

BACKGROUND

Methodology for the Modernized the National Career Clusters[®] Framework

In the late 1990s, with the support of the U.S. Department of Education’s Office of Career, Technical, and Adult Education (OCTAE; then called the Office of Vocational and Adult Education), Advance CTE began the process of creating a new framework for Career Technical Education (CTE) to build consistency in program design and quality nationwide, centered around the knowledge, skills, and standards a learner would need to complete each career pathway. This work was led by states with industry partners and managed by Advance CTE. Advance CTE published this new framework, known as the [National Career Clusters Framework[®]](#) (the Framework), on behalf of states in 2002. The framework is used in the vast majority of states and territories and by national vendors providing curriculum tools and CTE instructional support.

Why modernize the Framework?

In the over two decades since the Framework was initially conceived, the world of work has changed dramatically. The rapid growth of new technologies, the rise of remote and hybrid workplaces, and the emergence of the gig economy have continued to increase the pace of these changes. Employees continue to change jobs over their lifetimes at a more rapid pace, requiring flexibility in what they know and how they can adapt to a career of their choosing¹.

Simultaneously, workplaces increasingly require transferable skillsets, and there is considerable overlap between the skill sets needed for a variety of different positions². Employers that once hired for specific positions and skills now require a growing skillset that is supplemented by digital skills, entrepreneurial and collaborative mindsets, and interdisciplinary backgrounds. Skills-based hiring has become more than a trend, with multiple states setting precedents with credential/degree-agnostic hiring of state employees³. And new and ever more rapidly emerging sectors such as electric vehicle and semiconductor manufacturing, artificial intelligence and data science, and the use of technology across all fields are increasing the existing skills gap⁴ as these sectors seek to find more talent than is available.

To respond to these changes, in 2022 Advance CTE launched a multi-year initiative to examine labor market research and gather input from industry and the CTE field to determine what changes to the Framework were needed. The new Framework is learner-centered and industry-driven and was established to better bridge education and work, empowering each learner to explore, decide on, and prepare for dynamic and evolving careers. It addresses many of the limitations of the previous Framework, including:

¹ <https://www.weforum.org/agenda/2023/05/workers-multiple-careers-jobs-skills/>

² https://www.researchgate.net/profile/Christof-Naegele/publication/307942989_Competence_and_the_Need_for_Transferable_Skills/links/5fbd3d5d458515b797695ba8/Competence-and-the-Need-for-Transferable-Skills.pdf

³ <https://www.nga.org/news/commentary/governors-innovate-to-spur-skills-based-hiring/>

⁴ <https://www.brookings.edu/articles/understanding-the-skills-gap-and-what-employers-can-do-about-it/>

- incorporating the entirety of the world of work;
- adding new sectors and incorporating them into the industry-based clusters and career oriented sub-clusters that best align with them;
- advancing how states and local agencies consider the interdisciplinary nature of the world of work and how these skills can be contextualized in and applied to all careers; and,
- improve CTE program connections and consistency across secondary, postsecondary, and workforce systems with multiple on and off ramps.

How is the Framework organized?

The modernized Framework consists of 14 industry-aligned Career Clusters and 72 Sub-Clusters which represent major career areas within a given field that have similar skills as defined by industry. These Clusters and Sub-Clusters serve as the primary organizing structures for CTE and career pathway programs and are intended to promote good careers – specifically careers that are “middle” or “high skill” and provide opportunities for family-sustaining wages. As can be seen at the graphic included at the end of this document, the Clusters are organized in six meta-groupings known as Cluster Groupings that to help young people see the Clusters that may correspond to their purpose for entering into a given career sector, and to help display the interrelatedness between Clusters.

An important new feature of the Framework is the inclusion of three Cross-Cutting clusters that both represent industry sectors but also include skills and careers that intersect with all other Clusters. Finally, all of the clusters are supported by 12 Career-Ready Practices to ensure that every program includes the skills that are essential to every career and life (see graphic below).

How does the Framework improve career preparation?

The Framework is the backbone of the CTE system around which state and local education agencies organize their career pathways systems (and particularly, secondary and postsecondary programs of study). The Framework not only serves the 11.4 million learners in CTE but also informs all career pathway preparation programs and initiatives in both the public and private sector to help:

- **learners** have access to more personalized paths to living-wage jobs and gain skills for a variety of careers.
 - **CTE educators** align, design, and deliver programs that are interdisciplinary in nature, include stronger career exploration and advising models, and enhance the connection between in- and out-of-classroom experiences, such as work-based learning.
 - **industries** and employers find workers with a lifelong learning worldview whose interests, skills, and work-based experiences align with their hiring needs.
 - **state CTE leaders** make informed decisions about the improvement of their systems and design programs and experiences that are more responsive to industry and provide resources/guidance to local leaders that reflect the needs of today’s workplace.
 - **local counselors and instructors** employ the Framework and its many tools to support career exploration and decision making to demonstrate the diversity of careers in the world of work, or the breadth of careers within a given Career Cluster.
- national organizations** that support workforce preparation to create new tools, resources, standards and supports.

State-Level Adoption and Implementation

The Framework is not designed as a one-size-fits-all model, and not all states will offer career pathways or programs of study exactly as organized in all 14 new Career Clusters. The Framework is flexible to meet every state’s need and is meant as a starting point for state and local agencies to explore their own labor market data and make adjustments. It can be used in conjunction with state and regional labor market information

to help explore new opportunities for programs that require significant technical skill but may not have historically been considered under the umbrella of CTE.

Advance CTE will work with its state partners through the implementation process to ensure the Framework serves as a powerful organizing tool to address states' learners and labor market needs.

Caring for Communities

Education

Early Childhood Development
Education Administration & Leadership
Learner Support & Community Engagement
Teaching, Training, & Facilitation

Health Care & Human Services

Behavioral & Mental Health
Biotechnology Research & Development
Community & Social Services
Health Data & Administration
Personal Care Services
Physical Health

Public Service & Safety

Emergency Response
Judicial Systems
Local, State, & Federal Services
Military & National Security
Public Safety

Building & Moving

Advanced Manufacturing

Engineering
Industrial Machinery
Production & Automation
Robotics
Safety & Quality Assurance

Construction

Architecture & Civil Engineering
Construction Planning & Development
Equipment Operation & Maintenance
Skilled Trades

Supply Chain & Transportation

Air & Space Transportation
Ground & Rail Transportation
Maintenance & Repair
Marine Transportation
Planning & Logistics
Purchasing & Warehousing

Cross-Cutting Clusters

Digital Technology**

Data Science & AI
IT Support & Services
Network Systems & Cybersecurity
Software Solutions
Unmanned Vehicle Technology
Web & Cloud

Management & Entrepreneurship**

Business Information Management
Entrepreneurship & Small Business
Leadership & Operations
Project Management
Regulation

Marketing & Sales**

Market Research, Analytics, & Ethics
Marketing & Advertising
Retail & Customer Experience
Strategic Sales

Creating & Experiencing

Arts, Entertainment, & Design

Design & Digital Arts
Fashion & Interiors
Fine Arts
Lighting & Sound Technology
Media Production & Broadcasting
Performing Arts

Hospitality, Events, & Tourism

Accommodations
Conferences & Events
Culinary & Food Services
Travel & Leisure

Cultivating Resources

Agriculture

Agribusiness
Agricultural Technology & Automation
Animal Systems
Food Science & Processing
Plant Systems
Water Systems

Energy & Natural Resources

Clean & Alternative Energy
Conservation & Land Management
Ecological Research & Development
Environmental Protection
Resource Extraction
Utilities

Investing in the Future

Financial Services

Accounting
Banking & Credit
Financial Strategy & Investments
Insurance
Real Estate

**Cross-Cutting Clusters

Denote careers that overlap in all industries, highlighting the versatile and interconnected nature of today's workforce. These careers can stand on their own or be contextualized in each Cluster and emphasize the need for adaptability in navigating the modern economy.

Notes:

Clusters are listed in alphabetical order. Clusters and Sub-Clusters represent the entire world of work (see definitions).

Programs of study are simply illustrative and will be determined by state and local frameworks.



Career Ready Practices

Lead as a contributing and professional employee

Communicate clearly, effectively, and with reason

Think critically to make sense of problems and persevere in solving them

Collaborate productively while using cultural and global competencies

Use digital skills and technologies to enhance productivity and make data-informed decisions

Remain resilient in a changing workplace and world of work

Manage time and space effectively

Demonstrate a creative and innovative mindset

Act as a good steward of organizational and personal finances and resources

Navigate an education and career path aligned to strengths, work style, interests, and goals

Consider the environmental and social impacts of decisions

Apply appropriate academic and technical skills