



REFLECTIONS ON ACCELERATING CTE

Final Evaluation Report

AT A GLANCE

This report summarizes the Accelerating CTE project, providing details on student outcomes, colleges' lessons learned, and recommendations for further inquiry to improve student success and meet the workforce needs of our economy.

AUTHOR

Tara Smith

Senior Program Manager

JFF

WITH ASSISTANCE FROM

Rachel Pleasants McDonnell

Associate Director, JFF

Jessica Togli

Program Manager, JFF

Barbara Endel

Senior Director, JFF

FROM THE JFF TEAM

For many individuals from underserved backgrounds, educational pathways toward upward mobility are too often not accessible or even available. Students of color, those from low-income families, and first-generation college students continue to face barriers on the way to completing credentials. Therefore, it is more important than ever to develop high-quality postsecondary CTE programs that prepare learners for high-skill, high-wage, and high-demand careers needed in the new economy. Advancing innovative models capable of driving higher persistence, completion, and credential attainment rates was our goal, in partnership with five progressive community colleges. This study presents a set of promising findings and models for CTE programs across the country to consider and build upon.

Our team at JFF wishes to thank the talented staff members and students at the participating colleges. We also want to acknowledge the amazing team at ECMC Foundation for their support and for their belief that advancing effective postsecondary CTE pathways as a means of fostering economic mobility for all students is one of the nation's most important imperatives. This investment and study add more evidence that that goal is possible.



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Introduction

The Accelerating CTE project began as an extension of JFF's Accelerating Opportunity (AO), a seven-year initiative to improve outcomes for adult education students in college. Building on the lessons learned and strong evidence realized in AO, the ECMC Foundation in 2016 invested in a three-year initiative where JFF partnered with five community colleges to extend student success strategies beyond the original adult education system to career and technical education (CTE) classrooms, where many students who are underprepared for college-level coursework struggle to succeed.

This report provides a summary of the Accelerating CTE demonstration project and details student outcomes and college lessons learned.

The primary research question was this: Is participation in an integrated Accelerating CTE program associated with improved persistence, completion, and credentialing rates compared to baseline CTE program outcomes? The evaluation found that, overall, colleges participating in Accelerating CTE were able to improve student persistence and completion in CTE career pathway programs.

During the evaluation period, which ran from the summer of 2015 until the fall of 2018, Accelerating CTE served a total of 1,228 students across all pathways and colleges.¹ During that time frame, 72 percent of the participating students earned one credential while 14 percent earned two or more. In comparison, the colleges served 757 students during the baseline period² and 69 percent of those students earned one credential while less than 2 percent earned two or more credentials.



About Accelerating Opportunity

Accelerating Opportunity (AO) was a multi-year community college reform initiative developed and managed by JFF. The initiative focused on policy, program, and systems change that enables low-skilled adults to successfully advance from adult basic education to technical pathways in high-demand fields.

Through participation in AO, more than 85 community colleges in 7 states built pathways that accelerated student attainment of high-demand credentials by integrating basic skills instruction and technical education.

JFF provided the participating states with technical assistance and coaching that was tailored to their implementation plans. This support included guidance on pathway implementation, financing, and policy alignment.

The AO Evaluation, led by the Urban Institute, found that, overall, AO helped participants with low academic skills earn more credentials from community college programs than similar non-AO students. AO students also often received more credentials while taking fewer credits than comparison students.

Background on Accelerating CTE

Through Accelerating CTE, JFF worked with colleges to increase the number of underprepared adult learners who are able to earn CTE credentials that have strong value in the labor market by extending the AO integrated pathways approach to serve a broader population of underprepared students, and by enhancing the approach with promising strategies for increasing persistence in postsecondary pathways. Too many CTE students fail to complete training because they have low academic skills and are underprepared for college-level coursework.³ Many also face challenges because they have limited access to advising and support services.⁴ The Accelerating CTE model incorporates the following four evidence-based elements to address those challenges and improve student success:

- 1. Team teaching:** Course content is co-delivered by a CTE teacher and a basic skills instructor. This instructional model accelerates and enhances the learning experience by integrating basic skills with technical instruction and provides targeted academic support for struggling students.
- 2. Supplemental instruction:** Additional contextualized basic skills courses are included to help students focus on nontechnical areas, including academics and job readiness.
- 3. Comprehensive student support services:** Students have access to academic and nonacademic supports, such as career guidance, case management, and success coaching.
- 4. Career pathways:** The model also includes stackable credentials that are aligned to labor market needs and help qualify students for jobs that pay family-supporting wages.



Key Evaluation Findings

- Compared with students enrolled in CTE programs during the baseline period, students in Accelerating CTE programs during the evaluation period had higher rates of initial credential attainment (3 percentage points above the baseline rate) and additional credential attainment (12 percentage points higher than the baseline rate).
- Applied technology pathways realized the greatest increase in credential attainment, with an 18 percentage point improvement in the number of students earning one credential and a 20 percentage point increase in the number of students earning two credentials or more.
- The Accelerating CTE model had high support among college personnel, with 81 percent reporting that it leads to improved student success
- Students in Accelerating CTE programs expressed a good deal of satisfaction with their college experience, with the percentage of students saying they were highly satisfied ranging from 70 to 94 percent each semester.



The Accelerating CTE approach differs from traditional CTE in several key ways, as shown in the table below.

Accelerating CTE is Different

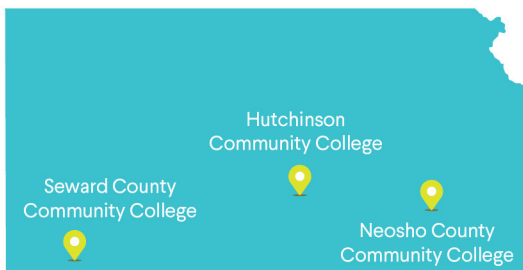
TRADITIONAL CTE	ACCELERATING CTE
CTE coursework is disconnected from developmental and basic skills instruction; developmental education is not always required for CTE courses.	CTE coursework is integrated with academic instruction; students receive team-taught instruction in CTE courses, with deeper learning and engagement.
Developmental and basic skills coursework is offered without context or connection to students' career goals.	Developmental and basic skills content is contextualized to CTE pathways, with students learning what they are most interested in.
Students exit after the first stage of the career pathway rather than continuing on a pathway to credentials with higher labor market value.	Students receive targeted support services and instruction that includes college readiness content to help them continue along a pathway to credentials with higher labor market value.
Students have minimal access to support services, such as career guidance and college navigation assistance.	From the day they enter the program until the day they complete their credential, students receive a comprehensive set of supports, including job readiness coaching and career guidance.

Accelerating CTE Colleges

Both Kansas and Kentucky were active in AO, exhibiting strong leadership commitment, willingness to innovate, and supportive policy environments. In Kansas, AO increased the probability of adult education students earning any credential by 12.3 percentage points for students recruited from CTE programs. In Kentucky, AO increased the likelihood of credential attainment by 43.5 percentage points.⁵ Based on that track record of success, schools in both of those states were invited to join the demonstration

project set up to extend the AO approach to all learners enrolled in college-level CTE programs who were not yet college-ready. Two community colleges in each state were initially selected: Hutchinson Community College and Neosho County Community College in Kansas, and Southeast Kentucky Community & Technical College and West Kentucky Community & Technical College in Kentucky. Seward County Community College in Kansas joined the initiative in 2018 as a learning college; it is not included in this analysis.

The participating colleges primarily serve rural regions in their respective states. These maps show their locations:



Accelerating CTE Pathways

Within the Accelerating CTE model framework, each of the participating colleges developed and implemented programs that were in high demand locally and unique to their own college policies, structures, and student bodies.

The colleges were asked to implement Accelerating CTE in at least two career pathways; all four of them included a health care option. Each college also offered at least one applied technology pathway—welding at the Kansas schools and electrical technology in Kentucky. Across the four colleges, the Accelerating CTE model was implemented in 11 pathways as shown in the table below.⁶

Accelerating CTE Pathways in Kansas and Kentucky

COLLEGE	ACCELERATING CTE PATHWAYS
Hutchinson Community College	<ol style="list-style-type: none"> 1. Health care (geriatric aide to licensed practical nurse) 2. HVAC 3. Welding
Neosho County Community College	<ol style="list-style-type: none"> 1. Health care (certified nurse aide to allied health and nursing) 2. Welding
Southeast Kentucky Community & Technical College	<ol style="list-style-type: none"> 1. Electrical technology 2. Medical assisting (phlebotomy, insurance billing and coding, medical office administrative assistant)
West Kentucky Community & Technical College	<ol style="list-style-type: none"> 1. Computerized manufacturing and machining 2. Electrical technology 3. Industrial maintenance technology 4. Health care (Medicaid nurse aide, allied health, nursing)

The next section will present summary evaluation findings across the four primary colleges; individual college evaluation summaries are provided as appendices to this report.

The Accelerating CTE Evaluation

The purpose of the evaluation was to document how colleges implemented the Accelerating CTE model and note the outcomes they achieved to determine if participation in an Accelerating CTE program was associated with improved student success. The evaluation was based on the following six key research questions:

1. Is participation in an Accelerating CTE program associated with improved persistence, completion, and credentialing rates compared to baseline CTE program outcomes?
2. How does the profile of students in the Accelerating CTE program compare with that of students in the baseline CTE program?
3. What elements of the Accelerating CTE model do college faculty and staff members identify as contributing to or inhibiting student success?
4. What elements of the Accelerating CTE model do participating students identify as contributing to or inhibiting their success?
5. What staffing models were used, and which are associated with student success?
6. What elements of the Accelerating CTE model were most challenging to implement and sustain, and which were the least challenging to implement and sustain?



The evaluation drew on a range of sources for each college, including surveys of students, administrators, faculty, and staff members; focus groups and interviews with college personnel; aggregate student records at the program level; and college documents and other materials, including reports prepared for this project. Student surveys were conducted in each of the four semesters between the fall of 2016 and spring of 2018, while college personnel were surveyed in the fall of 2017 and fall of 2018.

For the comparative analysis, each college established a baseline period that was prior to the implementation of any Accelerating CTE model elements in the chosen career pathways. Colleges provided aggregate student persistence and outcome data for each career pathway in the baseline period and in the Accelerating CTE program period. Researchers then calculated differences in completion and credential attainment between the two periods. Because the evaluation is based on a simple comparison of aggregate data, findings are suggestive but should not be considered a confirmation of impact.



Summary Evaluation Findings

STUDENT PARTICIPATION AND COMPLETION

The first research question seeks to compare outcomes for Accelerating CTE students and students enrolled in CTE programs at the colleges during the baseline period.

During the evaluation period, which ran from the summer of 2015 until the fall of 2018, Accelerating CTE served a total of 1,228 students across all pathways and colleges.⁷ Overall, 72 percent of those 1,228 students earned one credential while 14 percent earned two or more credentials. In comparison, the colleges served 757 students during the baseline period and 69 percent of those students earned one credential while less than 2 percent earned two or more credentials.

A total of 793 students took part in health care pathways programs during the evaluation period and 435 participated in applied technology programs.

Of the students enrolled in health care pathways, 81 percent earned one credential and 5 percent earned two or more credentials. At the end of the evaluation period, 46 of the health care students (6 percent of the original 793) were still enrolled in an associate degree program in nursing or allied health. In comparison, during the baseline period, 571 students participated in health care pathways programs and 79 percent of them earned one credential while fewer than 1 percent earned two or more credentials.

In the applied technologies Accelerating CTE pathways, 57 percent of the 435 students earned one credential and

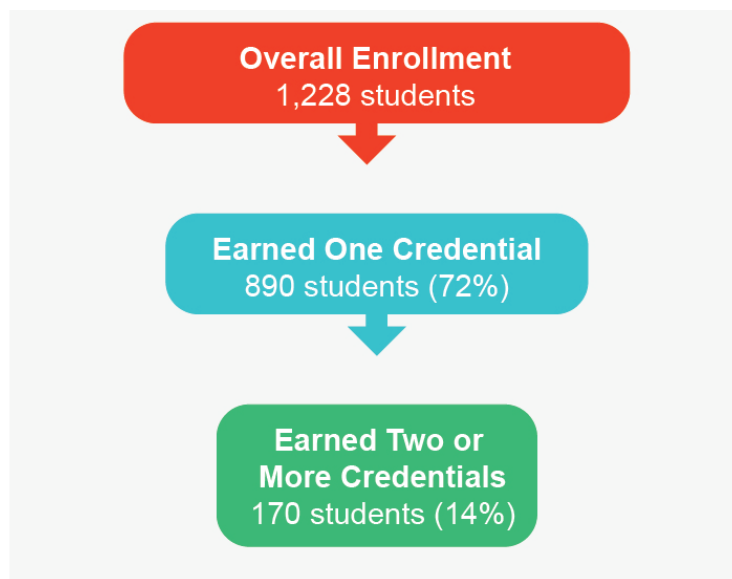


29 percent earned two or more. In comparison, 186 CTE students were in applied technologies programs during the baseline period and 39 percent of them earned one credential while 9 percent earned two or more.

This evidence suggests that the Accelerating CTE model is associated with higher completion, persistence, and credentialing rates when participating students are compared to students in the baseline period. Overall, Accelerating CTE students outperformed baseline students by 3 percentage points for first credential attainment and by 12 percentage points for additional credentials attained.

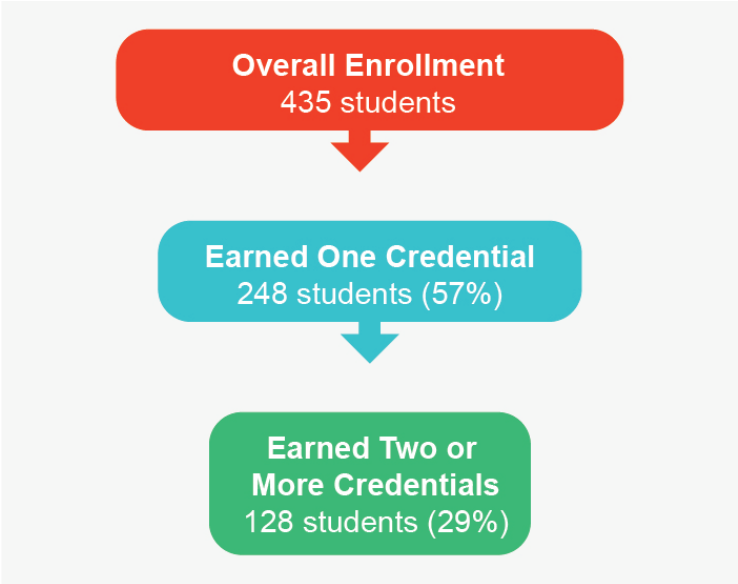
That finding on stackable credential attainment holds for both of the pathways reviewed. Students in applied technology pathways realized the greatest increase in credential attainment during the program period—an 18 percentage point increase for students earning one credential and a 20 percentage point increase for those earning two or more. Students in health care pathways also realized an increase in credential attainment: a 2 percentage point increase in the number of students earning any credential and an increase of more than 4 percentage points for those earning two or more credentials. As Accelerating CTE students complete health care pathway programs in the semesters ahead, those numbers are expected to rise.

Accelerating CTE Enrollment and Credential Attainment Overall, 2015-18

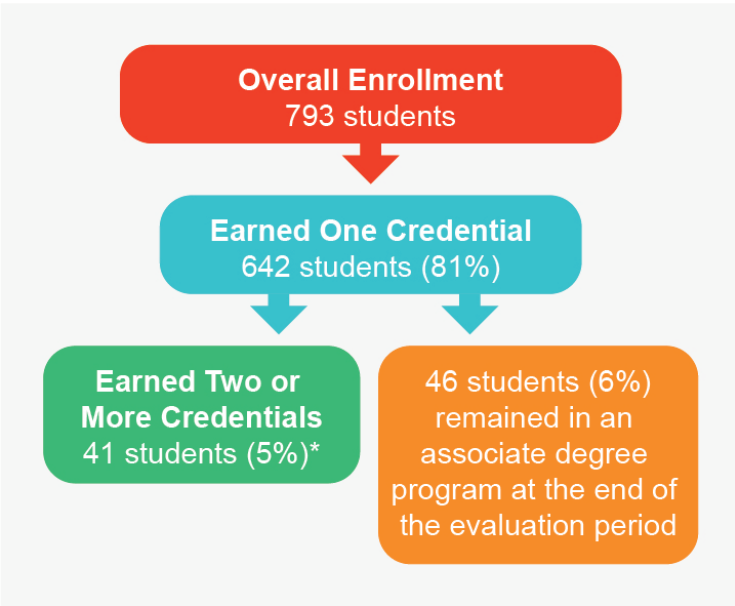


Source: JFF analysis of college data

Accelerating CTE Applied Technologies Pathways, 2015-18



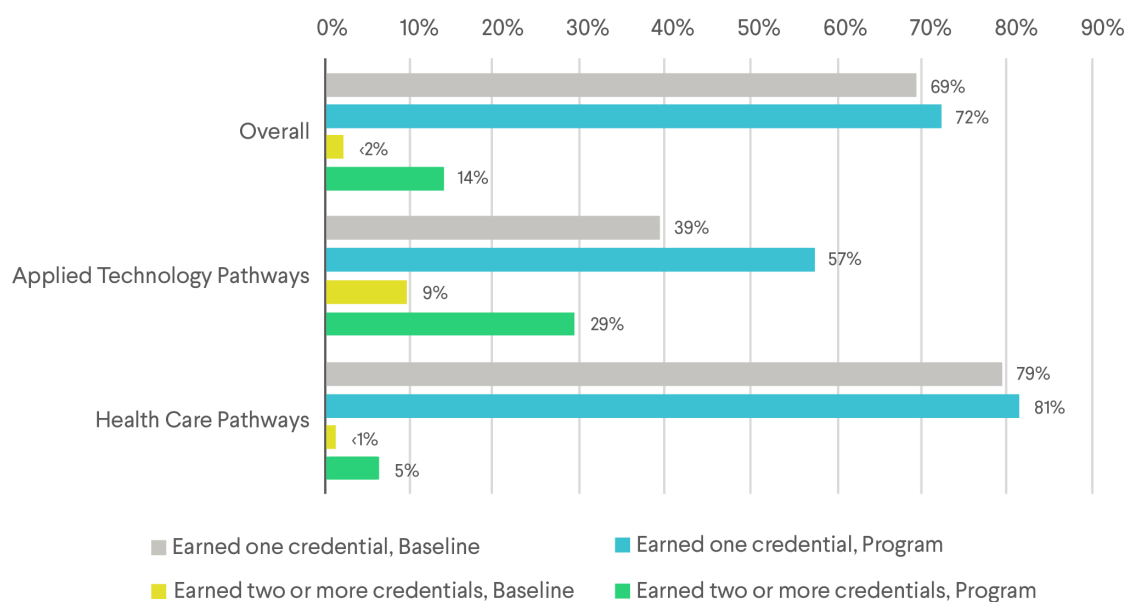
Accelerating CTE Health Care Pathways, 2015-18



*Note: This number does not include one additional student who began in the healthcare pathway and went on to earn an associate degree in business management.

Source: JFF analysis of college data

Credential Attainment in the Baseline and Program Periods



Source: JFF analysis of college data

STUDENT PROFILE

The student profile typically varied from semester to semester, but within each college the student profiles in the baseline and program periods were similar, on average. Based on that finding, it does not appear that differing student characteristics were a significant factor in improved student success during the Accelerating CTE program period.

ACCELERATING CTE MODEL ELEMENTS

Instructors and students consistently identified three of the four elements of the Accelerating CTE model as factors that played an important role in student

success: team teaching, supplemental instruction, and comprehensive student supports—though the relative ranking of those elements often varied by college.⁸ Team teaching and supplemental instruction were most often cited as the most important factors for student success, while comprehensive support services were widely acknowledged as a critical piece, particularly for the nontraditional students enrolled in most of the participating programs.

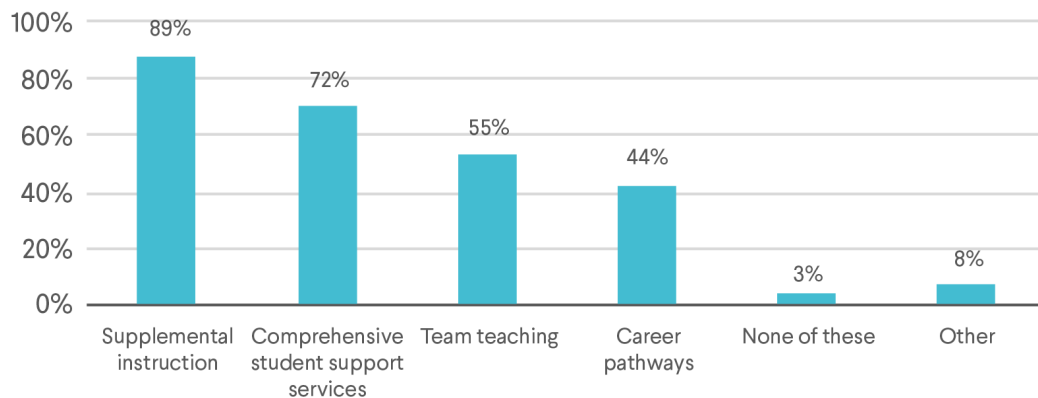
For students, most of whom reported that they had enrolled in a program in order to develop skills that would enable them to get better jobs, Accelerating CTE

appears to have helped more of them reach their goals. In surveys, students reported that they benefited from team teaching and supplemental instruction, with a significant proportion indicating that expanding those supports to other courses would have been helpful.

Instructors and other staff members said that Accelerating CTE gave them an opportunity to get more exposure to student support and acceleration models aligned with student success. College officials report that there is increased interest from faculty in programs across their institutions for team teaching and supplemental instruction and that, within academic transfer programs, more faculty and staff members than ever before are recognizing the value of student support services.

College personnel who responded to surveys about their experience with Accelerating CTE in 2017 and 2018 were strongly supportive of the model. Of 64 respondents representing all four colleges, 81 percent reported that the Accelerating CTE model leads to improved student success. The remaining respondents reported that the model contributes somewhat to student success. As shown in the chart below, supplemental instruction was the element of the Accelerating CTE model that was identified most often as contributing to student success, chosen by 89 percent of the respondents. Comprehensive student support services were second (chosen by 72 percent of the respondents), followed by team teaching (55 percent). Other factors that college personnel identified as important included cohort-based scheduling and the relationships that students build with success coaches.

Which Elements of the Accelerating CTE Model Contribute to Student Success?



Source: JFF analysis of 2017 and 2018 college personnel survey response data.

Supplemental instruction was structured differently at each college. Supplemental instruction is not tutoring; its purpose is to provide students with an opportunity to engage in contextualized, foundational learning to support CTE course completion. Some colleges scheduled supplemental instruction sessions immediately before or after CTE classes, while others scheduled it at a separate time or offered it as small group or one-on-one sessions. In most cases, supplemental instruction involved a mix of basic skills and course-specific content. Some colleges also incorporated job readiness skills, offering sessions on résumé development, mock interviewing and the like. At some colleges, students who tested below college-ready standards were required to participate while participation was optional for other students. Colleges identified student engagement and scheduling as the most challenging aspects of implementing and sustaining supplemental instruction.

When asked about the impact of supplemental instruction for students, college personnel offered multiple examples.

- *“The students who attend and participate seem to do better in class than even they expected.”*

- *“Students are given a different, less stressful environment to engage with course materials.”*
- *“Supplemental instruction is the best time for students to work on specific issues they are having with the material.”*
- *“[We see] improvement in test scores and graded assignments when students participate in supplemental instruction.”*



Comprehensive student support services also varied from college to college. The most commonly available support services included financial aid, success coaching, first-year experience courses, intrusive advising,⁹ employment services, and health and mental health services.

When asked which services were most critical to helping students succeed, college personnel agreed that it was the combination of services that made the difference, offering responses such as these:

- *“I believe that students need access to a variety of individualized services in order to be successful.”*
- *“[The services] are all integrated to provide support together.”*

College personnel also agreed that it was the individual relationships that mattered. One survey respondent described the importance of individual relationships this way:

- *“A student having the understanding that someone at the college cares about him/her is invaluable, whether that person is an instructor, advisor/coach, or program assistant. The entire team of individuals involved is critical to seeing a student succeed. The student knowing that the team is on their side is paramount.”*



When asked which support services their college should expand or sustain to support student success, college personnel most commonly identified food assistance, housing assistance, first year experiences, and success coaching.

ACCELERATING CTE STAFFING MODELS

Each college staffed the Accelerating CTE program based on its own structures and the availability of employees.

Team teachers and supplemental instructors were often adult basic education or developmental education instructors, but in some cases colleges

used trained student success coaches (many of whom were former instructors), professional tutors, or advisors in those roles. None of the colleges used student class leaders or student tutors in its Accelerating CTE program. The backgrounds of the support teachers often determined the type of team teaching approach implemented at the college and the role each instructor played in the classroom.¹⁰

The primary team teaching approaches implemented at each college are shown in the chart below. They are based on descriptions provided by instructors and other staff members.

Accelerating CTE Team Teaching Approaches

COLLEGE	TEAM TEACHING APPROACH
Hutchinson Community College	A mix of complementary-supportive teaching and monitor teaching . In the complementary-supportive approach, one instructor is responsible for teaching the content to the students and the other takes charge of leading follow-up activities on related topics or on study skills. In the monitor teaching model, one instructor assumes the responsibility for instructing the entire class and the other circulates throughout the room, watching and monitoring students and assessing their behavior and level of understanding.
Neosho County Community College	Complementary-supportive teaching . In this approach, one instructor is responsible for teaching the content to the students and the other takes charge of leading follow-up activities on related topics or on study skills.
Southeast Kentucky Community & Technical College	Institutionalized partnership teaching . This model is similar to the monitor teaching setup, with an adult education instructor present in the CTE classroom 50 to 100 percent of the time to help students interpret content and reinforce key points.
West Kentucky Community & Technical College	Embedded tutor teaching . In this approach, which is also similar to the monitor teaching setup, a success coach who attends at least one class per week may lead mini-lessons to reinforce textbook comprehension or circulate among students to offer clarification and support.

College personnel reported that team teaching had at least some impact on student success. As one CTE instructor remarked, *“I have multiple sections with similar students. The sections with the team teacher are more successful. I am able to give more opportunities to practice skills, and with both of us in the room more instant feedback is available to students.”*

Another noted, *“The support teacher is great about answering questions, reviewing techniques, [helping with] study skills development, [and offering] in-depth explanations and encouragement for retention and success.”*

One support teacher described her role this way: *“I become a voice for the quiet students. I can ask the questions they are afraid to ask.”*

Staffing was often identified as one of the challenges in implementing the Accelerating CTE model. Colleges noted that it was not always easy to find CTE instructors and support teachers who matched up well. They also said it could be difficult to strike the right balance between teaching roles. Other staffing obstacles included scheduling challenges (for example, CTE instructors and support teachers may have had difficulty finding time to collaborate) and the need to find an employee who had the flexibility to manage the program while juggling other responsibilities.





Conclusions and Further Inquiry

The Accelerating CTE project has demonstrated that elements of AO, including team teaching, supplemental instruction, and comprehensive student support services, can help underprepared CTE students succeed in college-level coursework. The JFF team offers the following conclusions and recommendations for further inquiry as we all work to improve student success and meet the workforce needs of our economy.

Conclusions:

- Across each of the colleges, participation in an Accelerating CTE program was associated with increased persistence, course completion, and attainment of credentials compared to student performance during the baseline period.
- The integration of basic skills support within CTE classes and the contextualization of basic skills in supplemental classes helped students succeed in courses that they would not have traditionally been expected to pass.

- Part of the success also appears to be associated with a growing recognition by colleges that all types of students—whether they are traditional or nontraditional, enrolled in academic transfer or CTE programs, “college-ready” or not—benefit from a wide range of comprehensive support services. At the Accelerating CTE colleges, support services included a broad mix of first-year experience courses; intrusive advising; cohort-based programming; housing, transportation, and child care assistance; job readiness training; health and mental health services; and more.
- While colleges embraced most elements of the Accelerating CTE model, they were challenged to implement career pathways with stackable credentials beyond the first two credentials in the pathway for more students as envisioned in the original project design. However, there is strong evidence to suggest that the AO CTE model is more effective than traditionally delivered programs in structuring student credential attainment beyond the first credential. During the evaluation period, on average, 14 percent of the AO CTE students earned two or more credentials, whereas 2 percent of CTE students earned multiple credentials during the baseline period.
- While the share of students pursuing and earning subsequent credentials increased with Accelerating CTE, overall rates were still relatively low because of the limited need for additional credentials in rural economies. College officials revealed that the goal of many students they serve is to obtain skills needed for employment in one of the region’s key industries and that few of those students intend to pursue subsequent credentials in the near term. Colleges recognize the value of helping students fulfill their goals and provide information about stackable opportunities if students become interested in, or realize the need for, additional training in the future.
- It is important to note that the leaders of each college played a big role in the success of the Accelerating CTE initiative by embracing the opportunity to test new approaches for supporting underprepared students in CTE programs. The impact of their leadership, the work they undertook to build faculty buy-in, and their commitment to student success cannot be understated.

For Further Inquiry:

- **Longitudinal Impact Study.** One of the challenges in evaluating career pathways programs is the limited time span of most research projects. Because career pathways programs for adults are designed to allow students to start and stop career training at multiple points after securing credentials that are in demand in their local labor markets, a significant share of participants may earn one credential and then wait semesters or even years before choosing to return to college for additional training in a stackable program. For the students we followed in the Accelerating CTE project, particularly the ones who graduated more recently, it could be several years before many of them reach a point in their careers where additional training is required. The findings reported here are promising, but they may not yet tell the full story of the impact of these programs. A future study should look at supporting colleges to do a rigorous longitudinal analysis, including a carefully matched comparison group, to understand the impact of the Accelerating CTE model.
- **Equity.** There is a great opportunity to leverage these results and the many other promising findings from

across multiple pathway initiatives, many of which have been supported by ECMC Foundation, to advance stronger equity agendas at colleges and within CTE programs. In order to achieve more equitable economic advancement, open access community colleges must ensure that institutional transformation benefits all students—including those who enter via adult education, CTE, workforce training, and noncredit programs. Therefore, we support continued analyses of CTE pathways and models that will explicitly analyze achievement and opportunity gaps. While this evaluation looked at aggregate data, future analyses could disaggregate student-level data by race and ethnicity, gender, age, and income to examine where there are equity gaps in CTE pathways, including gaps in enrollment, retention, completion, and job placement rates.

- **Restructuring CTE Data Analysis.** The data to truly understand the sequences and pathways that cohorts of CTE students take at the program level is simply not available. For example, say 25 students enrolled in the same one-year welding program. A school's faculty and administrators might want to know what happened to those students after they completed

the program, but current data systems would not be capable of providing that type of information. Future research should support the development of program-level analyses that reveal, for example, how students move through pathways and whether students actually stack credentials in the pathway or related career lattices. In addition, professional development for college leaders and institutional researchers is needed to leverage those types of analyses for program improvement.

- **Connection to the Labor Market.** Following students into and through the labor market was not part of the scope of this evaluation. However, to truly understand the impact of Accelerating CTE on student career trajectories, that is one of most important analyses we could add. Current administrative data systems simply do not have the occupation-level data required for analysis. Future research needs to include more direct engagement with employers to gather the employment data needed to determine the impact of programs such as Accelerating CTE in meeting labor market demand.

- **Integrate ROI and Build Strategic Finance Capacity.** Future analysis of integrated CTE programs should also explore the costs and returns on investment associated with the model, including the return to colleges (in terms of tuition or enrollments), to the students, and, potentially, to communities. While we provided colleges with the opportunity to explore return on investment as part of this initiative, we found that administrators often lacked the time and data necessary to make full use of the available tools.



References

- Bailey, Thomas, Shanna Smith Jaggars, and Davis Jenkins. *What We Know About Guided Pathways*. (New York, NY: Columbia University, Teachers College, Community College Research Center, 2015).
- Bremer, Christine D., Christen Opsal, Amy Hirschy, Marisa Castellano, Bruce Cener, Aaron Geise, and Amanuel Medhanie. *Relative Impact of Interventions to Improve Achievement and Retention in Postsecondary Occupational Programs*. (Louisville, KY: National Research Center for Career and Technical Education, University of Louisville, 2011).
- Chaplot, Priyadarshini, Darla Cooper, Robert Johnstone, and Kelley Karandjeff. *Beyond Financial Aid: How Colleges Can Strengthen the Financial Stability of Low-Income Students and Improve Student Outcomes*. (Indianapolis, IN: Lumina Foundation, 2015).
- Charles A. Dana Center, Complete College America, Education Commission of the States, and Jobs for the Future. *Core Principles for Transforming Remedial Education: A Joint Statement* (2012).
- Eyster, Lauren, Theresa Anderson, Robert Lerman, Daniel Kuehn, Burt Barnow, Maureen Conway, Ranita Jain, and Marcela Montes. *Findings From the Accelerating Opportunity Evaluation*. (Washington, DC: Urban Institute, 2018).
- Karp, Melinda Mechur. *Entering a Program: Helping Students Make Academic and Career Decisions*. (New York, NY: Columbia University, Teachers College, Community College Research Center, 2013).
- Perin, Dolores. Facilitating Student Learning Through Contextualization: A Review of the Evidence. *Community College Review* 39 no. 3, July 2011: 268-295.
- Smith, Tara and Jessica Toglia. *Accelerating CTE Student Success: The Role of Team Teaching and Supplemental Instruction*. (Boston, MA: Jobs for the Future, 2018).

Appendices

There are four case studies that serve as appendices to this summary report; each is available as a stand-alone report.

1. Accelerating CTE Evaluation Case Study: Hutchinson Community College
2. Accelerating CTE Evaluation Case Study: Neosho County Community College
3. Accelerating CTE Evaluation Case Study: Southeast Kentucky Community & Technical College
4. Accelerating CTE Evaluation Case Study: West Kentucky Community & Technical College

Endnotes

1. Not all programs were offered every semester during this period; the mix of pathways and the semesters included in the evaluation's baseline and program periods were determined based on individual college policies, model implementation schedule, and student demand. See individual college reports for more details.
2. The baseline period was set by each college as a timeframe before any Accelerating CTE model components were implemented in the particular CTE program. See individual college reports for more details.
3. See Bremer, et al., 2011; Charles A. Dana Center, et al, 2012; and Perin, 2011, for more on academic preparation barriers.
4. See Karp, 2013; Bailey et al., 2015; and Chaplot, et al, 2015, for more on supportive barriers.
5. See Eyster, et al., 2018, for more findings from the Accelerating Opportunity evaluation.
6. West Kentucky Community and Technical College extended its Accelerate You model to additional pathways during the project period, but only the ones shown here are included in the analysis. Seward County Community College implemented the Accelerating CTE model in health care, applied technologies, and truck driving.
7. Not all programs were offered every semester during this period; the mix of pathways and the semesters included in the evaluation's baseline and program periods were determined based on individual college policies, model implementation schedule, and student demand. See individual college reports for more details.
8. For more information on team teaching and supplemental instruction approaches in Accelerating CTE, see Smith and Toglia, [*Accelerating CTE Student Success: The Role of Team Teaching and Supplemental Instruction*](#), (2018).
9. Intrusive advisors follow students through the entire enrollment and class scheduling process, monitor student attendance and class progress, and follow up with students as needed.
10. See Smith and Toglia, 2018, for more information about the multiple approaches to team teaching.



88 Broad St., 8th Floor, Boston, MA 02110

122 C St., NW, Suite 280, Washington, DC 20001

505 14th St., Suite 340, Oakland, CA 94612

TEL 617.728.4446 **WEB** www.jff.org