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# Completers of Technology Center Full-Time Programs

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## *Executive Summary*

### **The Economic Impact of CareerTech Full-Time Programs**

Oklahoma's CareerTech system currently trains more than 11,000 adult and secondary school students annually through its full-time programs, preparing them for a diverse set of occupations ranging from nursing to aviation maintenance. The expanding role of these programs is reflected in the fact that vocational and technical coursework is the primary source of education beyond high school for a large segment of the Oklahoma workforce. Nearly 1 in 5 Oklahoma workers ages 18 and over report having completed a vocational or technical program, making it the most common level of educational attainment beyond high school among state workers.

Understanding the economic impact of these programs is becoming increasingly important because of the ongoing public investment in the CareerTech system and the role of technical education in fulfilling the state's economic development mission. This study examines the impact these programs are having on the Oklahoma economy by estimating the lifetime income gains from training realized by completers of full-time programs. Wage gains to training can have a significant impact on the future earnings stream of full-time completers, and these wage gains in turn contribute to the overall level of income statewide.

### **Income Gains from Vocational and Technical Training**

The need to measure the effectiveness of education at all levels has resulted in numerous recent empirical studies attempting to isolate the effects of vocational education and training on labor market outcomes. A growing consensus within this body of research is that vocational education, as with other forms of post-secondary education, translates into higher income over the work life cycle. Wage survey data also confirm that returns to vocational and technical education can be sizeable for state workers. In recent Census survey data, Oklahoma workers who have completed vocational and technical training earn an additional \$2.00 per hour, or nearly 20 percent more, relative to workers with only a high school diploma. Based on all sources of income, vocationally and technically trained workers earn nearly \$4,100 more per year than those with no education beyond high school.

### **A Model of Lifetime Income Gains from Training in Oklahoma**

In the study, a lifetime income model is constructed that estimates the portion of the wage gains realized by full-time completers that can be attributed to CareerTech training. The model is based on findings from existing research along with Census Bureau and Oklahoma Employment Security Commission wage survey data. The model allows completers to realize post-training

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income gains in four ways: 1) a wage increase upon entry into the workforce, 2) faster growth in earned income over the working lifetime, 3) faster growth in non-earned income (e.g. interest, dividends, and transfer payments) over the working lifetime, and 4) higher earned and non-earned income after the traditional retirement age of 65. For completeness, the model allows for completers to periodically drop out of the labor force and experience periods of unemployment.

### **Students Experience Significant Lifetime Income Gains**

The model is applied to the more than 11,000 students completing a full-time training program in fiscal year 2002 (FY02) and the results indicate that completers are enjoying significant wage gains relative to completing only a high school diploma. The average estimated hourly wage rate following training for students completing full-time programs in FY02 is \$10.47, or approximately 12 percent gain above the estimated wage rate for workers of similar age but with no education beyond high school. Wage rates are significantly higher for adult completers (\$12.46) than for secondary completers (\$7.58), which is consistent with the well-established effect of age and experience on wages.

Over the work life, model estimates indicate that a typical 25 year old CareerTech full-time program completer can expect to add more than \$371,000 (\$152,000 in current dollars) to their lifetime earnings stream relative to completing no additional education beyond high school. Approximately two-thirds of the lifetime income gain is due to faster growth in earned income over the working lifetime. The remainder of the income gain comes in the form of initial wage gains when entering the workforce following training, higher non-earned income over the work life, and higher income in retirement.

### **Oklahoma Benefits from Added Earnings and Tax Receipts**

Across all 11,680 FY02 completers, full-time training is expected to add approximately \$4.3 billion (\$1.8 billion in current dollars) to their future lifetime income stream. After adjusting for out-migration, approximately \$1.1 billion in current dollars of the added income is estimated to be earned within Oklahoma by FY02 completers. These income gains will produce sizeable annual economic ripple effects in the state economy into the extended future and will support an estimated \$990 million (current dollars) in future earnings accruing to other workers statewide, or a total current dollar income gain of more than \$2 billion as a result of the training. Added sales and income taxes paid directly by completers to state and local government is estimated to total \$83 million, or more than \$7,000 per completer over their work life. Through multiplier effects, an additional \$74 million is expected to be paid by other workers statewide as their future earnings increase, for a total tax impact of \$157 million over the work life of completers.

### **Other Benefits to Vocational and Technical Training**

While this study focuses on increased earnings over the work life, many other documented benefits can accrue to vocational and technical program completers. For example, vocational and technical training provides faster entry into the labor force for young workers and increases the likelihood of becoming a professional or manager. Vocationally trained workers also have higher labor force participation rates and experience lower rates of unemployment than workers with only a high school diploma. Other potential socioeconomic benefits can accrue to the state

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as well as a result of reduced reliance on public services (e.g. unemployment compensation and welfare benefits), improved health benefits, reduced absenteeism, and other benefits of education beyond high school.

**Full-Time Program Income and Tax Impacts (FY02 Completers)**

		Income Impacts				Tax Impacts		
Group	Completers	PV of Direct Income Gain From Training	Migration Adjusted Direct Income Gain	Indirect and Induced Income Gain	Total Income Gain	Direct Tax Revenue	Indirect and Induced Tax Revenue	Total Tax Revenue
Adult	6,923	1,039,032,737	656,550,829	590,895,746	1,247,446,575	49,241,312	44,317,181	93,558,493
Secondary	4,757	742,660,008	444,958,680	400,462,812	845,421,491	33,371,901	30,034,711	63,406,612
Total	11,680	\$1,781,692,745	\$1,101,509,509	\$991,358,558	\$2,092,868,066	\$82,613,213	\$74,351,892	\$156,965,105