2018–19 OCTAE Customized Technical Assistance to States
Final Summary Report for the Wyoming Department of Education

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Background
State agencies and other entities that receive funding through the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV) may apply to the U.S. Department of Education’s Office of Career, Technical, and Adult Education (OCTAE) for customized technical assistance (TA). RTI International is the contractor for the initiative to provide TA with a focus on improving state capacity to report and collect career and technical education (CTE) data.

The Wyoming Department of Education (WDOE) requested TA to align Wyoming’s current CTE data collection system to meet the new Strengthening Career and Technical Education for the 21st Century Act (Perkins V) requirements as well as the accountability provisions within the Every Student Succeeds Act and the Wyoming Accountability in Education Act. During the initial call between WDOE and RTI to discuss the TA request, WDOE leadership expressed an additional interest in learning more about collecting participation data for work-based learning (WBL) and ways to offer WBL for students in rural areas. Shortly after this call, there was a leadership change at WDOE, and the new leadership decided not to pursue the data collection system alignment request in favor of the requests around WBL.

To address the state’s request, RTI examined WBL activities across states. This report presents the results of TA focused on the following questions:

- How do states define quality WBL?
- How is WBL implemented in rural areas?
- How do states collect data on WBL?

Additionally, near the end of the TA period, WDOE indicated it would be interested in seeing information about industry-recognized credentials (IRCs) that RTI had prepared for other states. In response, RTI included information on identifying high-quality credentials, incentivizing IRC offerings, and collecting and verifying IRC data.

Technical Assistance
Researchers at RTI conducted a document review of definitions of quality WBL, ways to collect data on WBL, and methods for implementing WBL in rural areas. The materials reviewed came from national organizations and WBL programs from the following states: Alabama, Colorado, Florida, Indiana, Iowa, Kentucky, Louisiana, Massachusetts, North Dakota, Oregon, Tennessee, West Virginia, and Wisconsin. The document review focused on WBL at the secondary level. In addition to the document review, researchers interviewed representatives from the West Virginia Department of Education by phone to gather additional information about its Simulated Workplace model. Exhibit 1 shows states contacted by RTI on behalf of Wyoming.
Key Findings

Work-Based Learning

➢ States’ definitions of quality WBL have common elements: While definitions vary based on state priorities, most state-level definitions of quality WBL have shared elements, including emphasizing real-world experience and hands-on skill building.

➢ There are two predominant methods for collecting WBL data: Data on WBL participation and completion includes self-reported data collected by local education agencies (LEAs) and course-based enrollment data collected by the state through transcripts.

➢ States and districts have adopted pedagogical and technological tools to provide WBL opportunities to rural students: Though students in rural areas may not have easy access to workplace-based WBL in their field of choice, schools and districts have invested in simulation tools and online platforms to give students the opportunity to replicate workplace experiences and interact with employers.

➢ Simulated workplaces can help students in rural areas develop technical and employability skills: Although simulated workplaces do not require student placements at employer worksites, employers are involved in multiple aspects of the programs, including program planning and evaluation.
Industry-Recognized Credentials

- **Focus on industry certifications**: State IRC lists for secondary education typically focus on third-party industry certifications, rather than on licenses or apprenticeships. This is because high school students are often ineligible for licenses and apprenticeship programs due to age and work experience requirements. Additionally, apprenticeship regulations and data collection are often led by a noneducation state agency, requiring development of cross-agency data-sharing partnerships and methods of linking student data to noneducation data.

- **State IRC lists are developed through cross-sector collaborations**: State IRC lists are living directories of IRCs that have been approved by state entities to qualify for data reporting or state-provided incentives. IRC lists are often created through a process to determine the alignment of an IRC with CTE coursework as well as the value of an IRC in the labor market, which is determined by gathering input from the relevant industry sectors and state and regional agencies. Most states use a multistep application and review process for adding new IRCs to the list.

- **Incentives for IRCs may be at the student, school, or district level**: Incentives to offer and encourage IRC attainment range from program or course requirements at the student level to accountability measures or funding incentives at the school and district levels.

- **Methods for verifying student IRC attainment vary by state**: Student self-reported data may be verified by requiring proof of certification (e.g., a scanned copy of the completion certificate). In addition, some states have arrangements with certifying bodies to receive student-level certification data.
Work-Based Learning

Definitions of Quality Work-Based Learning

Twenty-eight states have adopted a formal, state-level definition of WBL. While definitions of quality at the state level are limited, some states include quality criteria in WBL manuals and other guidance. Additionally, some national organizations such as Advance CTE and Association for Career & Technical Education have published definitions of WBL quality. While definitions vary across states, there are some common elements include the following:

- Offering hands-on applications of learning
- Aligning to student goals and career plans
- Exposing students to different career options and pathways
- Connecting to industry and real-world experiences and skills
- Including preparation and support for students, teachers, and employers
- Assessing student growth and skill gain
- Including guided reflection activities for students

The following definitions of WBL address the quality of WBL experiences and allow for local variation in the types of programs offered. As a starting point, RTI consulted a recent publication of the College & Career Readiness & Success Center, *Work-Based Learning Definitions: Themes from States and National Organizations*. The definitions included in Exhibit 2 combined one or more of the following program components: workplace experiences, knowledge and skills, employability skills, career pathways, instructional strategies, and mentoring.

Exhibit 2. Summary of program components included in state definitions of work-based learning

<table>
<thead>
<tr>
<th>State</th>
<th>Workplace experiences</th>
<th>Knowledge and skills</th>
<th>Employability skills</th>
<th>Career pathways</th>
<th>Instructional strategies</th>
<th>Mentoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>X</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Indiana</td>
<td>X</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Iowa</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kentucky</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Nebraska</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Dakota</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oregon</td>
<td>x</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Alabama

**Definition:** “WBL provides students with educational opportunities that typically cannot be replicated in the classroom. Work experiences are designed to connect information learned in the classroom with skills obtained in an occupational setting as an apprentice or intern. WBL promotes improved skills, higher efficiency, and the availability of a better-trained labor pool that encourages business growth and

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productivity. Well-managed WBL experiences build confidence in the school system and have benefits for the student, employer, mentor, school, and community.”

**Source:** Alabama State Department of Education. 2014. *Alabama Work-Based Learning Manual.*
https://www.alsde.edu/sec/cte/WBL/W-B-L%20MANUAL.docx.

**Indiana**

**Definition:** WBL is “Creating opportunities to learn in the workplace can help students develop and refine the workplace competencies needed to enter and succeed in a chosen career, adjust to the employment environment, and advance along the career pathway of choice.”

Indiana’s WBL progression:

“Career Awareness

Career awareness should provide an initial view and exploration of careers. Career awareness may begin in elementary grades and continue through high school, with a heavy emphasis in early high school.

Career Exploration

Career exploration should provide an opportunity for students to further explore careers of interest. Students should gather detailed information about careers to help them in career planning.

Career Preparation

Career preparation allows students to gain real-world experience related to a career pathway. Students should research and plan for postsecondary opportunities related to the career.” (p. 3)

**Sources:**

1. Indiana Department of Education. 2012. *Work Based Learning.*

**Iowa**

**Definition:** “WBL is the planned and supervised connection of classroom experiences with the expectations and realities of work. WBL experiences provide all students the opportunity to develop and apply knowledge, skills, and employability attitudes and behaviors leading to better informed career choices and productive employment.” (p. 1)

**Source:** Iowa Department of Education. n.d. *Work-Based Learning: Planning and Developing Work-Based Learning Programs.*

**Kentucky**

**Definition:** “An effective teaching approach used to engage students in real-life occupational experiences. It incorporates structured, work-based learning activities into the curriculum, allowing a student to apply knowledge and skills learned in the class and connect those learning experiences in the
workplace. WBL provides students the opportunity to engage and interact with employers, while learning to demonstrate essential employability and technical skills necessary for the workforce.” (p. 2)


**Nebraska**

**Definition:** WBL is “an educational approach that uses workplaces to structure learning experiences that contribute to the intellectual, social, academic, and career development of students. These experiences supplement school activities that apply, reinforce, refine, or extend the learning that occurs at a worksite.”


**North Dakota**

**Definition:** “A set of instructional strategies to engage employers and schools in providing learning experiences for students. WBL activities are structured opportunities for students to interact with employers or community partners at school, at a worksite, or virtually, using technology to link students and employers in different locations.

The purposes of WBL are to build student awareness of potential careers, facilitate student exploration of career opportunities, and begin student preparation for careers. These awareness, exploration, and preparation activities help students make informed decisions about high school course and program enrollment and about postsecondary education and training. Exposure to careers through an individual WBL activity can be beneficial, but students attain best results when WBL activities are structured and sequenced over several years.

WBL should be integrated with classroom learning to help students draw connections between coursework and future careers. Students need time and assistance to prepare for WBL activities, as well as opportunities to reflect on the activities afterward.”


**Oregon**

**Definition:** “Work-Based Learning is an applied learning strategy to support students to be college and career ready. The major function of work-based learning is to expose students to future options while providing opportunities for skill development and mastery over time. All WBL experiences involve interactions with business and industry or community professionals and are intentionally designed to help students expand and strengthen their applied learning. Not all WBL takes place in a “work” setting; in the community or at a school, WBL can be supported virtually via technology or can take place across a combination of all these settings.”

Collecting Data on Student Participation in Work-Based Learning

States collect data on WBL in two ways:

- **Self-reported WBL data** is collected by an LEA through a statewide system or survey which is then sent to the state. The Massachusetts Career Ready Database, for example, tracks student WBL participation based on system entries by students, employers, and school staff. The system is used by the state to track student WBL activities. The information is also available to youth employment, internship, and career development programs in Massachusetts to better inform offerings.

- **Course enrollment–based data** is collected through WBL course numbers. Any student participating in a WBL activity is required to enroll in the course to receive credit. Multiple states, including Florida, Tennessee, and West Virginia, have a WBL course that allows both CTE and non-CTE students to enroll or is specific to a CTE pathway or career cluster.

Supporting Rural Work-Based Learning

Implementing WBL in rural areas is challenging due to barriers to access such as a lack of public transportation and limited numbers of local employers in certain fields of study. To combat these barriers, states have come up with different methods to offer WBL experiences:

1. **Simulated workplaces**: Through simulated workplaces, the CTE classroom emulates workplace practices from interviewing and hiring to safety policies and procedures. Students act as “employees” who are held to industry rules and expectations while building both employability and technical skills. This model was created in West Virginia and has also been implemented statewide in Alabama. At WDOE’s request, a case study containing more detailed information on Simulated Workplace in West Virginia is available in Appendix A.

2. **Simulation tools/labs**: Some schools and programs in rural areas use simulation equipment to replicate experiences that students may encounter on an actual job site within their school setting. Examples of these kinds of tools include high-fidelity manikins for health care programs, welding simulators, commercial driver’s license truck simulators, and mobile labs.

### Course enrollment–based data: Tennessee

High school students in Tennessee can use the WBL: Career Practicum Course to substitute for advanced coursework. To gain credit for WBL, student experiences must meet the following requirements:

- Build on classroom instruction in the workplace
- Help students develop employability skills
- Be one of the following activity types: internship, apprenticeship, or paid-work experience
- Have a WBL coordinator to coordinate experiences and act as an intermediary between schools and employers
3. **School-based enterprises**: In rural areas, school-based enterprises offer students the opportunity to engage in the production and/or sale of goods and services without leaving their school. School-based enterprises can take different forms including school stores, catering businesses, or print and silk-screening shops.

4. **Technology platforms for employer engagement**: Some rural schools and districts use online platforms to connect their students with employers virtually. These platforms can serve two purposes: connecting schools to industry-based mentors for curriculum and instruction help and facilitating student WBL placement and participation.

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### Digital platforms to connect employers with rural schools

- **Nepris (Louisiana)**: Matches, connects, and engages industry professionals with teachers and learners. Schools can request virtual “visits” and other engagement from industry experts.
- **Inspire (Wisconsin)**: Employers create profiles, highlight opportunities within their companies, volunteer for career exploration and immersion activities and exchange messages with students.
- **ImBlaze (Louisiana)**: Helps students pursue internships with employers, logs attendance and progress, and facilitates communication between internship coordinators, students, and employers.
Industry-Recognized Credentials

Identifying and Encouraging High-Quality Credentials

Many states have developed or are developing state-approved IRC lists. Ten of the 15 states examined for this study currently have statewide approved IRC lists at the secondary level. Of the remaining states, two (Massachusetts, Nevada) are in the process of creating lists and three (Iowa, Montana, Nebraska) do not have lists. At least one state (Missouri) developed its list by using an existing list of state-approved technical skill assessments (TSAs) that were already offered in schools and districts.

The agencies responsible for creating and maintaining the lists vary by state, though state education and labor (or commerce) agencies are usually involved. All states use similar steps to develop their lists including defining which IRCs qualify for the list, collecting district and industry input, and conducting regular updates to the list.

The minimum criteria for an IRC to qualify for the list varies across states but generally cover four areas:

- **Industry recognized and valued**: Assessing industry value requires vetting by industry members or associations or a CTE industry advisory council (Nevada, New Jersey, South Dakota, Tennessee); documenting labor market information that presents a local or regional need for the occupation aligned with a credential (Florida, Kansas, Massachusetts, Missouri, Ohio); or a combination of both (Kentucky).

- **Accessible to high school students**: Access to credentials may be arranged by aligning them to secondary CTE courses and/or programs of study. IRCs selected should also be attainable by minors with limited work experience (Florida, Kansas).

- **Postsecondary articulation**: In some states, students can use IRCs earned in high school to earn postsecondary credits or hours that can be applied to degree or nondegree programs (New Jersey, South Dakota, Tennessee).

- **Transference to high-quality employment**: Some states examine whether the IRC is required to enter an above-entry-level occupation (South Dakota, Tennessee); is aligned with an occupation that yields a livable wage, as determined by the state (Kansas, Kentucky); or is aligned with occupations defined as high demand by the state commerce or labor department (Kansas, Louisiana, Ohio).

### Steps to create a state industry-recognized credential list

- Define a “valued” IRC and identify IRCs that fit the definition. Valuation criteria may include whether the IRC is required to enter an occupation or is aligned with a high-wage, high-demand industry or occupation. States use employer input and/or labor market information to determine whether the IRC meets these criteria.
- Collect district input on IRCs already offered using listening tours or a call for districts to submit lists of IRCs to a state agency.
- Learn what IRCs are valued by meeting with CTE advisory board members, connecting with the state labor or commerce department, or consulting employers and industry associations.
- Create crosswalks between IRCs and CTE courses or programs of study.
- Review and update the IRC list at least annually.
The details included on state IRC lists varies by state (Exhibit 3), reflecting state choices about which IRCs to include on the list. For example, CTE courses may be listed if the IRCs are aligned with secondary courses, while CTE clusters or Classification of Instructional Programs (CIP) codes may be listed if the IRCs are aligned at those levels. Additionally, the list might note the approved provider or issuing organization for an IRC if multiple providers of an IRC operate in that state.

Exhibit 3. Credential details included on state-approved industry-recognized credential lists

<table>
<thead>
<tr>
<th>The issuing organization or provider</th>
<th>FL</th>
<th>KS</th>
<th>KY</th>
<th>LA</th>
<th>MA</th>
<th>MO</th>
<th>NJ</th>
<th>NV</th>
<th>OH</th>
<th>SD</th>
<th>TN</th>
<th>VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>An associated state-level program code or Classification of Instructional Programs code</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>The associated career cluster(s)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>The associated career and technical education course(s)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Whether the industry-recognized credential is used as an end-of-course or pathway assessment</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Scores or sets of tests needed to pass the industry-recognized credential</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>How much the industry-recognized credential is worth toward graduation requirements</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Alignment of the industry-recognized credential with noneducation programs or designations</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>Cost of the industry-recognized credential exam</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

States incentivize and support IRC completion using four types of strategies:

- **Accountability measures**: Several states (Missouri, Ohio, Tennessee, Virginia) include indicators for the number of IRCs completed or the percentage of students completing state-approved IRCs on school or district report cards in their state accountability model. These data are listed on report cards separately from other career or college readiness metrics.
- **Curriculum requirements**: In some states (Louisiana, Montana, Ohio, South Dakota, Virginia), IRCs are required to earn credit in individual high school courses, completion of a CTE program of study, or completion of a career-related diploma pathway.
- **Guidance on how to proctor IRC exams**: Each IRC exam has unique requirements regarding who can proctor an exam and what equipment is needed. Some states (Florida, Virginia) provide guidance and workshops for schools on how to administer IRC exams onsite or, when the school cannot meet exam requirements, in partnership with local colleges.
- **Incentive funding**: States use monetary incentives to encourage districts and schools to promote state-approved IRC exams and fund the administration of those exams. Some (Florida,
Kansas) provide supplementary state education funds to districts or schools for every student with an IRC completion, while others (Nevada) reimburse exam costs for any approved IRC.

**Collecting and Verifying Data on Credentials**

States collect data on IRC participation and completion using two approaches. The first is through direct **contracts or agreements between vendors and state education agencies**. For example, Tennessee has memorandums of agreement with all but one vendor offering credentials on its state-approved IRC list. The vendors are expected to report data on credential attempts and completions directly to the state education agency. Even with direct reporting, certifying bodies may not collect enough data on students (e.g., first and last name, address, date of birth) to allow for an accurate match, limiting data utility. For example, Tennessee reports matching about half of the credential data to student data. On a smaller scale, South Dakota has a contract with one vendor, ACT, to administer and receive student data on the National Career Readiness Certification exam. Matching is not an issue in this case because, as the exam administrator, the state agency may identify exactly which students sign up for the exam.

States also receive student self-reported IRC data from schools and districts **through existing reporting systems**. In South Dakota, schools and districts will report IRC data to the state through their state transcript reporting system starting in academic year 2019–20 because IRCs are required for some types of diplomas. In other states, such as Kansas, aggregate IRC data is reported to the state for **Perkins IV accountability** reporting and for incentive-related reporting with their Excel in CTE program (see Appendix B: Kansas Case Study). Virginia provides a template for reporting IRCs. In all cases, schools document IRCs using state-determined IRC identification numbers or, in templates or online reporting, drop-downs with IRC names. This methodology decreases or eliminates work needed at the state-level to match IRCs reported by schools or districts to a central list of approved IRCs.

To collect the data, schools must track students’ IRC attempts and completions. Many schools can collect these data directly from vendors because the school proctors the exams and is responsible for passing on completion information to students. Some schools use informal student or alumni surveys to gather information on completions. In Kansas, where schools may receive monetary incentives for completions within six months of graduation, schools sometimes rely on alumni surveys to obtain completion information after students leave the school system. Students may also have to report their completions to fulfill course, program of study, or graduation requirements.

**While many states collect completion numbers, few have a formal verification process for IRC data reported by schools and districts.** Exceptions include Ohio, which asks districts and schools to store proof of completion for periodic state audits as a part of Perkins IV accountability monitoring. In Florida, districts submit virtual copies of completion certificates to the state education agency along with completion data reported each year in order to receive monetary incentive funds.
Promising Practices
Developing and implementing protocols and systems to ensure high-quality WBL and IRCs can be difficult. The data collected for this TA project indicate, however, there are some practices that can help both ease and justify this work.

Work-Based Learning

- **Quality WBL definitions help states ensure consistency**: States adopt definitions of quality WBL to set statewide standards for WBL programs of different types across varying locations.
- **Data collection systems help with WBL reporting**: States that successfully collect WBL data use formal systems and surveys to gather self-reported WBL data from LEAs, or they create WBL courses and track student WBL participation through transcript reviews.
- **Multiple tools provide access to WBL in rural areas**: Employer engagement in rural areas can be challenging, but schools, districts, and states have found new ways of keeping employers engaged across distances. This can include program advisory councils and business and industry committees that periodically visit a classroom to ensure it meets industry standards (such as happens in Simulated Workplace), or it can be a virtual connection through an online platform that allows instructors and students to engage with employers without the necessity of physical presence.
- **Technology can connect students to workplace experiences**: For students in rural areas, using simulation technology and labs can help them gain experience with situations and tools they may encounter in an employer workplace if one is not readily accessible. As with all CTE programs, instructors should engage employers (either in person or virtually) to ensure simulations and labs accurately represent a typical workplace environment in their area.

Industry-Recognized Credentials

- **Assign identification numbers to IRCs**: States use unique identification numbers to track approved IRCs and determine which are related to disparate programs of study or career clusters. An identification number saves the time of matching each IRC name entered by hand to a central list of approved IRCs.
- **Technical skill assessments can serve as a basis for a state IRC list**: States may begin with an existing list of state-approved TSAs to initially identify career-related exams offered across the state and determine which are aligned with IRCs.
- **Transparent criteria and processes for adding to the state IRC list**: Many states have clear, publicly documented criteria and processes for approval of IRCs. These explicit guidelines help streamline the approval process and assure all state agencies and industry professionals are aware of how IRCs may be added to the state-approved list.
- **Link IRC quality with a high-wage, high-demand job definition**: States define criteria for determining labor market alignment such as industry or occupation growth, number of job openings, average or median wages, whether an occupation is above entry level, and state indicators for job demand or growth.
- **Develop an incentive system to accompany the IRC list**: Every state interviewed created a way to incentivize or encourage IRC attainment at the school or district level. This aided in implementation of the approved IRC list in practice and stimulated participation on IRC exams.
Common practices include reporting IRCs for school accountability metrics separately from other postsecondary readiness measures and supporting schools financially by, at the minimum, paying for the administration of approved IRC exams.

- **Verify completions with virtual submissions**: States most commonly verify IRC data by requiring schools and districts to submit a virtual copy of IRC completion certificates. With this requirement, school staff must ask students for proof of completion for IRCs completed outside of the classroom.
Appendix A: Simulated Workplace in West Virginia

West Virginia has implemented its Simulated Workplace program statewide, and the program has been adapted for implementation in other states. This summary includes information on the instructional model, implementation processes in each state, employer engagement, data collection, and implementation costs.

Key points on Simulated Workplace

- Simulated Workplace provides access to WBL in rural areas because the program helps students build employability and technical skills without placement at an employer worksite.
- Costs for Simulated Workplace programs vary depending on the implementation strategy.
- Although Simulated Workplace does not require student placements at employer worksites, employers are involved at multiple levels including program planning and evaluation.

Simulated Workplace Instructional Model

The Simulated Workplace model transforms high school CTE classrooms into student-led companies operating under standard business practices as defined by 12 protocols (see text box). The protocols guide students through a set of exercises that introduce them to workplace culture and expectations while developing technical and employability skills. For example, one protocol instructs student supervisors on assigning tasks to their work teams and hiring and firing student workers. Participating students dress in uniforms, clock in, and complete projects using equipment that meets industry standards. The “companies” must meet business standards of productivity, quality, and financial performance.

Instructors serve as CEOs to oversee and assist with work, but students drive program activities to practice leadership skills. Students rotate through several roles over the course of the program through an interview process and are accountable to their peers for personal and company performance. Student companies may work on projects with real clients (e.g., community members, local chambers of commerce, businesses), and profitability is measured based on attendance, successful completion of tasks, and attainment of certifications.

State Implementation

West Virginia created the Simulated Workplace model in response to employer dissatisfaction with the work ethic of recent high school CTE graduates. According to employers, students graduating from CTE programs lacked employability skills, such as the ability to show up regularly and on time, to communicate and work in teams, and to pass mandatory drug tests.

The 12 Simulated Workplace protocols

1. Student-led companies
2. Project-based learning/student engagement
3. Formal attendance procedure
4. Drug-free work zones
5. Application/interview process
6. Company name and handbook for student employees
7. Company meetings
8. Safety training
9. Workplace teams
10. 5S continuous quality improvement
11. On-site business inspections
12. Accountability (data review, reporting, and technical assessments)
Program Implementation

- **Piloting**: The West Virginia Department of Education (WVDE) piloted the program in nine schools in school year 2013–14. After a second pilot with interested sites, WVDE implemented the program statewide in school year 2016–17 as the sole instructional model for CTE programs in the state (West Virginia state policies 2510 and 2520.13).

- **Buy-in**: A WVDE representative served on the governor’s workforce council during the Simulated Workplace pilot. The representative provided information on the program, led tours of pilot sites, and worked with local workforce investment boards to build local employer buy-in and awareness. This high-level engagement also raised program awareness and support.

- **Changes over time**:
  - Allowances for local programmatic modifications to enhance local relevance. Examples include flexibility in how attendance is tracked and modifications to the contents of students’ end-of-course portfolios to match industry needs.
  - Training and support for teachers and administrators on how to facilitate student-led companies.
  - Addition of NOCTI technical assessments to assess student’s technical knowledge and skills. To prepare students for the exams, instructors guide student work to cover necessary topics.
  - Introduction of a requirement that all participating students graduate with IRCs.

Employer Engagement

Employer involvement has been a key component to ensuring that simulated workplaces align with local skill needs in West Virginia.

- **Initial stages**: WVDE organized industry-specific advisory groups to identify workforce needs and business protocols and policies that became the basis for the goals and objectives of the Simulated Workplace initiative.

- **Ongoing support**:
  - **Business and industry reviews**: Teams of local employers visit classrooms to audit student companies for compliance with Occupational Safety and Health Administration (OSHA) standards, curricular goals, and fidelity to industry standards. If a classroom company is rated unsatisfactory, inspectors help students write an improvement plan. Ratings are captured in a statewide database and used by CTE administrators to offer professional development and training to help teachers strengthen their CTE programs.
  - **Capstone and portfolio reviews**: Employers serve on portfolio review panels. All students develop portfolios showcasing their learning experiences and growth, and seniors present these portfolios to the panel for feedback.

Costs

- Startup costs include providing professional development to teachers and administrators on the Simulated Workplace model, student uniforms, and school-based drug testing.
Data Collection and Reporting

The Simulated Workplace initiative is still new, but WVDE staff shared initial indicators of student outcomes that suggest that the program is on track to ensure that more graduates of West Virginia public schools are prepared for the workforce.

- **Student outcomes:**
  - Completers: The number of CTE completers has increased by 2,000 students in the last year.
  - Simulated Workplace completers have about a 91% positive placement rate. Most go into higher education, followed by employment, then military.
  - In school year 2018–19, 98.6% of Simulated Workplace students pass their first random drug test (up from 94% when piloting began).

- **Student survey:** 97% of students approve of Simulated Workplace.
  - Students feel engaged in and accountable for their own education.
Appendix B: Industry-Recognized Credential Case Studies

Kansas

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<td>• Standard Occupational Classification and CIP codes</td>
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<td>• Whether the IRC is used as an end-of-course or pathway assessment</td>
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<td>• Occupation</td>
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<td>• Average annual wages</td>
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**Highlights**

- The Excel in CTE program provides state education funds to districts for each student who completes an IRC. Senate Bill 155 allocated funding and established the process to create a qualifying credential list that includes about 25 credentials.
- Kansas maintains a statewide list of thousands of credentials that can be used for Perkins IV reporting.
- Schools self-report IRC completions and are required to maintain proof of IRC completions for the Excel in CTE program in the form of hard copy or virtual completion certificates.

**Excel in CTE credential list development**

**Step 1:** In-demand occupations are identified by the Kansas Department of Labor (KDOL) using the following criteria:²

- Occupations must have an overall demand score between 10 and 30. This score is developed by KDOL based on job vacancy, short- and long-term job projections, and wage data.³
- Occupations must require at least a high school diploma.
- High school students must have access to courses leading to an IRC for the occupation.

**Step 2:** IRCs are selected for the state-approved list based on

- professional requirements for the qualifying occupations, such as age limitations (e.g., completion must be feasible during high school or within six months of graduation);
- whether high school and/or postsecondary CTE programs offer courses to prepare students for the IRC; and
- consultations with industry representatives to determine which credentials are meaningful for an occupation.

The credential list is reviewed annually and approved by the Kansas Technical Education Authority and Kansas Board of Regents.

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Incentives

- Through the Excel in CTE program, districts receive $500 per student who earned a credential received during high school or within six months of graduation. The money is intended to, in part, cover the cost of the credential exam paid for by the school.
- The program offers postsecondary tuition reimbursements to high school students who concurrently enroll in approved postsecondary CTE programs.

Data collection

- Districts are required to maintain records, virtual or hard copy, of qualified certifications earned by their students.
- Within six months of high school graduation, the district will submit the list of students earning certifications as well as virtual copies of the certifications earned to the Kansas Department of Education using an Excel file template. The list is used to determine the incentive dollars to be paid to the district.
Missouri

State list development

- MDOE developed the IRC list from an existing technical skills assessment (TSA) list. Educators from comprehensive high schools and career centers reduced the list to about 80 IRCs based on industry value. For example, some SkillsUSA exams were excluded because they had no value to industry.
- Credentials must be required to enter an occupation in order to be added to a list. For example, a pharmacy credential is not needed to become a pharmacist, so it cannot be included on the list. Around five or six IRCs are added each year.
- Applications for new or revised IRCs (i.e., new vendors or exam combinations) are accepted in March through June each year. Schools are notified of new IRCs in October of each year.
- The application requires schools to work with industry to determine if the credential is valuable. Application components include
  - the number of schools using the assessment;
  - national industries that recognize the credential;
  - CTE programs the IRC aligns to; and
  - required IRC assessment components.
- Applications must be submitted by a Missouri public school district or charter school administrator using a state-developed template.

State IRC list components

- An associated state-level code or CIP code
- Whether the certification counts as an end-of-course or pathway assessment
- Whether the certification is a TSA or an IRC
- Specific criteria or levels necessary to be considered proficient on an IRC
- Organization administering the exam
- Date when IRC will be allowed to count for reporting

Highlights

➢ The Missouri Department of Education (MDOE) defines an IRC as “a portable, recognized credential that validates an individual has successfully demonstrated skill competencies in a core set of content and performance standards in a specific set of work-related tasks, single occupational area, or a cluster of related occupational areas.” (Source)
➢ IRC completion data is reported as part of the state accountability system. Only those IRCs which appear on the state-approved IRC list may count towards the accountability metrics.

4 See https://dese.mo.gov/college-career-readiness/career-education/technical-skills-attainment-industry-recognized-credential.
School staff may consult with vendors or business and industry partners to assure the accuracy of information, but industry members may not apply.

- All applications are reviewed by a team of CTE experts, consisting of the IRC Review Committee (12 career center and comprehensive high school leaders) and the CTE Advisory Council (industry members). If there are differences of opinion, the CTE advisory council has final say.

- Starting in 2018–19, the IRC list was aligned to the American Council on Education postsecondary credit review, enabling secondary students to receive articulated postsecondary credit for IRC completion. The alignment did not change the credentials included on the list but added a designation on the IRC list for each qualifying credential.

Incentives

- The Missouri school accountability system includes an indicator for IRC completion on district report cards. Districts report the number of graduates who score proficient on any IRC assessment approved by MDOE.

- Graduating high school students may receive a CTE certificate as a supplement to their diploma if they meet certain academic and technical requirements, including completion of an IRC or TSA.

Data collection

- IRC data is reported separately from TSA data because only TSA data is used for Perkins reporting. IRC completion is used for accountability reporting.

- Schools are responsible for collecting IRC completion data from students and reporting it to the state using unique state-assigned codes for each IRC.

- The state does not directly monitor or validate the accuracy of IRC reporting. Since IRCs are not part of Perkins reporting, they are not reviewed in Perkins data monitoring visits.

- Student IRC completion is reported to the state aggregated by IRC, rather than at the student level.

- In accordance with state policy, student completion of IRCs is determined by industry-provided cut scores, national industry norms, or a bundled assessment score. If none of these apply, the student must meet or exceed 65% to pass the assessment. Some IRCs require multiple exams to reach this bar, such as a knowledge and a performance assessment.

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6 See https://dese.mo.gov/quality-schools/mo-school-improvement-program/msip-5.
South Dakota

**Highlights**

- The South Dakota Department of Education (SDDOE) maintains an IRC list for secondary CTE reporting and for graduation requirements.
- The ACT National Career Readiness Certificate (NCRC) is listed as a qualifying IRC for all pathways.
- Data on IRC completion is collected by schools and, starting in academic year 2019–20, will be reported to the state as part of transcript data.

**State list development**

- SDDOE developed its IRC list by asking state CTE advisory committees to identify IRCs with industry value.
- IRCs on the list must meet four criteria:
  - Industry recognized and valued, including vetting by a career cluster industry advisory council
  - Aligned to a CTE course and/or program of study (apart from the NCRC)
  - Transferrable as postsecondary credits or hours
  - Transferable to high-quality employment, measured as job opportunities above entry-level positions
- Schools can apply to have new credentials added to the list by emailing an application to an SDDOE employee by October 1 of each year. New credentials accepted to the list are posted online by December 1 of each year.
- The application asks for information, such as
  - Test site information;
  - Related teaching aids; and
  - Whether special accommodations to student test takers are allowed.
- Since the application requires extensive research and documentation on an IRC’s industry value, completed applications generally mean that the IRC will likely qualify for the list. SDDOE has never turned down a school request to add an IRC but has turned down requests from outside organizations.
- The applications are reviewed first by SDDOE, then by the CTE advisory committees; each committee has its own review criteria.

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8 See “Request a New Industry Recognized Credential on State Approved List” at https://doe.sd.gov/cte/industry.aspx.
Moving forward, SDDOE is planning to trim the IRC list by aligning it with lists available through the South Dakota Department of Labor for the Workforce Innovation and Opportunity Act.

**Incentives**

- IRCs are not reflected in the state education accountability system.
- An IRC is required for a career-related diploma pathway, called the South Dakota High School Graduation Advanced Career Endorsement. Any credential on the approved list that is aligned to the career cluster of the student’s CTE program may count toward this graduation pathway. The NCRC is an exception because it may count towards the requirement for any student, regardless of their CTE pathway.
  - While an apprenticeship is not considered an IRC, completion of an apprenticeship can be used to meet the IRC graduation requirement for the Advanced Career Endorsement.
- Some CTE courses require an IRC for course completion.  
- SDDOE provides guidance on including IRC completion on a student’s transcript. The transcript must note the specific IRC earned for students receiving the Advanced Career Endorsement; it is optional, but suggested, for other students.

**Data collection**

- IRC completion data is currently entered manually by school or district administrators through the state’s Perkins IV data reporting portal for each student who has taken a CTE course. This portal allows schools to enter multiple certifications to a student record. IRCs are reported at the career-cluster level, in accordance with the requirement that IRCs align with students’ career clusters.
- Starting in academic year 2019–20, each approved IRC will have a unique code, and districts will report IRCs through the state’s transcript data collection, which is conducted using Excel files. Previously, this data was entered through the Perkins data reporting portal and added retroactively to student transcripts.
- SDDOE does not have a data validation process for most IRC reporting, though school administrators are expected to validate the data submitted. SDDOE believes reporting is accurate because districts have no incentive (e.g., accountability, funding) to inflate their numbers or misreport IRC completions.
  - The exception is NCRC because SDDOE has a state-level contract to administer, fund, and manage all administration of this exam. As a result, SDDOE receives NCRC completion data directly from ACT.

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9 See [https://doe.sd.gov/cte/industry.aspx](https://doe.sd.gov/cte/industry.aspx).
12 See [https://doe.sd.gov/cte/data/documents/Course-Data-Validation.pdf](https://doe.sd.gov/cte/data/documents/Course-Data-Validation.pdf).