Understanding Flexible Rural Career Pathways

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AnLar

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Summary

The Education Innovation and Research (EIR) program supports some of the U.S. Department of Education's most innovative ideas for addressing persistent challenges in K-12 education. The EIR program also serves rural districts and schools, among other locale types. While some EIR grantees have explored career pathways, navigating the nuance of innovative ideas for career pathways in rural settings presents an interesting and complex intersection that warrants continued exploration. This white paper is one of many efforts along that journey.

Rural career pathways offer students a clear progression from an area of interest to exact coursework requirements for high school graduation and then to subsequent employment or postsecondary enrollment. These students are provided with an opportunity to obtain a set of skills, experiences, or credentials that can result in employment in their current rural area if they choose. Schools within rural locales often have unique challenges that influence student advancement and achievement. On average, students in rural locations show lower rates of college enrollment and degree completion (Wells et al., 2019), despite similar levels of academic achievement to their urban counterparts (Drescher et al., 2022). These disparities may be attributed to several factors, including lower socioeconomic status on average, a lack of available careers requiring postsecondary education, geographic isolation, and societal expectations (Drescher et al., 2022; Wells et al., 2019). This paper addresses three areas related to rural career pathways: (1) components of successful career pathways, (2) factors that set rural schools apart and support a place-based approach, and (3) current promising interventions for rural career pathways. Interventions that partner with the community, build teacher education and support, allow opportunities for completing certificates/credentials, create simulated work environments, and provide real-world work experience are promising innovations to advance rural students' postsecondary achievement.

Visualizing a flexible rural career pathway

Introduction

A goal of the U.S. education system is to prepare students for education and work after they graduate from high school. This paper offers three main elements needed to understand rural career pathways: (1) successful components of rural career pathways, (2) factors that support a place-based approach, and (3) promising rural career pathway interventions.

What does a rural career pathway look like?

Broadly, career pathways offer students a clear progression from an area of interest to exact coursework requirements for high school graduation, and then subsequent employment or postsecondary enrollment. Career pathways aim to support high-demand occupations by aligning high school and postsecondary coursework, training, and experience to these occupations (Eyster et al., 2016; Gottfried & Plasman, 2017; Stone, 2017; What Works Clearinghouse [WWC], 2021). Rural career pathways offer students a set of skills, experiences, or credentials that can result in employment in their current rural area if the student chooses. Alternatively, rural career pathways may expose students to new, in-demand occupations that align with student interests outside of their immediate community (Haviland & Robbins, 2021; Saw & Agger, 2021). In rural areas in 2019, the four industries employing the largest share of workers were government, manufacturing, retail, and health care. Three of these industries (government, health care, and retail) also topped the list in metro areas (Davis et al., 2022). The highest growth industries for rural areas are real estate, education, administrative services, professional services, health, and finance (Davis et al., 2022). In a 2020 survey of 1,600 rural residents, the top three fields for professional certificate holders were health care, education, and mechanic/repair technologies (Keily & McCann, 2021).

"When designed and delivered well, career pathways combine occupational training with comprehensive support services that enable students to advance toward higher levels of education and family sustaining careers."

–What Works Clearinghouse Practice Guide on Designing and Delivering Career Pathways at Community Colleges

While rural career pathways often refer to students' engagement in career and technical education (CTE), career pathways can follow other routes. In particular, recent research addresses opportunities to improve technological credentials and science, technology, engineering, and mathematics (STEM) and computer science coursework in rural schools (Saw & Agger, 2021). The literature highlights several components that can contribute to creating successful rural career pathways. These components include creating flexible, defined pathways; engaging industry partners and local workforce systems; providing work experience; and extending pathways to include career changes later in life (Alliance for Quality Career Pathways (AQCP), 2014; Constant et al., 2021; Gottfried & Plasman, 2017; Stone, 2017). Each component is discussed below.

Figure 1. Conceptual understanding of a rural career pathway

Flexible, clearly defined pathways

Pathways do not have to lead to a single occupation, but should be designed with specific skills and employment goals in mind (Stone, 2017; WWC, 2021). A clearly defined pathway might include a set program of study through secondary education aligned to a recognized credential or postsecondary degree that would offer employment in a field relevant to a student's rural location or interests they cannot pursue in their current area (Castellano et al., 2017). For rural career pathways, it is particularly

important that the structure of a course program is flexible enough to leverage assets, consider where resource limitations exist, and build out more robust supports as needed. Pathways should employ stackable approaches, in which students earn credentials as they progress through program benchmarks. Through this approach, if students leave the program with partial completion, they will have clear credentials for employment. One example is the Accelerating Opportunity (AO) program. AO offered industry-recognized, stackable credentials in an average of 12 credit hours across four states between 2012 and 2015. Based on the results from a quasi-experimental design study, participants completed more credentials in fewer credits than matched students, and participants in two states also had higher short-term earnings than nonparticipants (Anderson et al., 2017). Flexibility, such as stackable credentials or multiple points of entry, can help students in rural areas leverage assets to access or pursue opportunities.

Engaging partners and local workforce systems

Strategic partnerships can offer additional equipment, instructional support, and funding opportunities (Advance CTE, 2017; Buckwalter & Togila, 2019). Employer partnerships might support industry-sponsored training for currently employed adults to enroll in additional education credentials (Bragg et al., 2019). Workforce systems support specific categories of people who live in the community, such as youth, individuals with personal challenges to work, adults in need of basic skills, and adults seeking a mid-career change. A workforce system might include schools, local employers, nonprofit organizations, and government funding working together to offer services, training, strategy, and resources (Eyster et al., 2016). Additional community development partnerships might support students by building rural resources around transportation, housing, child care, and health care (Bozarth & Strifler 2019). Research practice partnerships (RPPs) can lead to partnerships between educators and researchers to maintain current information and evidence-based practices around career pathways. For example, RPPs can support opportunities for rural middle schoolers in STEM fields, generate scalable models for equity-based college and career pathways, identify barriers to specific career pathways, and broaden participation in underrepresented fields (Bhaduri et al., 2022; Fall et al., 2019; Johnston, 2020).

Real-world work experience and project-based learning

Situating students' coursework in the real-world setting of work in their community can lead to improved student outcomes (Constant et al., 2021; U.S. Department of Labor, 2014; WWC, 2021). Successful career pathways often emphasize additional skills in preparation for the workforce, such as resume writing, critical thinking, communication skills, and computer skills (Gauthier, 2020). Through employer partnerships, rural career pathway programs may be able to offer onsite demonstrations and access to internships that could transition to permanent positions. For rural communities, meaningfully incorporating local economies into secondary education through business tours, classroom visits, or networking provides a clear picture of local opportunities (Roberts & Grant, 2021). Because of the potential distances between students and employers in rural communities, creating hands-on experiences can be challenging (Advance CTE, 2017a). This may be overcome through activities such as a simulated workplace, interactions with business leaders through technology, using virtual reality, building social networks, and workshop experiences (Advance CTE, 2017; Hirsh-Pasek et al., 2020; Makransky et al., 2020; Means, 2019). Rural programs could focus on facilitating school visits by industry leaders, prioritizing cross-district exchanges of resources, and leveraging the

local environment to develop learning opportunities. Particularly for rural career pathways, positive messages about the local economy through work experiences can encourage local workforce entry (Agger et al., 2018; Roberts & Grant, 2021).

Longitudinal career development and later-life opportunities

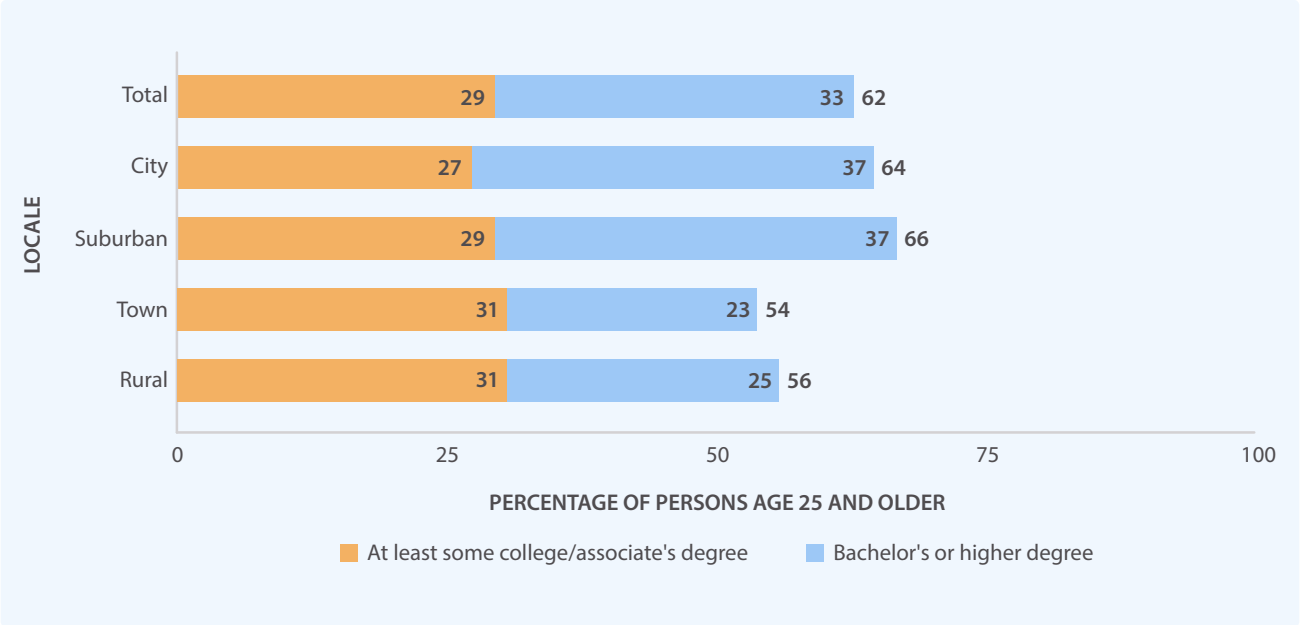
Rural career pathways do not start in high school and end with employment or postsecondary education. Instead, these pathways can begin much earlier, developing students' interests and awareness of the local economy as early as kindergarten, and then end later, after providing avenues for late-life career changes. Companies that support rural areas often require specific skills, and the technical requirements of jobs are changing rapidly (Buckwalter & Togila, 2019). Due to the potential for rapid change, rural career pathways should remain flexible so they can adapt to career adjustments to meet the needs of the local economy. In elementary school, rural career pathways can incorporate visits to local towns, instructing students on the local geography and economy (Bright, 2020). Elementary school counselors also can support students in exploring knowledge and experiences with careers, taking into account the specifics of their location and community culture (Bright, 2020). Moreover, extended career pathways are becoming increasingly common, as adult learners attend community colleges or seek additional education to pursue new career opportunities (Boeren et al., 2020). Rural career pathways, particularly those for adult learners, should include strategies for career progression, including stacked credentials, career advising, and job placement (Bragg et al., 2019). Evaluations show that students who benefited from career progression strategies have higher rates of enrollment for additional training and improved employment retention (Bragg et al., 2019).

Place-based approach to rural career pathways

A place-based approach to education supports a curriculum that aligns with the values and industry context of a local community (Irvin et al., 2019; Roberts & Grant, 2021), including a wide range of strategies and topics. In the context of rural career pathways, a place-based approach means advocating for college preparatory and career course offerings as a continuum of pursuits that can be adjusted to best support students and industries in the community (Budge et al., 2019; Roberts & Grant, 2021). A place-based approach, for example, might consider the mechanisms that play a role in geographic education gaps and focus on areas that match student and community needs. In addition, this approach recognizes that rural schools may be quite different from each other despite their qualification as rural (Greenough & Nelson, 2015).

Rural students accounted for 19 percent of all students enrolled in public and private elementary and secondary schools in the United States in 2019-20 (National Center for Education Statistics (NCES), 2021a; NCES, 2021b). Historically, rural students on average have lower educational attainment and postsecondary enrollment than their nonrural counterparts. In 2019, adults living in rural locations had lower levels of education on average than adults living in other U.S. locales; 25 percent of adults aged 25 and older in rural areas held a bachelor's degree or higher compared with 37 percent of adults in cities or suburban areas (NCES, 2023) (Figure 2).

Figure 2. Lower levels of educational attainment in rural areas, 2019



Source: U.S. Department of Commerce, Census Bureau, American Community Survey (ACS), 2019. See Digest of Education Statistics 2020, table 104.25.

This rural-nonrural education gap has not been fully explained. In the elementary grades, third graders in rural areas show higher average achievement than third graders in nonrural areas, though these differences are small (Drescher et al., 2022). In addition, achievement differences based on socioeconomic status are smaller in rural areas than nonrural areas (Drescher et al., 2022). Disparities in educational attainment among rural students may be attributed to several factors, including lower socioeconomic status on average, a lack of available careers requiring additional credentials, geographic isolation, and societal expectations (Drescher et al., 2022; Koricich et al., 2018; Wells et al., 2019). A strengths-based focus on local industry opportunities, building new career trajectories in the community, and understanding the regional economy can foster long-term career support among communities and families even at young ages (Bright, 2020).

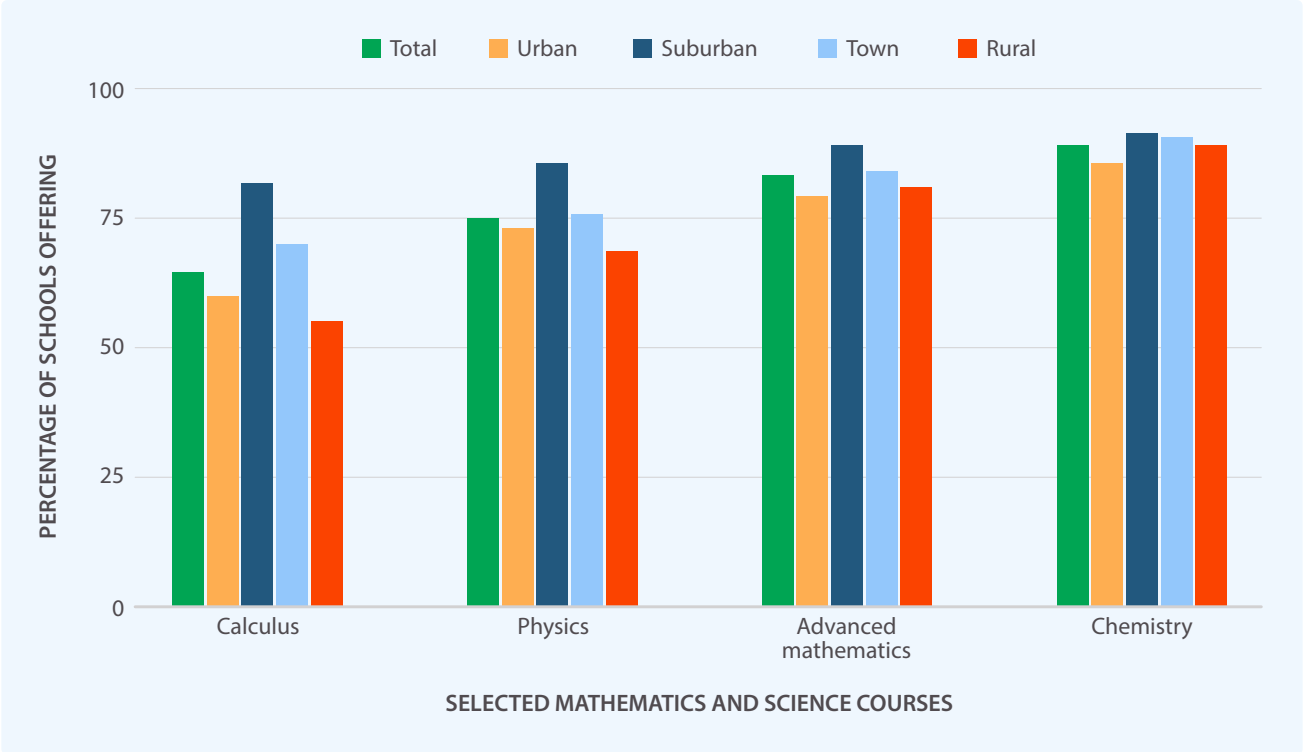
Rural education challenges

Students and schools within rural locales often have unique challenges that influence educational attainment, achievement, and employment. Several of these issues are addressed below, and many are interconnected. Often, rural challenges include small school size, high rates of poverty, relatively fewer teachers and administrators, and less government funding (Harris & Hodges, 2018; Yettick, 2014). Nevertheless, rural schools and communities can be creative in using the resources and opportunities available to mitigate challenges. Furthermore, grant programs such as EIR may help to infuse additional resources and innovations that may address these challenges.

Less diversity in coursework opportunities

Given the small size of rural schools and the relatively fewer resources that accompany small size, students in rural schools may not have as many diverse career pathways available to them, particularly in emerging sectors (Advance CTE, 2017). With the high rate of growth in STEM career fields, research recognizes that many rural students have less access to STEM and computer science coursework than urban students (Harris & Hodges, 2018; Saw & Agger, 2021) (Figure 3). As a result of fewer coursework opportunities and fewer STEM jobs in their area, rural students may also finish high school with lower levels of interest and familiarity with STEM careers and topics (Lakin et al., 2021; Saw & Agger, 2021; Thiele & Bogdon, 2022).

Figure 3. Fewer rural schools offer calculus, physics, and advanced math compared with suburban and other locales



Source: De Brey, C., Snyder, T.D., Zhang, A., and Dillow, S.A. (2021). Digest of Education Statistics 2021, Table 225.72. National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Available at https://nces.ed.gov/programs/digest/d21/tables/dt21_225.72.asp?current=yes.

Geographic isolation

Geographic isolation has implications for rural career pathways in three major ways. First, geographic isolation and lower average salaries can lead to teacher recruitment and retention challenges. Issues related to teacher recruitment and retention can limit student coursework opportunities (Covay Minor et al., 2019). Second, geographic distance means it takes more time and money for teachers to travel for professional development (Yettick, 2014). Because of this, rural and small-town schools are less likely to require teachers to participate in professional development related to math and science learning and less likely to hold out-of-school STEM activities (Saw & Agger, 2021). Third, the distance to work, school, and home limits perceived and actual employment opportunities. In a study of average achievement levels, achievement was lower in the more remote rural districts than in the less remote districts (Drescher et al. 2022). The tight-knit nature of some rural communities may mean that some students do not consider faraway opportunities or careers that students do not think would be an option in the community. In a place-based approach, administrators, counselors, and educators should acknowledge geographic constraints in the area and describe what flexibility could look like for students who remain in the area to work (Roberts & Grant, 2021). This approach prioritizes the strengths of the rural community while recognizing limitations so that students are better prepared for career decisions.

Specificity of local industries

Industries in rural locations may be more tightly linked to the region than industries more commonly found in urban areas. For example, agricultural industries are almost exclusively found in rural communities. In addition, rural economies may be more sensitive to economic cycles and downturns (Ananat & Gibson-Davis, 2011; Mueller et al., 2021). Rural student achievement outcomes are also sensitive to these macroeconomic impacts (Ananat & Gibson-Davis, 2011). In addition, government spending in the region may be more driven by the needs of the local industry than the region's social needs (Marchand & Weber, 2020). Research also indicates rural achievement and learning rates are associated with the type of industry in the local economy. Student achievement was lower in rural areas where at least a quarter of the economy was dependent on mining than in areas dependent on farming, but community demographics had a larger effect (Drescher et al., 2022).

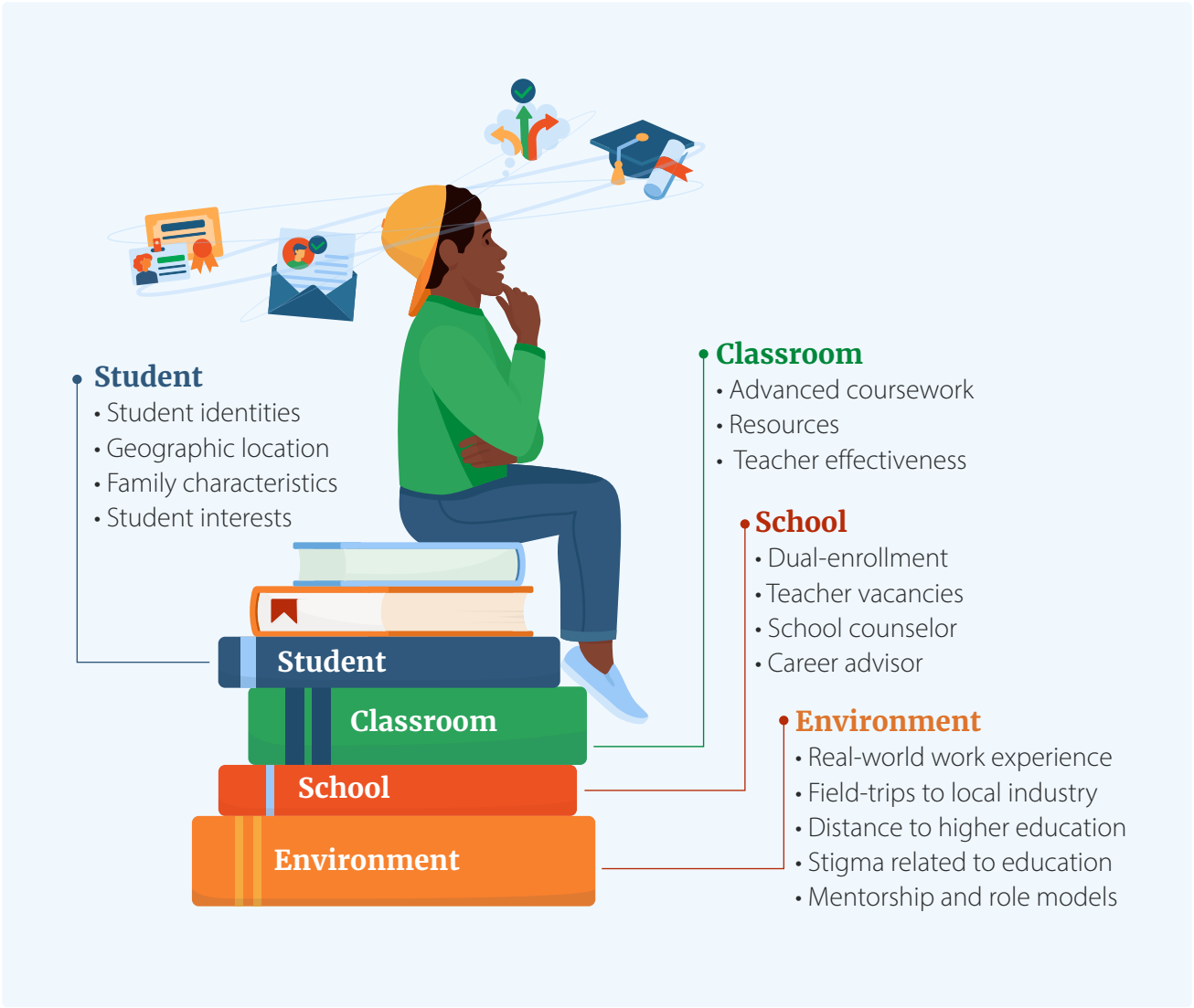
Addressing the student contexts of rural career pathways

Approaches to rural career pathways can build on social cognitive theory (Bandura, 1986), which provides a framework that addresses students' roles and relationships, interests, and expectations, as well as the organizational structures and systems surrounding them that may create support or barriers (Lent et al., 1994; Wong et al., 2022). Based on this approach, there are different contexts through which programs or interventions may impact students' career pathways. Indicators for rural student opportunities can be categorized based on classroom, school, and community contexts.

Student-level factors are typically demographic and less likely to be affected by educational policy. Components that might be addressed through the classroom context may include classroom resources, teacher mentoring or role models, and teacher effectiveness. School context may include school-industry partnerships, collaboration with postsecondary institutions, established step-by-step pathways to graduation and employment, access to advanced coursework, dual-enrollment opportunities and remote coursework, teacher retention and attrition, and access to high-quality

counselors or career advisors for all students. Community context factors include local exposure to industry and careers, the proximity of and transportation to postsecondary institutions, increased interaction with industry partners in the community, and campaigns that address stigma around educational attainment in the community.

Figure 4. Areas of influence along career pathways



Current rural career pathway programs and practices

Understanding some current rural career pathway programs and practices can help generate ideas for replication and adaptation with further innovation. Some of these programs are being implemented or supported through current EIR grants and are structured around the recommended components for successful rural career pathways. Each highlighted program has been implemented within the past five years. This provides a snapshot of efforts in current rural contexts. These programs are based on promising evidence but have not necessarily established evidence of effectiveness in improving student outcomes.

Flexible, clearly defined pathways

Rural career pathways can exist across many different content areas and industry sectors. One area where rural schools and districts are working to build career pathways is computer science.

Building computer science pathways

In one EIR project, CODERS, Missouri State University is expanding access to computer science. The CODERS program is designed to improve computer science learning through professional development for teachers and the creation of computer science coursework for students in rural communities. It includes summer professional development institutes, ongoing coaching, the creation of "CODERS kids," experiential learning modules, and lesson plans. The lessons use a flipped classroom approach where the modules include student-made instructional videos as one method to improve student computational thinking. The program aims to increase student proficiency and interest in computer science as well as increase teachers' efficacy and computer science knowledge, leading to heightened student interest in pursuing a career pathway in this area.

Another EIR project, CS4NorCal, offers small and rural schools new computer science pathways, providing curriculum and training across grade levels for teachers and administrators. The project uses the Computer Science Rural Implementation Model, an innovative solution to creating pathway access for students through a sequence of courses, professional development, competency certificates, and work-based learning opportunities. This program is targeted to rural schools in California with different technology needs than urban schools in the same region. The model includes computer science classes beginning in grade 3 so students can start advancing through the subject at an early age. Additionally, the model links education and career by providing students with competency certificates demonstrating their proficiency in multiple technology programs. This link is strengthened by the addition of community partners in the industry, allowing students access to work-based learning. By implementing a structure to begin a career pathway in computer science, the model gives students a multitude of career opportunities that they may not have previously been exposed to.

Engaging partners and local workforce systems

Rural students may not be exposed to the same occupational diversity in their communities as urban students. This is often due to many factors such as rural communities being smaller and less populated, adults leaving the community for job opportunities, greater distance to postsecondary opportunities, and fewer local industries. For these reasons, rural students may not have mentoring opportunities, not know some careers exist, or not feel they have the ability to get a job in these careers.

Establishing secondary-to-postsecondary partnerships and collaborations

Rural career pathway partnerships provide new opportunities for rural students and may also serve the employment needs of rural schools and communities more broadly. Collaborations can offer students a wide range of support from secondary education through credentials and employment. North State Together (a collaboration between counties in far Northern California and the Shasta College Foundation) is expanding in five rural counties and plans to add five more. North State Together requires teams to include at least one district, local employers, a community college, a University of California school, and a California State University school. The partnerships offer college preparation support and early credential programs, work-based learning opportunities, high-level advising, and learning environments centered around inclusion and equity. The partnerships provide K-16 learning opportunities for students using a place-based approach and commit to creating accelerated degree and/or credential programs that incorporate work-based learning, in at least two of the following focus sectors: (health care, education, business management, and engineering or computing).

Texas's Rural Schools and Innovation Zone (RSIZ) creates postsecondary pathways for rural students in three school districts by providing five academy programs with coordinated postsecondary partnerships to support dual-enrollment credits and program completion. Students participating in RSIZ earn industry credentials and complete dual-credit programs above the state average.

Partnerships between secondary and postsecondary institutions can also support the needs of rural schools and administrators as well as students' postsecondary persistence. Education is a growing industry, and rural districts often face teacher shortages. Alabama's Teacher Cadet Program works to address the shortage by developing an education pathway through a partnership with higher education (University of West Alabama) and dual-enrollment opportunities. Other districts in Alabama are also providing funding and support for CTE pathways, including Baldwin County's cluster of courses focused on education and training. Similarly, the Michigan Department of Education earmarked $575 million to address the teacher shortage through apprenticeship programs. The LAUNCH program includes an out-of-school-time teaching credential and coursework for secondary students to gain teaching experience. In a paid summer internship program where high school students receive teaching experience, the number of participants has tripled over the past year.

Increasing student knowledge of local careers through industry connections

Tennessee offers a Work Ethic Distinction credential for graduating high school seniors. The credential gives students preference for job interviews at about 200 partnering employers across the state if they meet all the qualifications in the job posting. This initiative is implemented at over 150 high schools statewide but targets rural high schools. To earn the credential, students must complete a number of work-related activities covering areas such as work-based learning and soft skills.

The Niswonger Foundation in Tennessee offers Career Connect, a two-year application-based program where high school students learn soft skills and explore local career options. The program targets students who indicate some uncertainty about their career pathway. During their sophomore and junior years, students have two-week summer exploration. During their senior year, faculty work with students to create a specific personalized plan. The program started several years ago in five high schools, and the Foundation holds an expansion grant to extend the program into two new counties, placing Career Connect in 11 schools across four districts. As the program expands, training for teachers at local high schools will increase to provide the necessary skills and support for summer field trips for students. The program shows high rates of attendance.

Using EIR funding, the Niswonger Foundation also has developed virtual options for out-of-school-time activities that would advance student learning and expose rural Tennessee students to STEM environments that they may not otherwise have access to. This program provides virtual and in-person learning opportunities for middle and high school students to increase exposure to activities such as robotics, architecture, and coding. One goal of this program is to increase rural students' access and interest in STEM career pathways as well as increasing their readiness and ability to pursue these pathways.

In Ohio, a rural school district has a program, Career Gears, that exposes K-12 students to career pathways that they may not have been able to explore otherwise. This program involves specific learning goals related to future career opportunities and uses service learning and job shadowing to give students real-life experience outside of the classroom. Preliminary qualitative findings suggest increased student preparedness to meet future career goals.

Real-world work experience

Experiential learning focuses on the student learning by actively participating in an experience and reflecting on it (Andersen et al., 2020). For students who may struggle to apply classroom learning, this type of learning often facilitates a deeper understanding of skills and knowledge. Educators and researchers recognize that students learn best when they can access various styles of learning. The development of simulated work experiences or experience-based learning provides these students with opportunities to further develop their career pathways.

Simulated workplace

In a simulated workplace, students gain work skills through a classroom experience that mimics a real work setting. In this environment, students meet the demands of actual jobs in their community, demonstrating job requirements including professional skills (such as interviewing), knowledge of safety standards, and relevant technical skills. West Virginia offers a Simulated Workplace model, launched in 2013 through state partnerships with workforce development organizations and the Chamber of Commerce.

Virtual reality

Virtual learning bridges the gap between rural communities and other types of industry not commonly found in these locations. Makransky et al. (2020) conducted two studies to evaluate the use of an immersive virtual reality simulation to increase students' interest in STEM career pathways.

The first study used a virtual reality simulation of laboratory safety. The second study featured a DNA analysis virtual reality simulation. Both studies resulted in an overall increase in science interest and science career aspirations.

Build student career awareness through experiences

Health care is one of the fastest growing industries in rural areas (Davis et al., 2022). In 2018, a rural high school in New Hampshire designed an interactive, one-class-period workshop to educate students about health careers and the steps to take from high school to a career in medicine. Data collected after the workshop indicated that 96 percent of students appreciated the opportunity to learn about this career pathway. Just over 50 percent of students indicated that they were inspired to pursue this pathway because of the information provided during the workshop.

Reach University is establishing a job-embedded strategy to take current or future teachers from an associate's degree to a bachelor's or graduate degree Reach University is building career pathways between rural community colleges and school districts in four states, providing rural learners from low-income backgrounds with job-embedded training that leads to a bachelor's degree and employment in high-quality, high-demand jobs in the education sector. Students are able to spend part of course work time applying what they learn in their current educational position.

Interventions that longitudinal career development

Career pathways exist for individuals in different phases of life. In many cases, older adults are on a career pathway either through continuing education for a stable career or through switching careers. In a post-pandemic world, many midlife adults have found themselves searching for a new pathway to provide security and stability in uncertain times (Boeren et al., 2020). Resources such as micro-credentialing and stackable credits provide opportunities for individuals to advance and change pathways easily throughout their lifespan.

Micro-credentials

Micro-credentialing is a way to focus on achieving credentials in one specific area of skills and experience in a short period. This is a significant advantage for many individuals who are working to enter a specific industry or advance within their current field (Gauthier, 2020). As the use of micro-credentialing increases, another significant benefit is how it gives rural learners an avenue for higher education and career development, which contributes to rural communities' economic growth. Recent research highlights case studies of four programs offering micro-credentials for rural learners (Tinsley et al., 2022).

A current EIR grantee, the Ohio Valley Educational Cooperative (OVEC), has developed a micro-credential project in computer science for both rural and urban schools. Rural schools face a significant challenge in hiring and retaining computer science teachers due to higher turnover rates, increased course load, and lower salaries than other computer science job opportunities. OVEC is working to mitigate these challenges by providing teachers with access to a self-paced micro-credential program. This six-course program was designed to teach educators the fundamentals of computational thinking and the core components of the code.org curriculum for elementary and middle schools.

Looking forward

Rural communities face unique challenges in preparing students for postsecondary and career success. Challenges might include small school size and fewer resources, less diverse coursework opportunities, geographic isolation, and fewer local industry options. Many examples exist where researchers and educators recognized these challenges and created innovative solutions to address student access and quality of these career pathways. One important focus for rural career pathways is building flexibility into a systematic approach. Nimble adaptation can address the need for opportunities to change careers across the lifespan and adapt to changing technological developments. Flexible pathways allow individuals of varying interests and life stages to participate in career growth opportunities that they may not otherwise access. One example of supporting flexible career pathways is micro-credential programs for students and adults in the community to help provide work experience and exposure to local industry. Similarly, interventions highlighting community partnerships and building real-world work experience in safe learning environments enable students to explore career options not previously feasible.

Recent EIR grantees and other innovators have established programs that incorporate flexibility and other evidence-based practices used in successful pathways. For example, many rural communities have experienced a lack of interest, resources, and teaching ability to provide computer science courses preparing students for entry into STEM careers. Missouri State University's CODERS project offers teachers and students the opportunity to develop an interest and ability to pursue computer science as a potential pathway. Another example of innovations to build industry access is the Niswonger Foundation's Career Connect program. This program works with students over the course of two years during high school to build industry skills and exposure to local industry connections. Students graduate from this program with a personalized career pathway plan preparing them for postsecondary opportunities. By providing these successful components and real-world examples of current interventions, we hope to support continued conversation and innovation development to advance career pathway access in rural communities, career pathways in other locales, and other types of innovations in rural settings.

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