2018–19 OCTAE Customized Technical Assistance to States
Final Summary Report for the North Dakota Department of Career and Technical Education

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U.S. Department of Education

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Background
The U.S. Department of Education’s Office of Career, Technical, and Adult Education (OCTAE) sponsors customized technical assistance (TA) for states and other entities that receive funding through the *Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV)* annually. The program supports career and technical education (CTE) data collection and improvements in state capacity to report on CTE data. RTI International works directly with each state or entity to provide TA on behalf of OCTAE.

In 2018–19, the North Dakota Department of Career and Technical Education (NDDCTE) requested TA to examine work-based learning (WBL) and industry-recognized credential (IRC) data collection and implementation. NDDCTE requested assistance on these topics to inform its *Strengthening Career and Technical Education for the 21st Century Act (Perkins V)* planning process and accountability reporting. This report presents the TA findings answering the following questions:

1. How do states identify quality IRCs and encourage IRC completion over technical skill assessments?
2. How do states define quality WBL and how is it implemented in rural areas?
3. How do states collect and validate data on WBL and IRCs?

Technical Assistance
To address the above questions, the TA team conducted a document review of IRC and WBL programs, policies, and data collection in 17 states: Alabama, Florida, Iowa, Kansas, Kentucky, Louisiana, Massachusetts, Missouri, Montana, Nebraska, Nevada, New Jersey, Ohio, South Dakota, Tennessee, Virginia, and West Virginia (see Exhibit 1). The document review focused on efforts at the secondary level. The team conducted interviews with six states (Kansas, Kentucky, Missouri, Ohio, South Dakota, Tennessee) to fill in missing information and clarify program details. RTI provided NDDCTE with a supplementary document containing examples of state-approved IRC lists from states (Florida, Kansas, Kentucky, Louisiana, Massachusetts, Missouri, Nevada, New Jersey, Tennessee, Virginia) for which the full lists were available.
Following a webinar by the TA team that summarized interim findings, NDDCTE requested additional information on IRCs and WBLs in five of the states. In response, RTI drafted case studies of IRC policies in Kansas, Missouri, and South Dakota and of simulated WBL in Alabama and West Virginia (included in Appendices A and B). RTI also arranged conference calls between NDDCTE and staff in Alabama and West Virginia to share best practices and allow the state team to ask follow-up questions.

NDDCTE also expressed interest in learning more about current WBL opportunities offered by districts in North Dakota and supplied contact information for 14 schools and districts. The recommendations were selected to include districts of differing sizes and geographic areas. RTI interviewed two local education agency (LEA) staff members about WBL implementation, structure, successes, and barriers. The availability of local staff for interviews was low due to the timing of interview requests close to the end of the academic year. RTI has suggested NDDCTE reapply for TA in the 2019–20 year to finish gathering data around this request. The interviews provided the basis for case studies in the WBL section of this report.
Key Findings

Industry-Recognized Credentials

➢ At the secondary level, focus on industry certifications: State IRC lists for secondary education typically focus on third-party industry certifications available to minors because high school students are often ineligible for licenses and apprenticeships due to age or work experience requirements.

➢ State-approved IRC lists are developed with cross-sector input: State IRC lists are living directories of IRCs 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 completion 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

➢ Maintain quality elements in the state definition of WBL: While statewide definitions of WBL vary in accordance with state priorities, most state-level quality criteria emphasize real-world experience and hands-on skill building. North Dakota has an existing definition of quality WBL that draws on these common elements and can leverage this definition in future WBL expansion and data collection efforts.

➢ Collect data on WBL participation using one of two promising strategies: Data on WBL participation and completion is collected through self-reported data from students and teachers gathered by LEAs or through student transcripts using dedicated WBL course numbers collected by the state through transcripts. In the latter case, states typically have standards for WBL courses that include learning objectives addressing employability skills and strategies for documenting and assessing work-ready skills.

➢ Use alternatives to worksite placements 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. Alabama and West Virginia have implemented a simulated workplace model that mimics the work environment in the classroom and provides opportunities for students to connect with employer advisors.
Industry-Recognized 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 for 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, but state education and labor (or commerce) agencies are usually involved. All states use similar steps to develop their lists including defining criteria for determining 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, associations, or CTE industry advisory councils (Nevada, New Jersey, South Dakota, Tennessee); labor market information documenting 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:** IRCs selected should be attainable by minors with limited work experience (Florida, Kansas). Access to credentials may also involve aligning them to secondary CTE courses and/or programs of study.

- **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 occupation at a level above entry level (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). The details included on state IRC lists varies by state (Exhibit 2), reflecting state choices about which IRCs to include on the list. For example, CTE courses may be listed if IRCs are aligned with secondary courses, while CTE clusters or Classification of Instructional Programs

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**Steps to create a state IRC 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.
(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 2. Credential details included on state-approved industry-recognized credential lists

<table>
<thead>
<tr>
<th></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>The issuing organization or provider</td>
<td>x</td>
<td>x</td>
<td>x</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>
</tr>
<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>
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<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>
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<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>
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<tr>
<td>Whether the industry-recognized credential is used as an end-of-course or pathway assessment</td>
<td>x</td>
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<td>x</td>
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<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>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Cost of the industry-recognized credential exam</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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Incentivizing Student Credential Attainment

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. Starting in academic year 2019–20 in South Dakota, schools and districts will report IRC data to the state through the state’s transcript reporting system. This will make it easier to report IRC completions as fulfillment of a graduation requirement for the state’s career diploma option. 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 its Excel in CTE program (see Appendix A: Kansas Case Study). Virginia provides districts a template for reporting IRCs. In all states, schools report IRCs using state-determined IRC identification numbers or, in states using templates or online reporting, drop-down menus with IRC names. This methodology decreases or eliminates work needed at the state level to match IRCs reported by schools or districts to those on the state IRC list.

To collect the data, schools must track students’ IRC attempts and completions. Schools serving as exam proctors can collect these data directly from vendors. Other schools use student or alumni surveys to gather information on completions. Some schools in Kansas, which provides schools monetary incentives for certain IRC completions within six months of graduation, 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 formal verification processes 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. Overall, states report minimal inaccuracies in IRC self-reports from districts. Kentucky, for example, only found one instance of an invalid IRC report (i.e., the school could not produce evidence of the completion) in an audit of 150 school districts across the state.

Credential data collection at the postsecondary level

The National Student Clearinghouse is working with colleges, credential vendors, and Bureau of Labor Statistics staff to develop a database that connects postsecondary student data to credential completion and labor market outcome data. This project will likely yield a repository of matched student data in the next three years.
Work-Based Learning

Twenty-eight states have adopted formal, state-level definitions of WBL. Definitions vary from simple descriptions of which experiences count as WBL in a state to detailed statements of the purpose, evaluation criteria, and desired outcomes of WBL. For example, Florida’s definition of WBL falls in the former category: “WBL includes a combination of supervised student-centered instruction and work-based job experience. Students in these work-based learning programs must be paid for their on-the-job work experience.”

Few states have detailed definitions that outline criteria for quality; as an alternative, some states opt to include quality criteria in state-issued WBL manuals and other guidance documents. Some national organizations such as Advance CTE and the Association for Career and Technical Education also offer standards for measuring quality in definitions of WBL. While quality criteria in definitions and guidance vary across states, there are common elements such as

- hands-on applications of learning;
- alignment with student goals and career plans;
- exposure to different career options and pathways;
- connections to industry and real-world experiences and skills;
- preparation and support for students, teachers, and employers;
- student growth and skill gain assessment; and
- guided reflection activities for students.

North Dakota’s current definition of quality WBL (see text box) was published in 2014 as a part of a WBL manual created through the state’s Succeed2020 initiative. This definition incorporates several of these quality elements: alignment to student career goals and plans; career exploration and exposure; preparing and supporting students, teachers, and employers; and participating in guided reflection. The definition also features quality components found in relatively fewer WBL definition such as objectives-based learning; alignment to state and/or industry standards; and collaboration between education and industry.

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States collect data on WBL in two ways:

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

- **Course enrollment–based data** is collected through WBL course numbers. To receive credit for WBL, students are required to enroll in a WBL course. States including Florida, Tennessee, and West Virginia either have WBL courses open to CTE and non-CTE students or courses limited to students enrolled in specific CTE pathways or career clusters. For example, high school students in Tennessee can use the WBL: Career Practicum Course to substitute for advanced coursework in any program (CTE or non-CTE).

**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. To combat these barriers, states have come up with alternative methods to offer WBL experiences:

1. **Simulated workplaces**: Through simulated workplaces, the CTE classroom emulates workplace practices such as interviewing and hiring and 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 NDDCTE’s request, a case study providing more detailed information on Simulated Workplace in Alabama and West Virginia is available in Appendix B.

2. **Simulation tools or labs**: Some schools and programs in rural areas use simulation equipment to replicate workplace experiences in school settings. 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.

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 students with employers virtually (see text box). 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 connecting 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.
Local Work-Based Learning Implementation in North Dakota

At the request of NDDCTE, the TA team met with representatives from two school districts in North Dakota to discuss WBL, obstacles schools and districts face in implementing WBL programs, and resources districts could use to overcome these barriers. Exhibit 3 outlines some high-level findings from conversations with district staff.

Exhibit 3. Information from school district interviews on existing work-based learning (WBL) practices

<table>
<thead>
<tr>
<th>School district</th>
<th>Grand Forks</th>
<th>Minot</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing WBL</strong></td>
<td>District staff view WBL as a pyramid, with a base of activities related to career awareness and a tip of paid internships in a students’ field of interest. The goal is to get as many students as possible to the tip of the pyramid.</td>
<td>Students in Minot have access to WBL opportunities ranging from in-school career days to off-site job shadows and internships. Starting in 9th grade, students can participate in a job shadow every semester. In 10th grade they can do a summer internship. Minot is just starting a program for 12th grade students to do internships during the school year. These opportunities are open to all students, not just career and technical education students.</td>
</tr>
<tr>
<td><strong>Best practices</strong></td>
<td>Grand Forks offers students a wide variety of WBL opportunities and tries to identify opportunities that will have the best impact on the most students, such as career fairs and job shadowing. It is also good at disseminating information about WBL to students and parents through newsletters and career center events in the high schools.</td>
<td>Minot leverages the members of its 13 program advisory committees to create internship opportunities for students. It also pays school administrators and counselors for summer work overseeing summer internships and managing relationships with employers.</td>
</tr>
</tbody>
</table>
| **Barriers to immersive WBL (internships, etc.)** | - Age restrictions (related to employer insurance and liability)  
- Not enough employers hosting internships in fields with high student interest | - Age restrictions (related to employer insurance and liability)  
- Transportation issues for students  
- Difficult to place students in medical and legal fields; medical placements are often given to local college students first, and there are confidentiality issues related to placing students in legal positions |
| **Plans and needs for program improvement** | Grand Forks is interested in materials provided by the North Dakota Department of education (NDDCTE) that staff could customize for customize for outreach to community partners (e.g., Q&A sheet, lists of resources, templates for agreements with Minot staff members are interested in improving their WBL program by requiring all students to participate in job shadows, However, they do not think this would be possible due to a lack of local employers. |
Additionally, Grand Forks would like NDDCTE to help educate statewide industry organizations on school collaboration, including information on liability issues.

| Knowledge of Succeed2020 WBL manual | Not aware of the manual. | Aware of the manual, but WBL programs were in place before it came out. Minot used the manual to fine-tune its WBL approach. |
Promising Practices
States use a variety of strategies to assure and support quality IRC attainment and WBL opportunities. The research summarized for this TA project suggests promising practices conducted across multiple states.

Industry-Recognized Credentials

- **Begin brainstorming IRCs by cataloguing TSAs currently offered:** States may identify career-related exams already offered in LEAs to start a state IRC list. For example, some programs of study may already have identified quality IRCs to use as TSAs that align with coursework.

- **Refine the state IRC list in partnership with industry partners:** After determining which IRCs are aligned with CTE courses and programs, most states consult industry councils, associations, or professionals to assure that the IRCs chosen for the list are of value to industry.

- **Identify IRCs aligned with state or local labor market needs:** States define criteria for determining whether IRCs are aligned with labor market needs. For example, states look for whether the IRC is aligned with a job or industry that has high growth, current or future expected job openings, and/or high average or median wages. In some cases, states also consider whether the IRC leads to a job that is above entry level or, if available, reference state department of labor lists of high-wage, high-demand occupations when determining alignment.

- **Determine transparent criteria and processes for adding to the state IRC list:** Explicit criteria and processes for the approval of IRCs help streamline the approval process. Making these criteria public may also assure that all state agencies, LEAs, and industry professionals understand how the state-approved list is developed and refined over time.

- **Assign identification numbers to IRCs:** Districts use the identification numbers when they report the credentials earned by their students to the state, rather than credential names, which are longer and pose a greater risk of data entry errors.

- **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.

- **Develop a system to incentivize IRCs on the state list:** Every state interviewed used incentives to aid in implementation of the approved IRC list and stimulate student participation on IRC exams. Promising practices include incorporating IRCs into accountability metrics as a career readiness measure and offering monetary incentives such as payment for the administration of approved IRC exams.

Work-Based Learning

- **Quality WBL definitions help states ensure consistency:** States adopt definitions of quality WBL to set statewide expectations for WBL programs of different types across varying locations.

- **Data collection systems help with WBL reporting:** States collect WBL data by using surveys or other reporting tools to gather self-reported WBL data from LEAs or by creating WBL courses and tracking student WBL participation through transcript data.

- **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. These include employer visits to classroom-based activities to assess
their adherence to industry standards (such as happens in Simulated Workplace), or online platforms that allow instructors and students to engage with employers virtually.

- **Technology can connect students to workplace experiences:** In rural areas, simulation technology and labs can help students gain experience with workplace situations and tools in the classroom. As with all CTE programs, instructors should engage employers (either in person or virtually) to ensure simulations and labs accurately represent the workplace environment.
Appendix A: Industry-Recognized Credential Case Studies

Kansas

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.

State IRC list components

- Issuing organization or provider
- Associated career cluster
- Standard Occupational Classification and CIP codes
- Whether the IRC is used as an end-of-course or pathway assessment
- Occupation
- Average annual wages

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Incentives

- Through the Excel in CTE program, districts receive $500 per student who earned a credential 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, districts 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

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 that appear on the state-approved IRC list may count towards the accountability metrics.

State list development
- MDOE developed the IRC list from an existing 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.
  - School staff may consult with vendors or business and industry partners to assure the accuracy of information, but industry members may not apply.

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

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4 See https://dese.mo.gov/college-career-readiness/career-education/technical-skills-attainment-industry-recognized-credential.
• 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

• Only TSA data is used for Perkins reporting. IRC completion is used for accountability reporting and collected separately.
• 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 a score of 65% to pass the assessment. For some IRCs, the exams are administered in multiple parts, and the student must pass all parts to have a completion.

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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.
  o 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.⁹
• SDDOE provides guidance on including IRC completion on a student’s transcript.¹⁰ 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.¹¹ 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.¹² SDDOE believes reporting is accurate because districts have no incentive (e.g., accountability, funding) to inflate their numbers or misreport IRC completions.
  o 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.
¹⁰ See http://doe.sd.gov/octe/documents/IRC-Directions.docx.
¹² See https://doe.sd.gov/cte/data/documents/Course-Data-Validation.pdf.
Appendix B: Simulated Workplace in West Virginia and Alabama

Simulated Workplace was created in West Virginia and has since been adapted for implementation in other states, including Alabama. West Virginia and Alabama are the only states currently implementing the model at the state level. This summary document 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 and Alabama introduced 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.
Program Implementation

West Virginia

- **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.

Alabama

- **Investigation**: During West Virginia’s pilot period, Alabama sent a delegation of state and local CTE leaders and instructors to observe Simulated Workplace programs in West Virginia.
- **Buy-in**: This program was a priority of a former superintendent of education. The Alabama State Department of Education (ALSDE) leveraged industry input and pressure (by recruiting the support of advisory councils, and encouraging visits to West Virginia’s program, etc.) to get state-level support to fund the program.
- **Piloting**: Began in 2015 with 10 sites given the freedom to determine how best to phase in Simulated Workplace over three years.
  - Some sites chose to phase in a few of the “12 Protocols” each year. Others began with protocols that mirrored practices that their classes/facilities had implemented (e.g., formal attendance procedures) prior to Simulated Workplace and worked up to more difficult protocols.
- **Growth**: Introduced the program to 50 CTE centers (10 per year since 2015). Simulated Workplace will be implemented in all of Alabama’s CTE centers by 2021.
- **Changes over time**:
o ALSDE hosts a conference for instructors and administrators to offer information and training on Simulated Workplace and provide an opportunity to share lessons learned across sites.

o Starting in school year 2018–19, ALSDE staff reviewed the experience of schools from the pilot cohort to learn about the implementation process and glean lessons learned.

Employer Engagement

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

- **Initial stages:** WVDE and ALSDE 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 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

- WVDE’s startup costs included providing professional development to teachers and administrators on the Simulated Workplace model, student uniforms, and school-based drug testing.

- ALSDE provides a $50,000 grant to each school to cover conversion costs in the first year. By the end of the program, this will add up to over a $3 million investment.
  - Schools used conversion funds to convert classroom spaces and to purchase equipment and personal protective equipment for students.

Data Collection and Reporting

The Simulated Workplace initiative is still new, and data collection metrics and processes are still in development. ALSDE does not yet collect any data on Simulated Workplace beyond what is required for Perkins. 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.

- **West Virginia 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).
• **West Virginia student survey:** 97% of students approve of Simulated Workplace.
  - Students feel engaged in and accountable for their own education.

**Summary of Information from State-to-State Calls**

During facilitated calls with representatives from WVDE and ALSDE, NDDCTE staff had the opportunity to gather more detailed information and ask specific questions about Simulated Workplace implementation, outcomes, and barriers in each state. Exhibit 4 shows the questions asked and responses gleaned from the interviews with each state.

Exhibit 4. Summary of information gathered during state-to-state calls with North Dakota Department of Education staff

<table>
<thead>
<tr>
<th>How was Simulated Workplace chosen?</th>
<th>West Virginia</th>
<th>Alabama</th>
</tr>
</thead>
<tbody>
<tr>
<td>(West Virginia)</td>
<td>West Virginia created Simulated Workplace after hearing from business and industry that they were struggling to connect students to the workplace due to a lack of student preparedness. Simulated Workplace allows students to gain technical skills and employability skills such as timeliness and leadership.</td>
<td>Alabama’s former state CTE director had worked with West Virginia in the past and knew of Simulated Workplace. Since the two states had similar contexts, and the model had been successful in West Virginia, Alabama decided to implement it as well. Alabama was expanding the number of CTE centers at the time and needed a structure to use for those new centers; Simulated Workplace fit its needs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Did Simulated Workplace implementation begin at the school level or at the program or instructor level?</th>
<th>West Virginia</th>
<th>Alabama</th>
</tr>
</thead>
<tbody>
<tr>
<td>(West Virginia)</td>
<td>Simulated Workplace began as a program-level pilot at 7 career and technical education (CTE) centers. The program expanded based on the success of these pilots and is now the statewide method for work-based learning (WBL) delivery.</td>
<td>In the beginning, the Alabama State Department of Education (ALSDE) focused on training staff in health care programs, but this did not work well because of staff turnover rates. It now trains the entire staff (including school leadership) and lets the schools decide which classes to convert first. Each school creates a strategic plan that identifies three Simulated Workplace protocols to focus on implementing in the first year. Once those are implemented, the school adds more; full Simulated Workplace implementation takes about three years.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is Simulated Workplace only offered in career centers or also in comprehensive high schools?</th>
<th>West Virginia</th>
<th>Alabama</th>
</tr>
</thead>
<tbody>
<tr>
<td>(West Virginia)</td>
<td>Simulated Workplace in West Virginia began in career centers and has now expanded to comprehensive high schools. This transition was difficult because teaching practices and scheduling had to change to accommodate program features, such as student facilitated learning.</td>
<td>Simulated Workplace is offered at comprehensive high schools and CTE centers, which serve small districts. Since Simulated Workplace is not a curriculum, it can be applied to existing curricula in settings both within and outside of CTE. ALSDE has even expanded Simulated Workplace into a middle-grades gifted</td>
</tr>
<tr>
<td>Topic</td>
<td>West Virginia Department of Education (WVDE)</td>
<td>Alabama</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>As a next step, the West Virginia Department of Education (WVDE) plans to start offering Simulated Workplaces at the middle school level.</td>
<td>program and a pre-kindergarten program.</td>
<td>Alabama left the decision to have Simulated Workplace students participate in drug testing to districts. ALSD encourages programs to at least simulate drug testing so students are aware of the process. Districts that participate in drug testing for Simulated Workplace usually already use it for student participation in extracurricular activities (e.g., sports, career and technical student organizations). If students test positive for drug use, districts provide resources to help them.</td>
</tr>
<tr>
<td>Was there any parent or district pushback regarding Simulated Workplace’s drug testing requirement?</td>
<td>WVDE initially received pushback from parents and teachers, but not students, regarding the drug testing requirement for students. Teachers worried about what to do with students who tested positive, but now have tools to get students the help they need. These students are not thrown out of class, and parents of Simulated Workplace students have expressed gratitude for the drug testing requirement as an added safeguard for tracking students’ drug use.</td>
<td>No. Alabama left the decision to have Simulated Workplace students participate in drug testing to districts. ALSD encourages programs to at least simulate drug testing so students are aware of the process. Districts that participate in drug testing for Simulated Workplace usually already use it for student participation in extracurricular activities (e.g., sports, career and technical student organizations). If students test positive for drug use, districts provide resources to help them.</td>
</tr>
<tr>
<td>Will your state be using WBL as its Perkins V quality indicator? If not, what are you using and why?</td>
<td>Yes. Currently 90% of WBL opportunities are simulated, and WVDE’s concentrator target for this indicator will be 100%. To measure quality across programs, WVDE uses NOCTI technical skills assessments. Additionally, NOCTI has recently developed an assessment to measure soft skill gain through Simulated Workplace.</td>
<td>No. Alabama will use the industry-recognized credential (IRC) indicator. Alabama is doing a combined Workforce Innovation and Opportunity Act (WIOA)/Perkins state plan, and only the IRC indicator aligns with WIOA indicators and can be measured across programs. Alabama also chose not to use WBL as an indicator because it does not certify Simulated Workplace programs and wants to maintain the program’s status as an option for districts to enhance program quality.</td>
</tr>
<tr>
<td>If you were to start over with Simulated Workplace implementation, what would you do differently?</td>
<td>Nothing. Over time, WVDE has made changes and additions to Simulated Workplace in response to feedback from schools and instructors. Teachers and students have the freedom to determine how best to implement Simulated Workplace for their program.</td>
<td>First, Alabama earmarked $50,000 for each CTE center to implement Simulated Workforce but found $10,000 adequate to cover staff training costs and some new equipment if needed. Second, ALSDE would have schools or centers identify and work with a local employer champion to help them guide their decision-making and goal-setting process.</td>
</tr>
<tr>
<td>What have been the biggest obstacles to implementing</td>
<td>Changing traditional educational thinking and practices. School administrators and instructors needed to see Simulated Workplace in this light.</td>
<td>First, misunderstanding what Simulated Workplace is. Teachers initially pushed back, thinking it was a new curriculum and would add to their workload. ALSDE</td>
</tr>
<tr>
<td><strong>Simulated Workplace? How have you overcome them?</strong></td>
<td>Workplace in action to understand its purpose and promise.</td>
<td>had to spend more time than expected on educating instructors on the model’s content and use. Second, educating instructors on the importance and purpose of having students apply for places and positions in Simulated Workplace programs. The application process is important to gain student buy-in.</td>
</tr>
<tr>
<td><strong>Any advice for a state trying to implement Simulated Workplace?</strong></td>
<td>Start small and scale up over time. The best place to start is with schools, instructors, and employers willing to buy in to the system. Additionally, learn and make changes as you implement.</td>
<td>Find an external organization to help develop the training curriculum. ALSDE works with the Southern Regional Education Board to provide the technical assistance and training to centers and schools implementing Simulated Workplace.</td>
</tr>
</tbody>
</table>