers without adequate replacements, technical training that is not meeting businesses' needs, and the higher status accorded knowledge work over more manual forms of labor among those beginning their careers.

In addition, the report made recommendations to address the skill shortages that include: (a) the promotion of positive attitudes toward skilled trades work; (b) aligning technical training with business needs; (c) developing international certifications to accelerate mobility; and (d) using strategic immigration policies alongside long-term domestic solutions.

Interesting to consider and compare with these findings is the *Reducing Skill Shortages in Construction* study produced by Weinberg (1969) concerning the issues of "manpower problems," and the report of a Presidential Task Force on apprenticeship programs. Forty-one years ago, Weinberg found four problems affecting the adequacy of the construction labor source consisting of (a) adequacy of train-

ing; (b) barriers to the entry of minority workers; (c) high toll of work accidents; and (d) obstacles to worker mobility.

Put side by side, great strides have been taken within the world of skilled trades workers since 1969; however, considerable similarities exist in the findings throughout these two reports. In 1969, there was great concern for quality of training and a need for an increased number of skilled trades workers. The 2010 report noted that an alignment between educational institutions and employer demands of the skilled trades worker is necessary. Today, the call exists for media and K-12 schools to create innovative avenues and approaches for technical training that will encourage positive attitudes of the skilled trades worker. Consequently, media intervention is evidenced by means of Giegerich's (2010, p. A1) claim, "While a tight labor market continues to shut out everyone from a recent college graduate to workers with years of experience, area industries have erected a permanent "help wanted" sign for highly qualified machinists and tradesmen."

Promote Positive Attitudes and Align Training of Skilled Trades Workers

Social stigma is declared by Manpower as one of the barriers blocking our youth from entering the skilled labor market. How does our nation overcome stigma? Education! Careers are chosen for a multitude of reasons—including financial security, advancement prospects and job mobility. The Occupational Employment Statistics reported in May 2009 that the nation employed 743,760 carpenters with an annual average salary of \$43,640. Educating society through the establishment of an accurate rundown of this occupation is vital in the efforts to prevent an ongoing skill shortage.

One such example of a K-12 innovative industry-based partnership is the Bayless High School Floor Layers Middle Apprenticeship Program (MAP). (Refer to www.youtube.com/watch?v=CEKQCQ8nWS0 for more information.) Herein, the St. Louis Floor Layers Joint Apprenticeship Program (FLJAP) worked collaboratively with the Special School District of St. Louis County (SSD), the Bayless School District (BSD), and Ivy Technical College to create a first-of-its-kind spinoff of the Gates Foundation's Middle College Experience model that was solely trade related.

Secondary students spend their 11th- and 12th-grade years completing the related classroom and shop experiences that a formal postsecondary FLJAP apprentice would over the course of four years. Upon high school graduation, MAP graduates begin the OJL portion of their apprenticeship while concurrently completing five prescribed (three credit) courses over the course of the next four years. Successful MAP graduates who finish the FLJAP will not only receive a DOL journey-worker completion certificate, but an associate degree, too!

Another recommendation of the Manpower study is for the alignment of training with the needs of businesses. Accordingly, Terry Nelson, executive

“Apprenticeship learning has its roots in the pre-industrial agrarian age, where an apprentice would work alongside a master to learn a trade. This practice lives on in many forms, and it still predominates in the skilled trades of electricians, carpenters...” Hay and Barab (2001, p. 286)

secretary-treasurer for the Carpenters’ District Council of Greater St. Louis and Vicinity, makes this parallel statement, “Creating and maintaining a partnership with contractors will help them be profitable and successful which, in turn, will create more man hours for our members” (SoIL CJAP, 2010). Considering that the Carpenters’ District Council consists of nearly 60 Local Unions spread over 120 counties covering Missouri, Kansas and Southern Illinois, the potential alliances for business and skilled trades workers is colossal.

An additional aspect of the alignment of training with the needs of businesses is the connection the St. Louis Carpenters Joint Apprenticeship Program (CJAP) has with industries and manufacturers, especially in the southeast Missouri area. Throughout Missouri, local industrial partners collaborate and participate with training consortiums which are aligned with community colleges. The primary focus of these training consortiums is to provide training for incumbent workers within the industrial and manufacturing facilities. These facilities have found it necessary to provide updated and cutting-edge training for their employees as an approach to remain competitive in today’s globalized economy. By their participation within a consortium, various training opportunities are much more to their avail in areas such as mechanical maintenance, electric and electronic maintenance, hydraulics, and pneumatics; leadership training such as quality control and inspection procedures; as well as safety training.

The CJAP not only participates within

these consortia, but also provides some of their training efforts in areas such as precision measurement, welding and mechanical components. By this intervention the CJAP has a close relationship with not only the construction arena, but also the industrial and manufacturing employers in the area. Education and training is a vital part of any employer’s business today, and education and training will increase and maintain the competitiveness of a skilled workforce.

Develop Certifications to Increase Mobility

The CJAP has taken a proactive approach that follows Manpower’s recommendation that, “Employers, skilled trades associations, governments and educators should partner in this effort, making sure to acknowledge the velocity of change and the impact of technology on particular job categories” (2010, p. 3). In this geographic area, the prevention of skill shortages includes the creation of appropriate green certification programs for carpenters from a local and national standpoint.

The CJAP has partnered with the Home Builders Institute (HBI), which is the workforce development arm of the National Association of Home Builders (NAHB), in weatherization skills as well as green (PACT) certifications. These efforts are being overseen by the St. Louis Green Building Advisory Committee (GBAC) as a result of this collaborative undertaking. The GBAC is made of community professionals such as architects, green builders as well as local community colleges.

Modernism and Innovation

Innovation is a term that may have different meanings to different individuals, but Merriam-Webster states that innovation is “the introduction of something new” or “a new idea, method or device” (RealInnovation.com, 2010). Additionally, eInnovation is a term that has been coined by educational institutions to mean innovation with the use of electronic technology. It could be said that the DOL believes in eInnovation by their recent update of 29CFR29, the National Registered Apprenticeship System, in which one major addition includes permission to utilize electronic media as a tool for instruction:

“Increased options for using electronic media to provide related technical instruction to apprentices. This change is designed to take advantage of technological advances that allow for distance learning and other technology-based instruction,” according to a DOL News Release, Oct. 29, 2008.



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Technology is changing our world in construction as in any other environment; students, such as young apprentices, are quite different today than just a few years ago because the majority of them know a world where the Internet is part of their everyday life and always has been.

However, Taylor (2010, p. 135) insists, "Courses that use the latest media and communications technologies should supplement and not replace traditional courses."

As noted earlier, under the guidance of Gaal, the CJAP was also involved

in a pilot eLearning or online training initiative that satisfies the distance learning feature of the updated registered apprenticeship regulations. The CJAP is very much involved and on the cutting edge of their eLearning and technological endeavors, and agree wholeheartedly with the statement by Carol A. Twigg, 2001, from The Pew Learning and Technology Program with the Center for Academic Transformation when she says:

"When we think about how to utilize technology to improve learning, the key is to focus on what we can do with IT that we cannot do without it. Technology can create environments that provide individualized learning approaches that serve each person in ways that he or she can most benefit" (p. 9).

Online distance learning and the use of technology provide opportunities for learning not found in the traditional face-to-face environment, especially for the technologically advanced student or apprentice of today. Not only does it offer anywhere, anytime learning, online distance learning is self-regulated learning and provides a collaborative initiative not found in the traditional classroom. As found in a report prepared for the U. S. Department of Education: "Students in online conditions performed modestly better, on average, than those learning the same material through traditional face-to-face instruction" (2010, p. 14).

The CJAP will use a blended approach to much of its eLearning undertakings whereby the technical areas will be available online, and the manipulative areas will be conducted at one of their training centers. The CJAP believes that with this approach, an extended curriculum can be implemented to better prepare the apprentice for the construction field as well as set in motion a norm of lifelong learning.



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Without a doubt, modernizing the system through the addition of classroom instruction via electronic media delivery, encouraging positive attitudes of skilled trades workers, and thinking outside the box in regard to technical training, have the potential to impact in a positive manner the global competitiveness of the skilled workforce within the United States.

Where Have We Been and Where are We Going?

As reported by Weinberg (1969, p. 3), "Between 1967-1975, the construction industry will require, according to projections by the Bureau of Labor Statistics, an increase of about 12 percent, or some 100,000 workers annually, in the amount of skilled manpower to meet the anticipated high levels of construction activity and to replace those workers who die or retire."

From 2008 through 2018, employment is projected to increase up to 18 percent within the construction industry, per the Bureau of Labor Statistics. Indeed, carpenters are listed as one of the top 20 occupations with the largest new growth by 2018, through means of new jobs expected to grow by 165,400. Today, there are approximately 30,000 program sponsors representing 225,000 distinct employers that offer registered apprenticeship training to more than 300,000 apprentices, as reported by the U.S. DOL.

Clearly, 29CFR29 and forward-looking leaders as those within the St. Louis CJAP, address many of the 2010 recommendations of the Manpower study. Updating the National Apprenticeship System's regulations with allowance for the provision of related instruction via electronic media will push through

the major barriers of social stigma by revolutionizing the apprentice's learning experience. In addition, the mobility of skilled workers will be increased through the development of innovative certifications. Without a doubt, modernizing the system through the addition of classroom instruction via electronic media delivery, encouraging positive attitudes of skilled trades workers, and thinking outside the box in regard to technical training, have the potential to impact in a positive manner the global competitiveness of the skilled workforce within the United States. To this end, U.S. Secretary of Education, Arne Duncan (2010, p. 68), proclaims, "The United States must educate its way to a better economy." **I**

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