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REPORT

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INVESTING IN THE FUTURE WORKFORCE:

WHY MISSOURI SHOULD HAVE AN IRC BONUS PAY PROGRAM

By Abigail Burrola

KEY TAKEAWAYS

- Employers report that they struggle to fill open positions because they are unable to find skilled workers in Missouri.
- There is a comprehensive career and technical education (CTE) program in Missouri, but obtaining the credentials needed by students once they leave high school is not prioritized.
- Industry-recognized credentials (IRCs) can improve high school students' chances of accessing a career directly after graduation and obtaining them should be encouraged.
- Paying bonuses to districts and teachers for the completion of IRCs has dramatically increased IRC attainment in other states and might work in Missouri as well.

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BY PROMOTING MARKET SOLUTIONS
FOR MISSOURI PUBLIC POLICY

INTRODUCTION

Nationwide, there is a gap between job openings and workers qualified to fill those jobs. The Bureau of Labor Statistics (BLS) released data for August 2018 indicating that there were 6.4 million job openings compared to 5.9 million hires.[1] These unfilled jobs are vacant, in part, because of a lack of qualified applicants.[2] Labor shortages are a nationwide challenge, but they are especially prevalent in the Midwest. In April 2018, available jobs exceeded job applicants by 20 percent in the Midwest, almost three times the national rate of 7 percent.[3] Missouri suffers from a skills gap in the workforce even as jobs are expected to increase by about 220,000 from 2016 to 2026 in the state.[4] The workforce may not be able to keep up with the anticipated job expansion, leaving many jobs unfilled and economic opportunities squandered. Since 2017, the rate of job openings in the state has been trending upward and the hiring rate has been trending downward; 2018 ended with 67,000 more job openings than hires.[5]

Missouri needs to shrink the statewide skills gap, and one way to do that is to make sure that high school students are equipped to begin a career after graduation. Unfortunately, according to the Missouri Department of Elementary and Secondary Education (DESE), in 2017 of the 90 percent of students who graduated from high school, just 42.5 percent of them met the DESE-determined college or career readiness benchmark.[6] That means half of our high school graduates are unprepared for what's next. CTE offerings in Missouri are intended to prepare students for a career path after high school, but thus far they have not succeeded in filling the skills gap.

This report will focus on just one policy that could reduce the skills gap: increasing the number of high school students who graduate with an IRC. IRCs are certifications or credentials that are earned by passing an exam created by an industry group, such as Automotive Service Excellence exams. Employers in many, although not all, career or technical fields look for IRCs during the hiring process as a signal that applicants have the work skills they need. In many well-paying jobs, such as a Certified Nursing Assistant, an IRC is an absolute requirement.

Only about 3 percent of Missouri high schoolers graduated with an IRC in 2017.[7] Missouri could improve these numbers by creating incentives for districts, schools and CTE teachers that encourage more students to earn IRCs. In other states where such incentives have been implemented, IRC attainment has increased dramatically.

CAREER AND TECHNICAL EDUCATION IN MISSOURI

To help prepare students for careers, Missouri offers CTE programs for students to learn job-specific skills. DESE oversees CTE programs at 444 of the 566 high schools in the state. In addition, there are 57 area career centers, which CTE students attend part-time while their traditional high school is their base school.[8] Area career centers can serve students from multiple school districts.

Since the 2017–18 school year, Missouri high school students interested in a career track have had the option of earning a CTE certificate. This certificate may or may not include acquiring an IRC. The CTE certificate process has several steps. First, students must create an Individual Career and Academic Plan and select classes that support their career goals. Then a student must earn three or more credits, with a minimum grade point average of 3.0 in these selected classes. Once this is accomplished, a student is considered to be a CTE concentrator. In 2017, over 130,000 high school students took a CTE course, but just 27,437 completed the requirements to be CTE concentrators, or around 10 percent of high school students.[9]

After a student qualifies as a CTE concentrator, the next step toward earning a CTE certificate is to fulfill a skills-testing requirement by passing either a Technical Skills Assessment (TSA) or an IRC exam related to their CTE concentration.[10] TSAs are only for administering CTE certificates, as they test the students' knowledge gained in the courses that qualified them to be concentrators. According to DESE, a TSA "measures skill proficiency of Career and Technical Education (CTE) students who are concentrators (a student who has earned three or more sequential credits in any state-approved CTE program grades 9–12) and has completed an approved CTE program."[11] The federal career and technical education law, the Perkins V Act, requires technical skill attainment to be included in a state's CTE plan in order to receive federal funding, of which Missouri receives about $22 million a year.[12] However, TSA completion doesn't necessarily signal anything to potential employers.

IRCs are for employment purposes. An IRC is "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."[13] They are not developed by DESE; rather they are created and administered by an industry group—similar to how the National Conference of Bar Examiners creates the bar exam or how the American Institute of Certified Public Accountants creates the CPA exam. Even though students may learn valuable skills throughout the CTE certification process, many will still need the proper certification—an IRC—to be a competitive applicant in the labor market. In some instances, an IRC may require verification of training hours and in a well-structured CTE program a student's hours would fulfill the IRC requirements.

Of the CTE concentrators (students who completed three courses) in 2017, just 13,114 took a TSA exam. Seventy-three percent (9,569) passed.[14] In that same year, 8,656 IRC exams were passed.[15] Students may earn more than one IRC, and students may take an IRC in lieu of or alongside a TSA, so it is difficult to say how many students passed either a TSA or an IRC because of the possibility of double-counting students.

Students who want a CTE certificate must also complete at least 50 hours of a "work-based learning experience," which can include job shadowing, an internship, a registered apprenticeship or another school-approved option. The final requirements are a 95 percent attendance rate from ninth to twelfth grade, demonstration of business skills with student CTE group participation, a passing score on an ethics exam or three letters of recommendation, and proving college and career readiness through several testing options, such as the ACT.[16]

It's probably too soon to know how the business community perceives the value of the certificate. TSA's may also signal career or technical knowledge. This brief, however, is focused specifically on increasing IRC attainment, since an IRC is required in order to obtain a job in many fields.

INDUSTRY-RECOGNIZED CREDENTIALS HELP STUDENTS ENTER THE WORKFORCE

IRCs are applicable to a wide variety of career fields, including culinary arts, veterinary medicine, law enforcement, information technology (IT), construction, education, manufacturing, and production. In some cases, an IRC is required in order apply for a job, and in others it's evidence of certifiable knowledge. In many occupations, people can earn higher-level IRCs to demonstrate their increased expertise, thus "stacking" their credentials on top of one another.

Health care is one career track where earning an IRC is almost always necessary for entering the workforce, and there is plenty of opportunity to expand the number of IRC recipients in Missouri. The Certified Nursing Assistant (CNA) IRC is available to Missouri high school students and confirms that the recipient has the knowledge and skills to be a nursing assistant. Between 2016 and 2026, MERIC estimates Missouri will have over 55,000 job openings for nursing assistants.[17] In 2017, just 1,173 Missouri high school students earned a CNA IRC.[18] Obtaining a CNA is also the first step towards becoming a licensed practical nurse (LPN), and then a registered nurse (RN). There are "bridge" programs for CNAs to connect CNA experience to LPN or RN requirements. It is estimated that there will be around 52,000 registered nurse openings between 2016 and 2026, with an average salary of $60,300.19 Beyond nursing, CNA training prepares students for jobs in health care services, outpatient care centers, specialty hospitals, and other ambulatory health care services. It is expected that there will be just over 17,000 additional jobs in these areas by 2026.[20]

Dentist offices also need an influx of skilled workers. By 2026, there will be over 2,000 new jobs in the offices of dentists.[21] DESE has approved three IRC exams for dentistry: The Certified Dental Assistant Infection Control Exam (ICE), the Certified Dental Assistant Radiation Health and Safety Exam (RHS), and The Missouri Assessment of Basic Dental Assisting Skills. However, no Missouri high school students passed any of those exams in 2017 or 2018.[22] An average dental assistant salary in Missouri is $38,350, which is more than the national average earnings for 18- to 24-year-olds ($30,000) and the median Missouri high school graduate salary ($29,000).[23]

And students can make themselves eligible for these jobs without paying for the one to two years of education typically needed for a dental assistant.

Other growing middle-skill industries in need of skilled workers are IT and software development. Many jobs in these fields do not require college degrees, but they do require certification. From 2014 to 2024, an estimated 5,465 openings will occur in just three entry-level IT jobs: computer user support specialists, computer network support specialists and web developers.[24] Overall, computer systems designers and related occupations are projected to have the second-highest number of job openings from 2016 to 2026.[25] In 2017, computer user support specialists earned a median wage of $44,230 a year and an entry wage of $34,390, computer network support specialists earned a $51,980 median salary a year with an entry wage of $40,750 and web developers earned a median $55,530 with an entry wage of $40,000.[26]

Microsoft, Adobe (including Photoshop), Cisco, and CompTIA are some of the IRCs offered in Missouri in the software development and IT fields. In 2017, just 536 IT and software related IRCs were earned (Adobe, Cisco, CompTIA, CIW, Microsoft, and TestOut exams). It is likely there were students who passed more than one IRC, so it is likely that fewer than 536 students earned an IT-related IRC. A student who attains an IRC, particularly if he earns college credit during his CTE courses, can meet the qualifications for a web developer. There will be different web developer job requirements across businesses and regions, but MERIC states that the typical requirement is an associate's degree and job experience isn't necessary, although this could change depending on the employer's specific needs and the applicant's experiences and qualifications.[27] A student with a combination of IRCs and college credit could be well-situated for a web developer position. In June 2018 it was estimated that almost three fourths of the open IT jobs were for a higher skill and experience level than associate-degree-level jobs.[28] Thus, preparing high school graduates for IT jobs sets them up for a long-term career.[29]

Construction trades, which would encompass carpenters, electricians, plumbers, sheet metal workers, and masons, are also projected to expand in Missouri.[30] About 2,100 job openings are expected between 2016 and 2026 in carpentry,[31] but in 2017 just 223 carpentry IRC exams were passed by Missouri high school students.[32] About 1,182 electrician jobs are expected to be available by 2026. A graduate could earn an average salary of $35,350 a year as an electrician helper, and after stacking more credentials and gaining experience, they could reach an average salary of $61,630 as electricians.[33]

In addition to job-specific skills, employers across all industries look for basic skills in computer programming and software. In a survey of job advertisements in the financial and professional services industry, the top four software skills sought were Microsoft Office, Microsoft Excel, Microsoft PowerPoint, and Microsoft Word. Also on the list were SQL, Java, and Oracle.[34] IRCs exist for all of those programs, although they are not well represented in DESE's approved IRC list. High school graduates could prove their competence in those skills with an IRC, making their applications in the financial and professional services field more competitive. The same software skills appeared in the energy solutions industry, with the addition of AutoCAD, yet another IRC offering.[35] Six out of the ten top software skills in the biosciences industry corresponded with IRCs.[36] There were also highly sought software skills compatible with IRCs in the advanced manufacturing and the health care industry.[37]

CURRENT IRC ATTAINMENT IN MISSOURI

In 2017, only 8,656 IRC exams were passed in Missouri. If each student only passed one IRC exam, then approximately 3 percent of high school students in the state would have passed an exam.[38] However, it is likely that some students passed more than one IRC exam. Passed IRC exams in 2017 were reported from a total of 335 schools within 300 districts. Some districts reported only a single passed test and at the highest end, one school reported 320 passing exams. There were a total of 213 schools that had CNA exams passed, but 70 percent of those schools had five or fewer exams passed. Eighty-three percent of districts reported that fewer than 10 students passed an IT or software-related exam. Twenty-nine percent of districts with passed IT exams only had one exam passed. It's possible that students aren't being encouraged to take IRC exams or aren't being guided with sufficient information when they choose between a TSA and IRC.

POLICY SOLUTIONS FOR INCREASING IRC ATTAINMENT IN MISSOURI

Expanding the Approved IRC List

For accountability and reporting, DESE has created a list of department-approved TSA and IRC exams. There are 254 approved TSA exams, but just 85 IRCs on the DESE-approved list of credentials.[39] One reason that there are far more DESE-approved TSA options than IRCs is that DESE has not approved an IRC for all TSA fields of study. The list of approved IRCs, particularly for high-demand fields, could be expanded. Florida, for example, has over 200 approved IRCs. In IT, Missouri has only approved four CompTIA certifications and one Certified Internet Web professional (CIW) certification. CompTIA and CIW both provide IT-focused educational resources and credentials and certifications.[40] DESE has approved some entry-level IT certifications and intermediate-level IT certifications.[41] Florida has approved twice as many CompTIA exams and 12 CIW exams.

Florida also has IRCs in careers Missouri does not, including aviation, forestry and biotechnology. Every represented industry currently on the DESE list could have expanded IRCs options. Health care, machining, information technology, HVAC, automotive, and agriculture are just some of the fields where students would benefit from expanded credential opportunities.

IRC Bonus Pay

In addition to expanding the IRC options available to students, Missouri could increase the number of IRC exams passed by implementing a bonus pay system. For example, for each student who passes an IRC exam, a school could receive an award of $500 in the following school year. Of that amount, 75 percent could go into the CTE program, with some portion ($50, for example), awarded directly to the teacher. The remaining 25 percent of the award could go to the school's general fund. The incentive could be distributed through the student funding formula by adding additional weights for students who passed the exam the prior year. IRCs are not a required aspect of CTE education, but this policy would give teachers an incentive to make an extra effort to equip their students to pass the test.

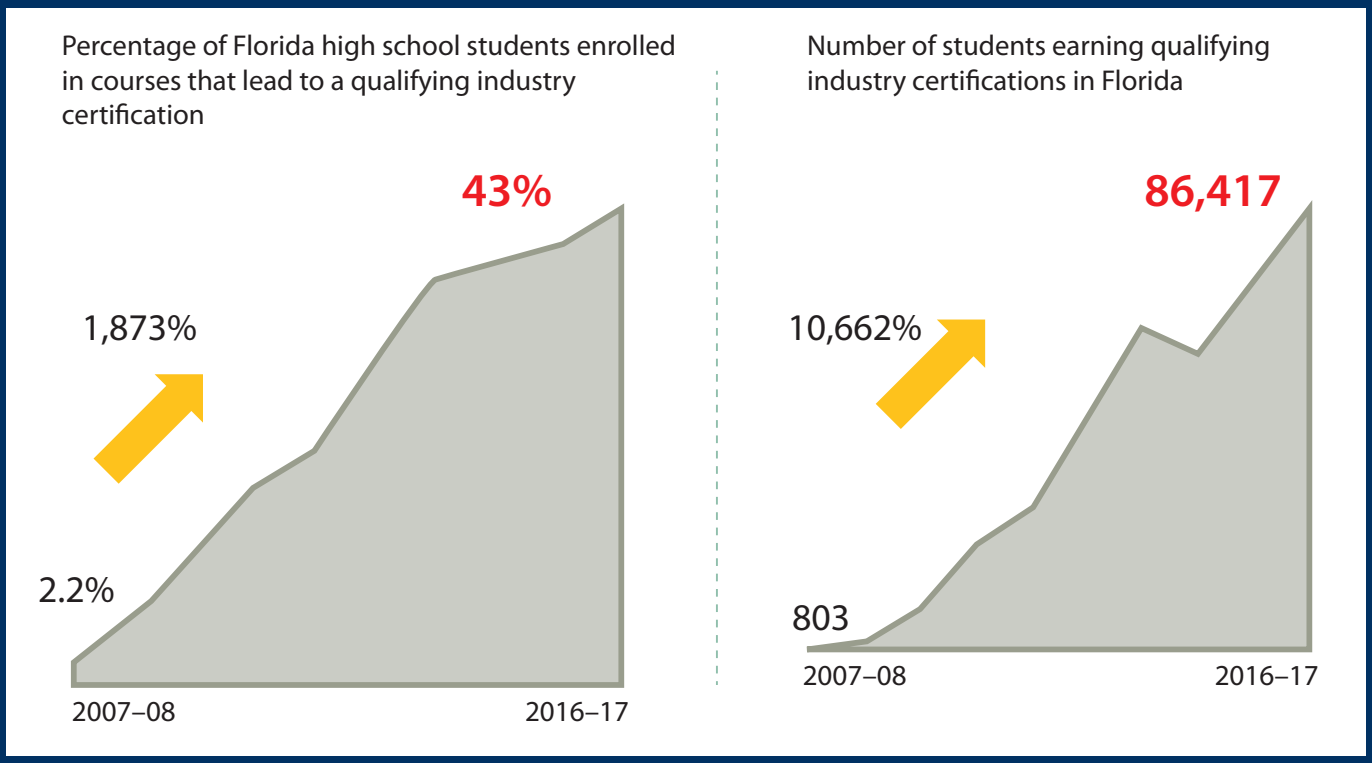
Similar bonus-pay policies have increased student IRC achievement in other states. IRC bonus pay policies tied to workforce development have been implemented in nine states: Florida, Kansas, Texas, Nevada, North Carolina, South Carolina, Minnesota, Colorado and Louisiana. Florida has the longest-running IRC bonus pay program, which started during the 2008–09 school year. Florida has seen IRC attainment remarkably increase from 803 IRCs in 2007–08 to over 86,000 in 2016–17 (Figure 1).[42] Florida students in IRC classes also have higher GPAs, lower rates of chronic absenteeism, lower dropout rates, and higher Advanced Placement course enrollment.[43]

Kansas has seen a 191 percent increase in IRC attainment since its incentive program started in the 2011–2012 school year, with an increase from 548 to 1,597 IRCs in the 2015–16 school year.[44] North Carolina began collecting information about IRC attainment during the 2010–2011 year. In the 2016–17 year, the state began a teacher bonus pay policy for IRCs earned based on workforce demand. Since the 2010–11 school year IRC attainment has steadily gone up, but it increased dramatically during the second year of the teacher bonus pay program, going from approximately 160,000 IRCs in 2016–17 to over 276,500 the following school year.[45] Other states' programs are too new to determine their success, but Florida, North Carolina and Kansas have seen drastic improvements in IRC attainment.

A recent report by ExcelinEd covered hundreds of thousands of students from Florida, Indiana, and Kentucky and found mostly positive outcomes for those who earned an IRC. In all three states, students who earned an IRC were more likely to graduate high school on time. Students from Kentucky and Florida who enrolled in community college were more likely to receive an associate's degree. In Florida and Indiana, researchers observed up to a 12 percent wage increase for those who worked full-time after high school compared to those who worked full-time but did not earn a credential.[46]

While the overall results were positive, researchers did observe a potentially negative effect in Kentucky for those who enrolled at a four-year university. These students were less likely to complete their bachelor's degree if they had earned an IRC. One possible explanation is that "the

Figure 1:
The Incentive Works: Florida



Source: excelined.org

opportunity cost of each additional year of education is higher for credential earners than non-earners."[47] In other words, students just may not have thought it was worth finishing a bachelor's degree and would rather be working. Given that Missouri has a shortage of middle-skill workers, such as those with associate's degrees, investing in a system where more students earned IRCs could be worthwhile for students and for the state's economy.

THE POTENTIAL IMPACT ON MISSOURI'S ECONOMY

Of course, there is an up-front cost to these programs. Kansas awards a total of $450 per IRC and Florida awards between $415 and $830, depending on whether the student earned college credit or not.[48] If $500 awards had been administered in Missouri in 2017, it would have cost DESE $4.3 million. If this program had $10 million, it could support bonuses for 20,000 passed IRC exams, which would nearly triple IRC passing rates in Missouri from 2017. But would it be worth the investment?

On average, middle-skill occupations earn $41,800 in Missouri.[49] By comparison, the median wage for an individual Missourian 25 years or older who has only completed high school was $29,815 in 2017.[50] Many of the middle-skill jobs that require IRCs have starting salaries that exceed that amount, and the salary could be even higher with credential stacking. At a marginal tax rate of 5 percent, a student graduating with an IRC would return the $500 investment to the state back as soon as their cumulative income with an IRC exceeds what their income would have been without an IRC by just $10,000. Over a typical person's 40-year career, Missouri would receive tens of thousands of dollars in additional revenue per IRC recipient at a very small cost.

Incentivizing schools and teachers to expand the attainment of IRCs could provide a positive return on investment for Missouri's economy in other ways. Returning to the Heartland Institute study, better preparing workers for jobs requiring skills and credentials could also boost productivity in the state, as employees are able to make their work more valuable. A higher skilled workforce could also improve Missouri's standard of living and GDP. As workers contribute more and higher quality goods and services into the economy, the GDP and therefore the standard of living will also increase. The Heartland Institute's report makes it clear that Missouri lags in wage growth. The median wages in Missouri for working full time are just over $41,000 for men and $30,000 for women.[51] Many IRC jobs have competitive average salaries and room for advancement, expanding the number of workers with higher wages.

Florida's economic indicators have also improved in the same time frame that the number of IRCs attained during high school increased. GDP has steadily gone up since the inception of the IRC bonus pay program, from $768 billion in 2007 to $985 billion in 2017, a 27 percent increase. Per-person personal income has also gone up by 21 percent, from $39,602 in 2007 to $47,869 in 2017, a 21 percent increase.[52] Of course, correlation is not causation, and IRC attainment cannot fully claim credit for the increases in the economic boosts Florida has experienced, but encouraging students to earn IRCs would be cost-effective.

A long-term goal for Missouri should be to fulfill the workforce needs of employers. Students who graduate with an IRC are better prepared for middle-skill jobs. While passing a TSA and obtaining a DESE-designed CTE certificate may be important metrics within the educational system, students ultimately leave that system and join the workforce. Well-prepared and credentialed students are what will contribute to growing our supply of qualified workers.

CONCLUSION

Deficiencies in Missouri's workforce are contributing to lagging growth levels in the state's gross domestic product, standard of living, average wage, and wage growth. There are job openings for middle-skilled employees, and these jobs often provide opportunities for career advancement. Missouri's economy has expanding industries, such as health care, construction, and IT. But as these industries grow, they need employees. Unfortunately, businesses are often unable to expand their workforce because there are not enough applicants with the skills they need. Graduating more high school seniors with IRCs could change that.

Expanding our IRC offerings and instituting a bonus pay policy for schools and teachers with students who earn an IRC are important first steps toward Missouri building a robust state workforce. Other states have seen dramatic success in increasing the numbers of IRC exams passed with this policy. Only 3 percent of high school graduates earned an IRC in 2017.[53] Doubling or tripling that number would provide a large return on investment to the Missouri economy.

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