

NC DEPARTMENT of COMMERCE LABOR & ECONOMIC ANALYSIS





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COMMON FOLLOW-UP SYSTEM

TABLE OF CONTENTS

WHAT IS THE COMMON FOLLOW-UP SYSTEM?	2
HISTORY OF THE COMMON FOLLOW-UP SYSTEM	2
How is the Common Follow-up System Operated?	4
How are CFS Data Processed?	4
IS THE CFS COST-EFFECTIVE?	5
WHAT ARE THE STRENGTHS AND LIMITATIONS OF CFS DATA?	6
CFS CURRENT OPERATION (2019)	6
Participation Summary Across the Years	8
INTERRELATIONSHIPS AMONG AGENCIES IN THE PROVISION OF SERVICES	11
Relationship of Individuals Served to the North Carolina Economy	13
OPERATION SUMMARY	14

A REPORT ON THE OPERATIONS OF THE NORTH CAROLINA COMMON FOLLOW-UP SYSTEM May 1, 2020

The 2020 Common Follow-up System (CFS) Operational Report provides information on CFS activities over the past calendar year. This report includes information related to education, employment and training programs for which data were reported by state agencies under the requirements of the North Carolina General Statute Chapter 96 Article 4.

WHAT IS THE COMMON FOLLOW-UP SYSTEM?

The Common Follow-up System provides information on the educational and employment outcomes of participants in publicly supported educational, employment, and training programs. CFS grew out of the recognition by a group of state agencies that quality outcome information was needed on the participants of educational, employment, and training programs. This data was essential for program planning, evaluation, and resource management.

Although each of the agencies conducted independent follow-up studies to fulfill specific programmatic, regulatory, or other requirements, information content and collection procedures were specific to each agency. Existing collection methods were often expensive and no mechanism was available to share information among agencies, review outcomes across programs and agencies, study the relationships among programs and agencies, or to examine results for the system as a whole. In short, there was no consistent method that allowed for the examination of North Carolina's education, employment, and training community. CFS was developed as a cost-effective response to these limitations.

HISTORY OF THE COMMON FOLLOW-UP SYSTEM

The CFS was developed in 1992 as a cooperative venture of the participating agencies under the auspices of the North Carolina State Occupational Information Coordinating Committee (NCSOICC). The participating agencies chose the former Employment Security Commission (ESC) as the system operator, due to its expertise with large data sets and its responsibility for the unemployment insurance wage file. In the initial year, a prototype matching system was developed. This matching system provided a mechanism whereby data submitted by an individual participating agency were matched to data submitted by each of the other agencies and to employment and wage information in the Unemployment Insurance wage file.

Over the first few years of operation, the CFS evolved in data processing procedures and system expansion and was converted from a single year matching system to a longitudinal database. The longitudinal database structure provided a mechanism for following an individual's progress across education, employment and training programs across time as well as supporting comparisons at specific intervals or points in time. This conversion also provided the opportunity to study the long-term impact of programs, to examine the interrelationships among agencies in the overall provision of services, and to gain a better understanding of the paths individuals follow while utilizing these services. The number of individuals processed per year increased from 330,045 in 1992 to over 1.7 million in 1995, while the number of agencies grew from six to eight over the same period.

In 1995, the General Assembly enacted legislation that amended Chapter 96 of the North Carolina General Statutes and established CFS by statue. The legislation defined system participation, established and assigned operational and evaluative responsibilities, mandated data integrity and confidentiality and outlined reporting requirements and schedules.

Over the next several years, there was increased interest in the data contained in the CFS. The Workforce Investment Act (WIA) of 1998 stimulated further interest and attention to the CFS data. WIA mandated the collection, calculation and reporting of performance and accountability measures for workforce training programs operated throughout the state. ESC worked in collaboration with the Division of Workforce Development (DWD) on the development of procedures for the processing, calculation and reporting of the state's WIA performance measures. To help meet the reporting requirements for WIA, additional data elements were added to the CFS in the calculation of performance measures.

During the 2001 Legislative Session, the General Assembly transferred the evaluative responsibility for the CFS from the Office of State Budget and Management (OSBM) to the ESC. In July of 2011, the General Assembly enacted legislation that transferred the ESC to the North Carolina Department of Commerce. Responsibility for the CFS was moved to the Department of Commerce's Labor and Economic Analysis Division (LEAD).

In 2012, the General Assembly enacted Session Law 2012-131 to reform the state's workforce development system. Part of the law called for the Department of Commerce to improve and strengthen the CFS and to collaborate with the Commission on Workforce Development to utilize information from CFS to create performance measures for the state's workforce development system. To improve and strengthen the CFS, the Department of Commerce began several initiatives to enhance technology for the system and update documentation for agency and programmatic information. CFS was migrated from its mainframe computing environment to a server-based platform to improve system capacity.

The North Carolina Department of Public Instruction was awarded a grant from the U.S. Department of Education in 2012 to build a State Longitudinal Data System (SLDS). The goal of the system was to provide a mechanism to follow individuals across North Carolina's K-12 education system, higher education, and into the workforce. The SLDS project was able to establish a link between the system and the employment-related data in CFS, which was completed through a joint effort between Commerce and the Government Data Analytics Center (GDAC) within the Office of Information Technology Services.

As part of its ongoing efforts to improve CFS, the Department of Commerce applied for and received a competitive grant in 2013 with the U.S. Department of Labor's Employment and Training Administration through the Workforce Data Quality Initiative (WDQI) program. The grant was used to enhance the CFS technology capabilities and to fund the development of the North Carolina Tool for Online Workforce and Education Reporting (NC TOWER). NC TOWER is an online reporting system that provides employment

and wage outcomes by program, degree and institution for North Carolina's public higher education systems.

To enhance the CFS system outputs, LEAD staff worked with the Division of Workforce Solutions and the NCWorks Commission to develop a set of performance measures for the state's Workforce Development System. These measures were used in the Commission's first report "Measuring the Performance of North Carolina's Workforce Development System: A First Look" in 2014, and the subsequent reports. The most recent <u>seventh report</u> was released in January 2020.

During the 2014 Session, the General Assembly enacted Session Law 2014-100 which required the Department of Commerce to develop a plan for the transfer of the information and capabilities of CFS to GDAC. Commerce worked closely with GDAC to develop the business and system requirements for the new system. In 2015, LEAD and GDAC migrated the historical CFS data from its mainframe computing environment into the GDAC server-based environment. This included the migration of over 100 gigabytes of data as well as an inventory and classification of all historical data files and elements.

Beginning with the 2015 program year and continuing today, contributor data submissions and processing have been completed in the GDAC environment. During the following years, LEAD staff continued to work with GDAC and the contributing agencies to enhance the CFS content and infrastructure as well as make improvements to the contributor data portal.

HOW IS THE COMMON FOLLOW-UP SYSTEM OPERATED?

The participating agencies supply data files based on their operational and reporting periods, which can be a calendar quarter, federal fiscal year, state fiscal year, academic term or school year. The enhanced CFS is designed to receive and align information across varying reporting schedules. The number of submitted data files and corresponding file structures are customized for each agency and align to contributing agency's existing information systems. The submitted files are created from administrative records that are maintained by each of the contributors and contain a wealth of information specific to each contributor, including demographic data, program enrollment information, program completion, course participation, services received, and other agency-specific information.

HOW ARE CFS DATA PROCESSED?

Each contributing agency has defined reporting timelines customized to their specific program and agency operations. These reporting timelines are developed in collaboration with the contributing agencies and are catalogued in the GDAC contributor portal. The enhanced CFS provides an automated email notification to each contributor with a reminder of their reporting deadlines. In addition, LEAD works closely with the contributing agencies to track reporting time lines and identify any reporting delays. The contributing agencies transmit their data files to the secure GDAC environment, once received, information is subject to an automated data validation process. The validation process generates edit reports for each submitted data file and the reports are available to the contributing agencies through the GDAC contributor portal. Contributors review the edit reports and consult with staff at LEAD to determine if updates or corrections are needed. Agencies are responsible for reviewing and approving their final data

submissions. Once approved the data are loaded to individual contributor warehouses in the GDAC environment.

In addition to the information supplied by the education, employment and training agencies, the Department of Commerce's Division of Employment Security provides employment and wage information as well as information on Unemployment Insurance claims and benefit recipients. These data are processed monthly and quarterly and loaded to specific tables within the GDAC environment.

Following the completion of the data loading process, LEAD analyzes data from contributing agencies in conjunction with employment and wage data. The resulting information are utilized in the development and production of reports, files and other related research products.

The confidential nature of information contained in the CFS mandates the use of strict safeguards in the collection, storage, and use of the data. CFS data are stored within the secure GDAC environment. Access to the systems requires individual user data access profiles, as well as individual user ID's and passwords. At the time of system enrollment and with every data release, contributors and staff are informed of the confidential nature of the data and the legal restrictions on its use. All informational products are subject to a set of data suppression procedures to prevent the disclosure of personally identifiable information.

IS THE CFS COST-EFFECTIVE?

The CFS is an efficient and cost-effective method for collecting follow-up information for education, employment and training program participants. The extensive use of administrative records and automated matching systems allows the costs to be held below that of any system that would rely upon phone or mail surveys to collect similar data.

The cost-effectiveness of the CFS can also be evaluated in terms of the benefit that the data provide to the participating entities. The system generates employment and wage data without the use of telephone or mail surveys. Benefits include time saved not having to produce mail and analyze responses from program participants, making the return on investment invaluable.

Several of the contributing agencies have utilized the information available through CFS to help meet a variety of state and federal performance, policy and evaluation initiatives. The North Carolina Community College System has utilized the information to help in meeting federal performance requirements for the U.S. Department of Education including the National Reporting System for Adult Education programs and the Perkins IV core indicators. In addition, the Community College System utilized data from CFS in the development of performance measures system for North Carolina's 58 Community Colleges. This includes the development of an employment measure that will be utilized as part of the NCCCS' performance system to assess post-completion employment outcomes.

The University of North Carolina has utilized information through CFS to support internal analyses, assist in strategic planning and provide employment related information to the UNC Board of Governors in its program review process. The UNC web-based electronic dashboard contains a variety of enrollment and graduation statistics including a link to the employment and wage outcomes in the NC TOWER web portal. In addition, information from the CFS is utilized by agency partners in meeting state and federal performance and evaluation initiatives. These efforts have included the use of CFS data in assessing the provision of services to participants as well as the evaluation of employment and wage outcomes. CFS data is often utilized to support economic development activities in the state and assist stakeholders to make informed decisions for business recruitment and expansion.

WHAT ARE THE STRENGTHS AND LIMITATIONS OF CFS DATA?

The scope of the CFS is extensive in terms of the number of contributing entities, the number of individuals included in the system and the breadth of program and service coverage. Review of follow-up systems in other states reveals that North Carolina's CFS offers the most comprehensive coverage of education and workforce programs of any state longitudinal data system. Many states and governmental entities with similar missions and mandates view the CFS as a model for delivering follow-up information. The CFS is an efficient and cost-effective tool for long-term follow-up due to the reliance on automated matching of administrative records. However, since much of the data utilized in the CFS were originally gathered for different purposes, the resultant output possesses both inherent strengths and limitations. Several of the most significant areas are described below:

Wage information includes information on individuals:

• working in jobs covered under North Carolina Unemployment Insurance Laws

Available employment-related data includes:

- employment status of the individual
- size of the employing firm
- North American Industry Classification System (NAICS) code of the firm.

Wage information reflects total quarterly earnings; hourly or weekly wages are not available.

Wage information is not available for individuals who:

- work outside of North Carolina
- are employed in North Carolina, but not covered by unemployment insurance (e.g., the selfemployed, church and religious organization employees, summer camp employees, and other non-covered workers)

Employment-related information that cannot be determined includes:

- entry-on-duty date of employment for the individual
- employment type (i.e., permanent, temporary, part- or full-time)
- whether the person worked at all during the quarter
- number of hours worked for the quarter
- person's occupation.

CFS CURRENT OPERATION (2019)

During the 2019 calendar year, LEAD worked closely with GDAC to undertake further enhancements to improve contributors' experience in data processing and submission process as well as system reporting in a visual analytic platform. In a continued effort to work toward optimal data quality and enhanced

analysis over the coming year, LEAD and GDAC continue to collaborate on the effort regarding enterprise identity resolution, which will increase analytical accuracy and provide better program performance information.

While most of the enhancements in CFS are operational, the Department of Commerce sought additional resources to carry out several initiatives to further improve the quality of CFS data matching capabilities and facilitate the delivery of information on the effectiveness of education and workforce programs. To acquire additional resources, the Department applied for and received second competitive grant with the U.S. Department of Labor's Employment and Training Administration through the Workforce Data Quality Initiative (WDQI) Round VII program. The time period for this WDQI grant is from July 2019 through June 2021.

The grant is planned to be used to fulfil several objectives: expanding information contained in the CFS; improving the quality of workforce and education data; expanding the CFS capacity to match workforce and education data; utilizing CFS to carry out analysis of workforce and education programs; producing and disseminating workforce and education performance information and outcomes; enhancing user informational portals to assist decision-making; and integrating longitudinal data with performance information.

As part of the WDQI project deliverables, last year LEAD increased focus on program evaluation and data stories to help CFS contributing agencies, state leadership, and general public to improve "data-driven decision-making" in North Carolina's workforce system. A series of data stories have been published on the <u>CFS website</u>; they focus on employment and wage outcomes for specific programs and cohorts of community college and university students, former offenders, individuals with disabilities, participants of apprenticeship programs. These analyses have been undertaken in collaboration with the CFS partners from the University of North Carolina System, the North Carolina Community College System, Department of Public Safety, and Division of Vocational Rehabilitation Services. While LEAD has provided the analytical capacity, the partner agencies have developed a deep understanding of their programs and populations served. Outcomes from this effort were shared internally and externally to promote the practice of evaluation using the data in CFS. Evaluation findings were disseminated through external reports and presentations.

Further research, analytical and reporting efforts have included support to Governor Cooper's Education Cabinet, continued collaboration with the NC SchoolWorks partners as well as the delivery of several presentations at state and national meetings. LEAD staff integrated information from the CFS in presentations related to education, workforce development, and the economy. These informative sessions included presentations at various stakeholder meetings: NCWorks Commission meetings; North Carolina Community College System Performance Partnership Summit; local community Workforce Development Boards meetings; State Reentry Council Collaborative meeting; and Council for Community and Economic Research conference.

In collaboration with the Division of Workforce Solutions (DWS), the Local Workforce Development Boards (WDB), and the NC Association of Workforce Development Boards, LEAD staff as worked with these

partners in developing a <u>Workforce Service Delivery Outcome Dashboard</u>. The dashboard utilizes data provided to the CFS by DWS to report the number of participants served and various services provided by each WDB. It includes outcome measures such as post-program participation employment and wage information.

PARTICIPATION SUMMARY ACROSS THE YEARS

Since its inception, the system has experienced tremendous growth. LEAD and the contributing agencies have made concerted efforts to incorporate information regarding additional programs and the individuals they serve, as well as to solicit the participation of other divisions or agencies. The analyses that are included in the following sections reflect data supplied by the contributing entities for services that were provided through June 2019.

CFS has expanded dramatically since its inception in the early 1990's. Figure 1 shows the total number of unique individuals included in the system between the 1994-1995 and 2018-2019 CFS program years¹, as well as the number of individuals served each year by publicly funded education and workforce training programs contained in CFS. The system currently includes information on over 9.7 million unique individuals.





The total number of unique individuals within the CFS was obtained by performing a total unique count of all validated Social Security Numbers (SSNs) contained in the system across all contributing agencies by CFS program year. Analyses of data indicate that the number of individuals who received services through

¹ Program year runs from July 1 through June 30.

one or more of the contributing entities ranged from the high of 2.3 million in CFS program year 2010-2011 to 1.5 million in the most recent 2018-2019 CFS program year.

The following entities provided information on individuals enrolled in education and training programs during the 2018-2019 program year.

- North Carolina Department of Public Safety
 - Division of Adult Correction (DAC)
- North Carolina Department of Public Instruction (DPI)
- North Carolina Department of Commerce
 - Division of Workforce Solutions (DWS)
- North Carolina Department of Health and Human Services
 - Division of Services for the Blind (DSB)
 - Division of Social Services (DSS)
 - **o** Division of Vocational Rehabilitation Services (DVRS)
 - Division of Mental Health, Developmental Disability, and Substance Abuse (DMH)
 - Division of Aging and Adult Services (DAAS)
- North Carolina Community College System (NCCCS)
- University of North Carolina (UNC)

In addition to the information supplied by the education, employment and training agencies, the Department of Commerce's Division of Employment Security provided a wealth of employment and wage information as well as information on Unemployment Insurance claims and benefit recipients to the CFS.

Analyses of agency's historical data in CFS provide an understanding of the scope of the system, as well as an overview of service provision by contributing agencies over time. Table 1 presents information regarding the number of individuals served by each of the contributing agencies by year as well as the number of individuals served across the contributing agencies. Counts of the number of individuals by agency were obtained by performing a unique count of individuals with SSNs submitted by each agency by program year. The agency totals across the ten-year time period are counts of unique individuals across multiple years. Individuals can receive services from a given agency across multiple program years. The unique count of individuals across all agencies within a given year are unique counts of individuals across agencies. Individuals may be served by more than one agency in a given year or across years.

Agency	CFS year									Individuals served per agency,	
	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2010-2019
NC Division of Aging and Adult Services							303	321	293	294	584
NC Division of Mental Health, Developmental Disability, and Substance Abuse							6,343	6,832	7,990	7,789	13,412
NC Division of Adult Correction	234,082	227,934	213,939	183,614	191,292	183,066	194,698	189,981	186,768	182,702	590,251
NC Department of Public Instruction	323,173	280,398	262,385	240,739	183,636	201,036	206,536	198,089	189,860	174,092	854,598
NC Division of Services for the Blind	3,441	3,479	3,580	3,737	3,656	3,213	3,249	3,164	2,856	2,982	10,072
NC Division of Social Services	235,745	268,309	309,359	345,543	291,271	18,386	23,884	49,032	12,031	14,477	860,921
NC Division of Vocational Rehabilitation Services	57,377	60,343	61,132	60,105	57,854	48,642	57,289	51,270	47,354	45,923	190,870
NC Division of Workforce Solutions	1,173,304	1,043,088	1,011,781	986,408	422,222	469,488	420,211	404,201	427,684	540 <i>,</i> 635	2,808,593
NC Community College System	777,446	779,848	749,649	739,673	691,121	652,635	612,491	591,859	567 <i>,</i> 560	553,703	2,921,230
University of North Carolina System	235,463	235,428	232,738	236,332	233,399	233,382	234,631	236,406	239,089	242,336	815,542
Individuals served per CFS year across all agencies	2,465,479	2,354,128	2,309,623	2,277,864	1,728,602	1,584,776	1,541,165	1,517,307	1,487,891	1,560,507	5,671,786

Source: Common Follow-up System, Labor & Economic Analysis Division, NC Department of Commerce 2020

Over the ten-year period spanning July 1, 2009 through June 30, 2019, over 5.6 million individuals received services through the contributing agencies. This includes 2.8 million individuals who received a variety of workforce services through the Division of Workforce Solutions and over 2.9 million who participated in education and training programs through the North Carolina Community College System. While DWS and NCCCS delivered services to large numbers of individuals, North Carolina's public school system provides the building blocks upon which other education, employment and training services rely. During the same period, more than 854,000 individuals were enrolled in public high school programs. UNC is the state's publicly supported university system and provided educational programs to over 815,000 individuals.

Several agencies provide services to very specific sub-populations. The Division of Social Services provided employment and supportive services to more than 860,000 Work First and Food Stamp Employment and Training Program participants over the ten-year time period, while the Department of Public Safety provided services to over 590,000 offenders in prison, on probation or parole. The Division of Vocational Rehabilitation Services provided rehabilitation services to over 190,000 individuals with physical and mental disabilities, and Division of Services for the Blind provided vocational rehabilitation services to more than 10,000 blind, visually impaired and multi-handicapped individuals.

It is important to keep in mind that some entities are authorized to provide services to large segments of the population (e.g., DWS and NCCCS), while others are authorized to provide services to very specific sub-populations based on stringent eligibility criteria including occupational goal, income, disability type, severity of disability, and educational requirements (e.g., DSS, DVR, DSB and UNC).

INTERRELATIONSHIPS AMONG AGENCIES IN THE PROVISION OF SERVICES

A significant feature of the CFS is its longitudinal structure, which fosters the examination of the interrelationships among entities in the overall provision of services and an understanding of the paths individuals follow while utilizing these services. Several initiatives at both the State and National level have called for the coordination, collaboration and integration of services to individuals across education, employment and training programs. These initiatives include the NCWorks Career Center System, Workforce Investment Act (WIA), Workforce Innovation and Opportunity Act (WIOA), as well as endeavors by the education, employment and training agencies themselves.

To provide an understanding of the interrelationships among entities in the provision of services, data were analyzed both within and across the last ten program years (July 1, 2009 through June 30, 2019). These analyses utilized data from each of the contributing agencies. These agencies vary in terms of their organizational structure. That is, some of the agencies encompass several divisions within a given agency, others encompass a single division within a given agency and others encompass the combined work of staff across multiple agencies and programs. The data provided by each of these agencies includes information regarding one to several programs and/or services.

Analyses focused on determining the unique number of individuals who received services through each agency, the unique number of individuals who received services across agencies and the number of individuals found in common among the agencies. Graphs with the results of the analysis are provided in Figure 2.

Figure 2. Total Unique Individuals Served by Each Agency and Number of Individuals Also Served by One or More of Other Agencies, CFS Program Years: 2009 – 2010 through 2018 – 2019

















RELATIONSHIP OF INDIVIDUALS SERVED TO THE NORTH CAROLINA ECONOMY

In addition to providing information regarding the number of participants served by each agency, CFS may also be utilized to provide an understanding of the relationship between participants of the state's education, employment and training programs and the overall economy.

Over the ten-year period from July 1, 2009 to June 30, 2019, more than 5.6 million unique individuals participated in educational, employment and training programs through the participating agencies. During the 2018-2019 program year, there were over 5.2 million unique individuals with wages reported to the Division of Employment Security. These individuals earned over \$225 billion in total wages. Analyses of the information supplied by the participating agencies to the CFS demonstrate that of the over 5.2 million wage earners, approximately three million (or 56%) participated in education, employment and training programs through one of participating agencies during the same period. These individuals earned \$96.7 billion in total wages or 43% of all wages paid in the 2018-2019 program year.

Figure 3. Ratio of Participants of North Carolina's Education, Employment and Training Programs (July 1, 2009 – June 30, 2019) to All Wage Earners and Wages Paid During the 2018-2019 Program Year



Further analyses by industry sector demonstrate that half or more of individuals employed in each of the state's major industry sectors (except for Nature Resources and Mining; with 44.8%) participated in programs and services provided by one of the participating agencies in the last ten years. In addition, more than 6 out of every 10 individuals employed in the following major industry sectors have been participants of the contributing agencies in the last ten years: Manufacturing; Retail Trade; Health Care; Leisure and Hospitality, Public Administration, and Other Services.

Figure 4. Ratio of Participants of North Carolina's Education, Employment and Training Programs (July 1, 2009 – June 30, 2019) to All Wage Earners and to All Wages Paid by Industry Sector During the 2018-2019 Program Year



Analyses of the wages paid in each industry revealed that at least 30% of the wages in all major industry sectors, were paid to individuals who had participated in programs and services through one of the contributing agencies in the last ten years. These results clearly indicate the connection between education, employment, and training programs and the state's economy as well as the continued need for coordination among education, workforce development and economic development efforts.

OPERATION SUMMARY

The Common Follow-up System is an effective mechanism for providing information regarding the agencies, programs, and participants that comprise North Carolina's education, employment and training system. The CFS is a valuable resource for understanding the educational and employment outcomes of individuals who participate in services as well as an understanding of the paths individuals follow while utilizing these services.

The scope of the CFS is extensive in terms of the number of entities and individuals processed as well as the breadth of program and service coverage. Analyses of data from the CFS indicate that over the tenyear period from July 1, 2009 to June 30, 2019, over 5.6 million individuals received services through the contributing agencies. During the same period, the North Carolina Community College System and the Division of Workforce Solutions each provided services to close to three million individuals. Further interpretation of the data presented in this report indicates that there is substantial collaboration among agencies in the overall provision of education, employment and training services. Over the tenyear period, over 1.1 million North Carolinians received both education and training services through the North Carolina Community College System and employment and training services through the Division of Workforce Solutions. In addition, these two agencies provided services to large percentages of individuals from each of the other participating agencies.

While these two agencies form the cornerstone of North Carolina's education, employment and training system, each of the participating entities plays a fundamental role in the overall mission of developing and promoting highly skilled workforce, improving the quality of life for North Carolinians, and preparing the state and its communities to compete in the global economy.

There is a significant relationship between the individuals receiving services through the state's education and workforce partners and the North Carolina economy. More than half of all wage earners in the state in the 2018-2019 program year received services through the participating agencies during the previous ten program years. In addition, these individuals earned 43% of all wages during the same program year. These findings help demonstrate the integral relationship that exists between the services provided by the state's education and workforce partners and the state's economy, and the continued need for coordination among education, workforce development and economic development efforts.