Career and Technical Education

Strengthening a Workforce Pipeline Through High School CTE Programs

Performance period 04/2024–12/2025

Career and Technical Education (CTE) programs focused on early childhood education offer high school students the opportunity to learn about child development and begin working toward certifications, credentials, or degrees that position them for employment or further education in the field. These programs represent one entry point into the early childhood workforce, and strengthening their connection to postsecondary and professional pathways is a strategy for building a more sustainable workforce pipeline.

Maine included **Career and Technical Education** in its Preschool Development Grant–Renewal (PDG-R) to address a barrier identified in the state's 2019 Needs Assessment: the lack of clearly articulated pathways into and through early childhood professions. With 23 of Maine's 27 CTE centers already offering ECE programming, the PDG-R investment was intended to supplement and strengthen this existing infrastructure—implementing an articulated ECE pathway from CTE to the statewide training system to two-year and four-year degree programs, rather than creating a new program. The grant proposed using renewal funds to support CTE students in obtaining a CDA or equivalent State of Maine credential, to develop or update articulation agreements with community colleges, and to expand the ECE curriculum to include special education and business management content.

This report presents **findings from outcome-focused assessment activities** conducted in fall 2025 as part of Maine's Preschool Development Grant–Renewal (PDG-R) program. Drawing on diverse data, the report examines the Early Childhood Education (ECE) in **Career and Technical Education (CTE)** initiative, with respect to the following PDG-R outcome areas:

- **Impact**, including curriculum enhancements and professional development that strengthened CTE course quality and content, credential recognition, credit alignment findings across programs, and students' connection to the broader ECE profession.
- **Communication and cross-sector coordination** through the Advisory Group and CTE instructor network, which provided a forum for sharing resources and elevating local issues to the systems level.
- **System building**, including efforts to sustain CTE as an entry point into the workforce and to identify systems-level work, such as credit consistency and credential recognition, that extends beyond what CTE alone can address.
- **Supports and access**, including considerations that shape instructors' participation in additional training and students' access to improved CTE courses.

Data sources for this report include review of available initiative documentation related to the Advisory Group; review of materials collected and curated on a shared drive by CTE teachers including a fall 2025 survey of CTE instructors; focus group with members of the Advisory Group; and feedback from the state initiative lead and project manager.

The CTE initiative began by surveying CTE instructors across the state to identify needs and priorities related to curriculum, credentials, and program alignment. Findings from this outreach informed the initiative's focus areas and guided early planning. To support implementation, a statewide Advisory Group was convened, including two subgroups: one focused on curriculum enhancements and the other on how credits are awarded and may align with certificate or credential completion. This structure provided a mechanism for translating identified needs into coordinated activities. The initiative also supported ongoing communication among ECE instructors to facilitate resource sharing and program improvement discussions.

A central focus of the initiative was curriculum enhancement in two areas: working with children with special needs and sustaining a child care business. The cross-agency team worked with the Office of Special Services to identify recommended materials, and programs received up to $2,500 for adaptive equipment and instructional resources. A consultant from Coastal Enterprises, Inc. (CEI) contributed time to draft a unit on establishing and maintaining a child care business; members of the sub-team reviewed the draft, though timing did not allow for piloting. MRTQ PDN highlighted an existing course on supporting adult learners in ECE and made it available to CTE instructors at no cost.

EARLY CHILDHOOD EDUCATION IN CAREER AND TECHNICAL EDUCATION (CTE) INITIATIVE FEATURES

23 of Maine's 27 CTE centers offer ECE programming; 30 teachers and 469 enrolled students in 2025

Connected to Strategic Plan Goal 1: Workforce Retention and Recruitment

Guided by a cross-agency internal planning team and statewide Advisory Group

$2,500 per program for instructional resources; CTE student registration for MAEYC Annual Conference

Curriculum enhancements and credential pathway development supported through contracted partners and MRTQ

The initiative adapted its credentialing approach over the grant period. The original plan included support for up to 20 CTE students to obtain either a CDA or an equivalent State of Maine credential, with MRTQ PDN covering costs and supporting students through the necessary coursework. The CDA pathway was revised based on its higher cost and operational difficulties in completing required observation visits on schedule. The initiative focused on the State of Maine credential side of this goal, with a focus on the Certified Early Childhood Assistant (CECA) and on developing a preschool credential aligned with Maine's credentialing system. This shift allowed the initiative to concentrate on program-level supports rather than subsidizing individual credential attainment. State leads reported that it also deepened relationships between CTE instructors, MRTQ, and other statewide workforce initiatives, positioning CTE more closely within Maine's broader workforce development system.

What was the impact of the Career and Technical Education (CTE) initiative?

Understanding the impact of PDG-R–supported initiatives requires assessing whether investments advanced their intended purposes. For the CTE initiative, impact is understood primarily at the

program and system levels—strengthening the infrastructure that supports CTE programs and connecting them more intentionally to Maine's broader early childhood workforce system.

State leads identified three general goals for the initiative:

- **Establish and maintain an Advisory Group** of critical partners to guide the work of the initiative.
- **Develop resources and support CTE teachers' professional development,** with an emphasis on working with children with special needs and business skills for operating a child care program.
- Examine the **alignment of credits and credentials** available to students in CTE programs.

The initiative made progress across all three areas. The **Advisory Group**, comprised of staff from the Department of Education, MRTQ PDN, and CTE instructors from across the state, met regularly and guided the work. The Group worked as a whole as well as in subgroups (curriculum enhancements and credits) to identify gaps, and to respond to feedback from the field that came through surveys or pilot testing/reviewing of materials. Findings related to the other two goals are detailed below.

Professional Development and Curriculum Resources

Through the initiative, CTE instructors gained access to the MRTQ PDN course on engaging with adult learners at no cost. Instructors were also recognized as MRTQ PDN trainers, allowing them to offer professional learning opportunities with hours recorded in the Maine Early Childhood Registry. For example, one instructor leveraged her MRTQ PDN trainer status, along with participation in an emergent literacy train-the-trainer program, to bring multiple professional learning opportunities back to her district and community.

In the focus group, CTE instructors reported that the **adaptive equipment and special needs materials addressed a gap in their programs, noting that students would not otherwise have had the opportunity to learn about available adaptive materials** or how to use them. The sub-team pursued additional resources to supplement the unit and/or offer other options. Child care business management will remain a focus of the CTE Advisory Team.

The initiative also advanced credential alignment. The CECA is now recognized as a Tier 3 credential, equivalent to the Child Development Associate (CDA).

> **This Tier 3 recognition connects CECA holders to Maine's Tiered Salary Supplement program, linking CTE students' credentialing pathway to a direct financial benefit upon entering the workforce.**

Credit Alignment Across Programs

The credentials subgroup surveyed CTE teachers and documented variation in how CTE coursework is documented in students' education records. The survey revealed differences across programs in the number of credits students received toward graduation requirements for CTE courses and in how those credits are weighted in grade point averages.

Table 1. CTE Credit Alignment Survey Findings

Finding	Detail
Programs offering postsecondary credit	90% of programs, through concurrent enrollment, dual enrollment, or articulation agreements
Range of credits available	3–7, varying by institution and agreement type
Variation in HS credit structures	Differences in credits toward graduation and GPA weighting across programs

State leads noted that these findings elevated what had been understood as local variation into a statewide systems concern, with implications for how students decide to enroll in CTE and how CTE coursework articulates into postsecondary pathways.

Students' Connection to the Profession

The initiative paid registration costs for CTE students to attend the Maine AEYC Annual Conference. In a focus group, CTE teachers described students' experience at the conference, noting that

> **"The other adults were connecting with them and inspiring them for the work that they were doing, being able to be there to participate."**

How did the CTE initiative strengthen communication and cross-sector coordination?

The CTE initiative linked an existing network of CTE teachers with staff from state agencies and MRTQ PDN through the Advisory Group. Although the Advisory Group and the cross-agency planning group were newly formed through the initiative, they intersected with an established network of CTE teachers who had already begun gathering information and identifying gaps and needs. In interviews, state leads described the Advisory Group as a forum for critical partners to come together not only to share resources but also to elevate local issues to the systems level. For example, variations in eligibility for general education credits exist across schools that could benefit from additional state guidance.

> **State leaders noted the "critical role" that Maine Roads to Quality plays as a thought partner and for its ability to adjust systems to better support CTE teachers and students.**

How has the Career and Technical Education (CTE) initiative contributed to building a strong statewide early childhood service system?

Early education CTE programs provide an entry point into the field for high school students interested in entering the early childhood workforce. This pathway is one of many that individuals take into the profession, and the initiative contributed to sustaining it through several interconnected supports: professional development for CTE teachers offered through MRTQ PDN; participation in the statewide

early childhood professional conference that connected students with the broader field; and resources and adaptive equipment to prepare students for working with children with special needs.

The initiative also surfaced work that extends beyond what CTE alone can address. Building consistency in how CTE coursework translates into high school credit, how these credits build toward certificates and credentials, and how credentials articulate into college credit will require continued collaboration with institutions of higher education and providers. Although the CECA is now recognized as a Tier 3 credential by the state, Head Start programs have yet to provide this recognition, creating a disconnect across the system.

In what ways did the CTE initiative support access and effective participation for teachers and students?

This initiative primarily supported CTE programs and teachers, but access issues were noted for both teachers and students.

There were a few barriers to CTE instructors' participation in the initiative's work. Access to all resources and benefits, including funds for materials, was available to all programs. Advisory Group participants received stipends for their time, and most of the work was completed virtually, minimizing cost and travel burden. Some teachers reported constraints on participation—one noted in the focus group that she has limited paid professional development time in her district, which requires her to choose among potentially useful offerings. Teachers' designation as MRTQ PDN trainers also supported their engagement in the initiative, as it allowed them to offer courses that counted toward students' hours in the Registry.

Teachers frequently mentioned challenges their students faced in accessing CTE programs. Not all students across the state have local access to a CTE center, and transportation to attend classes or complete required field experience hours can be a barrier. In addition, the credit alignment survey revealed that students may receive different amounts or types of credit for participation in CTE programs. In systems where CTE credits are not equally weighted in grade point averages or compete with enrollment in advanced courses, students may be discouraged from enrolling. Finally, CTE teachers and state leads noted that school guidance counselors have not been heavily engaged in the CTE work and may be less informed about the programs' benefits.

Sustainability

The state lead reported that both the cross-agency planning group and the full Advisory Group favored continuing their meetings. Going forward, meetings will shift to fully virtual, and the initiative will no longer be able to offer stipends for participants' time. Teachers in the focus group noted that their twice-annual gatherings would continue as before, with the addition of state agency staff and other partners who would likely remain in attendance.

Many of the state agencies and partnering organizations on the Advisory Group, as well as many of the CTE teachers engaged in the initiative, also participated in a statewide Pathways Summit in August 2025, planned as an annual event. Participants continued to convene through ECE Pathways Community Conversations (December 2025, February 2026, and planned for April and June 2026).

These continued convenings indicate that the relationships and infrastructure developed through the initiative have a basis for continuation beyond the grant period.

What were the lessons learned from the CTE initiative?

- **Leveraging existing networks accelerates progress.** The initiative successfully brought CTE teachers—who had already established a practice of meeting regularly and sharing resources—together with staff from state agencies and other statewide ECE partners. The network of CTE teachers had been collecting information and developing a means to share resources across programs, providing important infrastructure for the initiative to build on.
- **Individual supports can compound across initiatives.** The CTE initiative provided several specific supports that contributed to a broad range of outcomes. For example, one CTE instructor leveraged her approval as an MRTQ PDN trainer to offer learning opportunities to her district and community and was further supported by having participated in an emergent literacy train-the-trainer program and a regulated classroom training that she could bring back to her school and community.
- **MRTQ is a critical partner in supporting the ECE workforce.** Maine Roads to Quality Professional Development Network plays a central role in the ECE workforce system—maintaining the state registry, hosting professional development courses, managing multiple credentials, and tracking data on early educators. The initiative demonstrated that MRTQ PDN can play a pivotal role in addressing ongoing workforce development challenges, including adjusting systems to better support CTE teachers and students.

Summary

High school CTE programs for students interested in early childhood education provide a pathway into the workforce, offering foundational knowledge and experience that can lead to certificates, credentials, or further education. Through the PDG-R, the CTE initiative strengthened this pathway by building a statewide network of CTE instructors connected to state agencies and MRTQ, enhancing curriculum in working with children with special needs and child care business management, and providing programs with resources and materials to improve students' preparation. CTE instructors gained access to professional development and MRTQ trainer designation, and the CECA credential was recognized as a Tier 3 credential equivalent to the CDA.

The initiative also identified systems-level work that remains to be done—including building consistency in how CTE coursework translates into high school and college credit, engaging school guidance counselors to promote CTE pathways, and securing Head Start recognition of the CECA credential. The relationships and infrastructure developed through the initiative, including the Advisory Group, the CTE instructor network, and ongoing participation in statewide Pathways Community Conversations, provide a foundation for continuing this work beyond the grant period.