

College: Gadsden State Community College
Location: Gadsden, Alabama
Practice: Machinist/Tool & Die Makers Apprenticeship
 Developing dedicated and well-trained employees for small metalworking companies

<i>Year Started</i>	1994
<i>Budget</i>	\$180,000
<i>Program Participants</i>	35
<i>College FTE</i>	5,500
<i>Target Sector</i>	Manufacturing
<i>Staff Size</i>	6 FT
<i>Structure</i>	Program is run through the Bevill Manufacturing Technology Center which is affiliated with the college
<i>Key Outcomes</i>	Increased levels of employment and wages Business relocation within service area

Introduction

Machinists and tool and die makers are among the most highly skilled production workers in today's economy. These men and women produce the precision instruments that enable machines to manufacture a variety of everyday products, from clothing and furniture to heavy equipment and airplane parts.

Modern production technologies, however, are changing the way that these jobs are performed. Increasingly, computer-aided design (CAD), computer-aided manufacturing (CAM), and computer numerical control (CNC) are used in development and production, allowing for higher levels of precision and productivity. As a result, the U.S. Department of Labor expects jobs for machinists

and tool and die makers to grow more slowly than most occupations as computers perform more and more of the tasks formerly done by humans. Nevertheless, new entrants into these fields are in short supply and the current workforce is "graying;" employers continually report difficulties in finding qualified employees.

In Gadsden, Alabama, local manufacturers have been facing this shortage of skilled workers head-on for over a decade. Through the collaborative apprenticeship program of Gadsden State Community College and the Bevill Manufacturing Technology Center, local industry has been able to successfully combat the staffing problem.

Program focus	Sector specific	Economic condition	Economic base			Target populations
			Mfg	Agr	Svc	
Technical education	Yes	Stable	30	0.7	29	Dislocated workers, economically disadvantaged, existing workforce, unemployed, youth/students

<i>Service Area</i>	<i>Calhoun, Cherokee, DeKalb, Etowah, Marshall, and St. Clair Counties</i>
<i>Total Population</i>	440,000
<i>Median Household Income</i>	\$26,000
<i>% Below Poverty Level</i>	16.6
<i>% Unemployment Rate</i>	5.1
<i>% Minority Population</i>	11.5
<i>% Rural Population</i>	46.0
<i>% High School Graduates</i>	60.1
<i>% College Graduates</i>	9.7

Community Background

Nestled in the foothills of the Appalachian Mountains in northeastern Alabama, Gadsden has long been home to a robust manufacturing economy, with national companies like Republic Steel and Goodyear as anchors. Indeed, it depends greatly on various manufacturing industries, including primary metal, tool and die making, metal fabrication, poultry processing, contract manufactured consumer appliances, and some plastics. Unfortunately, though high-tech manufacturing positions are increasing, manufacturing jobs have begun to decline across the board.

To combat the slowdown in its economy, Gadsden, through the Gadsden-Etowah Industrial Development Authority, has been expanding and diversifying its industrial base. For example, the region is promoting growth in the automotive sector to coincide with its ability to produce skilled associates and reduced operating costs for that industry. Aiding this effort was the fact that Gadsden was named the Most Livable City in America (under 100,000 population) in 2000 by the U.S. Conference of Mayors.

Program Description

Gadsden State Community College (GSCC) was established in 1985 when Alabama Technical College merged with Gadsden State Technical Institute and Gadsden State Junior College. Its mission is to serve the surrounding community as a resource

center, offering local people a wide range of educational and cultural opportunities. To achieve this mission, the college works closely with regional civic, business, and industrial leaders.

The Bevill Manufacturing Technology Center was created in 1987 as a joint initiative of the college, the city of Gadsden, and the University of Alabama. The center's charge: to increase the technological capacity of the local workforce, provide technical assistance to area manufacturing firms, and support local industrial recruitment efforts. In 1996, the center became part of the Alabama Technology Network. Today, the Bevill Center continues to provide advanced manufacturing assistance to the surrounding region, but has expanded its service to include workforce training, education, and extension activities.

The Machinist and Tool & Die Makers Apprenticeship Program is a partnership of local industry, GSCC, and the Bevill Center. Each firm that participates in the program performs its own screening and hires entry-level employees each spring. Employees who meet certain skill-level requirements are offered apprenticeship status. Upon enrollment, each apprentice is directed into one of two tracks: machinist or tool and die. A third track—mold making—is being created in 2001.

For the first three years of their apprenticeship, all students take similar course loads, including training on basic machining, blueprint reading, geometric dimensioning, and heat tolerancy. By the fourth and final year, students are split according to the track they have chosen. Machining students are subject to more hands-on training in quality control assurance and individual components, while tool and die students receive additional training in building dies and performing tooling operations. If the students perform up to standard, their sponsoring companies pay all costs for courses, books, and on-the-job training at the center. Students spend a total of 680 hours at the Bevill Center and GSCC, and an additional 4000 hours learning on-the-job skills with their employers.

To help ensure that the program meets the changing needs of industry across the nation, GSCC and the Bevill Center recently certified the program with the National Institute for Metalworking Skills. This will standardize the certification of a machinist so that when a graduate changes employment (whether in- or out-of-state), any future employer will be assured that he or she has the requisite skills and capability to perform certain tasks.

Outcomes

Created in 1991, the program started with only seven student apprentices. As of Spring 2001, 40 students, including two women, have completed the program. An additional 32 are apprenticing with nine participating manufacturing firms in 2001.

Each participant in the program receives recognition from the National Tooling and Machining Association and a certificate from Gadsden State Community College. However, the program does not end there. Once students have completed their assigned technical track, GSCC encourages them to continue their education, taking core academic classes to earn an associate's degree. In most cases, the apprentice's employer will continue to pay for his or her education.

Strengths, Challenges, and Replicability

Challenges for the program include reaching out to firms located in more distant parts of the GSCC service area to increase the program enrollment, and encouraging more women and minorities to take advantage of the educational opportunities provided by the program. The scale of the program is limited by the availability of company journeyman positions, not student interest. The two women who have graduated thus far transferred from medical programs in order to have more regular hours and higher income opportunities. Also, it is difficult to keep all equipment up-to-date. Using current technology provides validity in the eyes of both the students and the firms associated with the program, and is considered one of the Bevill Center's strengths.

The success of this program can be attributed largely to the partnership between local industry, GSCC, and the Bevill Center. This type of alliance can yield similar benefits in other communities facing similar workforce challenges.

For more information, contact:

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