

**ACTE Opportunity Fund  
Region III CTE Teacher Shortage Project  
Executive Summary  
2019**

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ACTE Region III initiated a discussion on CTE Teacher Shortage in June 2016. The discussion that began at the region level soon became a national discussion through the Association for Career and Technical Education (ACTE). It was apparent that CTE is facing a teacher supply and demand issue.

In 2018, Region III was the recipient of funding through the ACTE Opportunity Fund for the purpose of conducting research surrounding this issue. The project consisted of two components: (1) Research and (2) Data Collection. The research component included identifying best practices in dealing with teacher shortage, identifying the existing CTE teacher preparation programs within Region III and identifying other stakeholders across the country that have an interest in these efforts. The second component involved collecting data to determine the supply and demand in the field. For simplicity the project limited the CTE areas to agriculture, family and consumer science, health science, business and industrial technology. Katrina Plese was hired as the project coordinator and the University of Wisconsin-Stout (UW Stout) was contracted to complete the data collection. This document is a summary of the findings from the one year of research and data collection.

Facing these challenges, stakeholders in Career and Technical Education must continue the research to determine the best course of action. Currently the supply

and demand data for CTE teachers, with the exception of agriculture, is very limited. Other data such as the total number of positions within the state, the number of programs that closed due to lack of a qualified instructor and attrition rates of CTE instructors does not exist. Through this project it was determined that some states within Region III do collect useful data, but with limited human resources, obtaining the data was difficult or not made available. It is important to note that participation was voluntary and in the end, researchers had to rely on public websites to find existing teacher preparation programs and data. Efforts to refine the process are needed.

#### **Research**

We discovered research on the CTE teacher shortage is basically non-existent. A study was conducted in 1990 and updated in 2001. No other studies transpired until 2015. Through that study the following recommendations were suggested: 1.) Embrace the broader aspect of CTE/Workforce, 2.) Embrace non-traditional forms of delivery of instruction and maximize technology, 3.) Partner with other programs, departments and colleges, and 4.) Further research is needed (Fletcher, Gordon, 2016). The research also noted that CTE programs at four year universities have declined but found that enrollments at community colleges were higher. This could reflect the trend of community colleges offering alternative teacher licensure baccalaureate degrees.

When researching best practices that address the shortage, it was determined that the strategies can be categorized as best implemented at the local, state or national/association level. At the local level the more successful strategies included apprenticeship, teacher residency, grow your own programs, and some form of a scholarship/tuition reimbursement. New York City Public Schools has a long-standing *Success via Apprenticeship* program that includes a salaried teaching internship, college level academic studies and relevant work experience. The success of the program is contributed to its longevity, compensation and benefits, administrator involvement, and completion of a bachelor degree within five years. This program has a 94.4% completion rate and currently 94% of those that completed the program are teaching. The cost of the program is a limiting factor. For future consideration it is suggested to look at a cooperative between business/industry, recruit students with an associate degree and recruit students pursuing technical associate degrees and provide partial/full funding.

The Chicago Teachers Union Foundation (AFT) partnered with Manufacturing Renaissance and the National Institute for Metalworking Skills (NIMS) to design a program to train and qualify instructors to teach advance manufacturing courses in high school. This particular program could be categorized as a grow your own program as all but one individual were current teachers within Chicago Public Schools. At the conclusion of the program, the one individual from industry did not receive their certification to teach. The program utilized the Chicago Teachers Union Quest Center for professional development. The curriculum was well planned and had

invested partners. The initial program was designed to be four months but was extended to six months. In the future it is recommended to offer the program over a full year.

Scholarship and tuition reimbursement programs can be administered from the state or local level. The State of Indiana pays \$7,000 annually to a total of 200 students. The students must graduate in the top 20% of their high school class and commit to five years of teaching. In 2017 600 students applied for the 200 available spots. North Carolina Loan Forgiveness Program & Service Scholarship pays \$6,500 annually for four years. Between 1986 - 2015 over 11,000 teachers were recruited. In the 2013-14 school year, 4,800 fellows were teaching. Ten percent of all teachers credentialed each year in North Carolina come through the scholarship program. If they fail to give four years of service the scholarship converts to a loan with 10% interest.

Teacher residency programs are highly successful but also costly. In 2016, *The Learning Policy Institute* identified 50 residency programs nationwide. Through their review they identified key characteristics of a strong residency program:

1. carefully designed and implemented,
2. careful selection process,
3. coursework is tightly integrated with clinical experience,
4. strong district/university partnership,
5. financial support in exchange for three – five years of experience, and

6. ongoing mentoring and support for graduates.

Residency programs often attract a more diverse population. In 2015-16, 13% of residency grads taught in math, science and technology. Thirty-two percent taught ELL or students with special needs. The retention rate is relatively high being at 80 -90% after three years, 70-80% after five years as compared to 20-30% of those not in a residency program. Residency programs tend to be costly, therefore, a limitation to many districts. More information on residency programs can be found in their report *The Teacher Residency: An Innovative Model for Preparing Teachers (Guha, Hyler, & Darling-Hammond, 2016)*.

The National Education Association (NEA) recently funded New York and San Francisco with a three year grant to develop/implement a sustainable residency program. In general, research shows that apprenticeship and residency programs are successful in attracting strong teachers and in areas of high need as well as promote teacher retention.

Grow your own programs can be implemented at a local level or through a state initiative. In Illinois, Quincy Public Schools implemented a grow your own program that exposed high school students to careers in education. Students received college credit for two classes: Introduction to Education and Media Technology in Education. Throughout the program the students observed experienced teachers looking at learning styles, philosophies in classroom management and organization. At the conclusion of the semester they taught a mini-lesson.

In 2008 the state of South Carolina passed a bill that grants local education agencies/districts the right to offer an approved program of study to certify lateral entry candidates. Gullford County Schools implemented a 12 month program where teachers must pass “certain” tests by the second year and complete their training coursework within three years. Teachers are basically teaching while obtaining their licensure. In 2016-17, 55% of new-to-teaching hires were lateral entry teachers. Many states have introduced legislation to modify licensure requirements as well as institute loan forgiveness programs, scholarships and grow your own initiatives.

At the national association, level one program stood out: the National Teach Ag Campaign. The National Teach Ag Campaign is a multi-fold campaign that focuses on recruitment and retention. The goal of the program is *to ensure an abundant supply of high quality and diverse agriculture teachers who will cultivate the next generation of leaders*. The campaign began in 2009 with a budget of \$40,000 and one part-time employee. The budget was supported through sponsorships. The campaign has a strong data component where they track the number of teachers in the pipeline, the number leaving and why, social media presence, the number of touch points they have made with those in the pipeline along with many other data points. Using the data they are able to target specific programs that meet their needs. Through this initiative they are currently experiencing a 94%-96% retention rate with their educators.

#### **Stakeholders**

Much of the best practices research was obtained through online searches. But contacts were made with a variety of

agencies/organizations to follow-up on their initiatives. Steve DeWitt, ACTE, was helpful in making the initial introduction. Those agencies/organizations included:

- Region III CTE associations/state departments
- Chicago Teachers Union Foundation
- National Education Association
- American Federation of Teachers
- IL Facilitating Coordination in Agriculture Education (FCAE)
- National Teach Ag Campaign
- National Board for Professional Teaching Standards
- Advance CTE
- OCTAE, US Department of Education
- ACTER, Association for Career & Technical Education Research
- World Education Services (teacher bridge for immigrants)

Many worthwhile initiatives are being discussed or implemented through these agencies. From an association standpoint the National Teach Ag Campaign stood out as one that could be replicated in Region III and throughout the country at an association level.

#### **Data Collection/Methods**

Efforts were made to collect a variety of data points to determine the availability of CTE teacher preparation programs along with supply and demand. Due to a lack of human resources within the state departments this effort became a hurdle. The appropriate contacts were made and individuals were identified to supply the information, but the follow-through of the state departments did not happen in all states. Therefore, the project had to rely

on public websites to obtain the datasets. UW-Stout obtained the following datasets:

- 1.) Sum of Candidates Endorsed by State 2010-2011 through 2015-2016,
- 2.) Count of Traditional/Alternative Programs by State,
- 3.) Count of CTE Areas by State,
- 4.) Teacher Preparation Program Providers by State, and
- 5.) Providers by State with Program Description by State and Provider.

Within Region III many universities have programs but they are not currently being offered. The research also showed that Universities are offering “fast-track” methods to obtain a licensure or a transition program for those coming directly from industry.

*Table 1. Number of Candidates Endorsed in CTE by State through Traditional or Alternative Teacher Preparation Program*

<b>State</b>	<b>2010-11</b>	<b>2014-15</b>	<b>2015-16*</b>
IA	95	63	74
IL	243	63	79
IN	133	60	74
MO	230	147	138
MN	56	31	117
WI	138	95	79

*\*2015-16 most recent data available.*

Iowa, Illinois, Indiana and Minnesota experienced an increase in the number of endorsements whereas Missouri and Wisconsin experienced a decrease from 2014-2015 to 2015-2016. Minnesota saw the largest gain between 2014-15 and 2015-16. Minnesota completely revamped the teacher licensure system for all areas. It is speculated that the increase in 2015-16 was

individuals trying to obtain licenses under the old system.

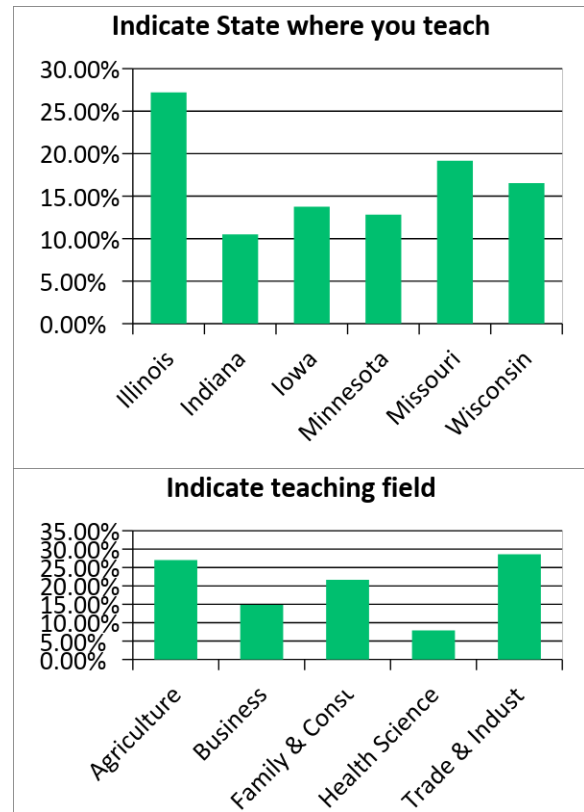
Indiana has more alternative programs versus traditional teacher preparation programs, whereas Minnesota only has one alternative program. We did not capture historical data on this particular dataset. Illinois has the most traditional providers but many are not currently offering programs. The data showed that there were more programs in business education than any other CTE discipline.

*Table 2. Number of Alternative and Traditional Teacher Preparation Programs by State.*

State	Alt. Program	Trad. Program
IA	5	23
IL	6	42
IN	23	20
MO	17	33
MN	1	19
WI	13	18

Although limited data was provided the relationships have been established within the states. The project focused on obtaining the data from the state departments as this was the data warehouse for the type of data the project was requesting. In the future the process and type of data needs to be refined with the possibility of obtaining data from the existing teacher preparation programs.

Besides obtaining data specific to teacher preparation programs, the project administered a new CTE teacher survey, those identified with one-three years of experience. A total of 647 CTE teachers provided feedback.



Of the 647 new teachers, 54.71% graduated from a traditional teacher preparation program, 36.48% an alternative program and 13.29% obtained their licensure through alternative means such as with work experience and education level.

An overwhelming majority heard about the position through a personal contact or their University/College Advisor. Asked why they went into education the primary responses were some type of financial assistance such as tuition reimbursement, scholarship, GI Bill/Troops to Teachers Program followed by salary/benefits, and job availability (shortage area).

It was important to learn what supports were needed to retain a new teacher. Ongoing professional development and mentoring topped the list.

Table 3. Types of Supports found to be Beneficial.

No Supports	5.49%	35
Mentoring	70.96%	452
Professional Development	73.16%	466
Professional Organization	45.53%	290
Other	15.86%	101
Number Responded		637
Number Skipped Quest.		11

For those that did not have supports, they indicated that they relied on the previous instructor, CSTO alumni, Facebook teacher groups and program discipline list serves. Asked what they felt would have been helpful as a new teacher, mentoring and networking with teachers of like discipline topped the list.

Of the 647 surveyed, 56.11% belong to a state professional organization. When asked to identify the organization, the majority identified the discipline affiliate not the overarching state organization. Thirty-seven percent of the participants belong to a national professional organization with 29% of those being ACTE members. Once again, many were confused between the state and national organizations and their discipline affiliate.

In addition to this summary document, a comprehensive dashboard has been created using the UW-Stout data and the new teacher survey data. Individual state data dashboards/infographics are currently being developed to share the results of the project and to maintain contact within each state.

### Future Plans

In addition to this summary document, a data dashboard and infographics will be published and disseminated to the Region III stakeholders. Continued collaboration with the university teacher preparation programs, state CTE departments and the National Teach Ag Campaign will enable successful supply and demand data collection. Region III recommends continuing these efforts as they work on refining the data, develop a communication plan, establish a social media presence and continue to build relationships with various stakeholders.

### References

Fletcher Jr., E. C., Gordon, H. R. D., (2016). The condition of career and technical education undergraduate and graduate programs in the United States. *Peabody Journal of Education*, 92(2), 236-253. doi: [10.1080/0161956X.2017.1302219](https://doi.org/10.1080/0161956X.2017.1302219)

Guha, R., Hyler, M.E., and Darling-Hammond, L. (2016). *The teacher residency: An innovative model for preparing teachers*. Palo Alto, CA: Learning Policy Institute.

### Supplemental Documents

- A. ACTE Dashboard – UW Stout data set
- B. New CTE teacher survey results
- C. Vision 2018 PowerPoint presentation

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## Region III Snapshot

Today's cutting-edge, rigorous and relevant career technical education (CTE) prepares youth and adults for high-wage, high-skill, high-demand careers in established and emerging industries.

ACTE, 2019



### Current Situation

CTE programs at four year universities have declined, but enrollments at community colleges are higher.



CTE is facing a teacher supply and demand issue.



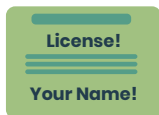
An overwhelming majority of teacher candidates heard about the position through a personal contact or their University/College Advisor.



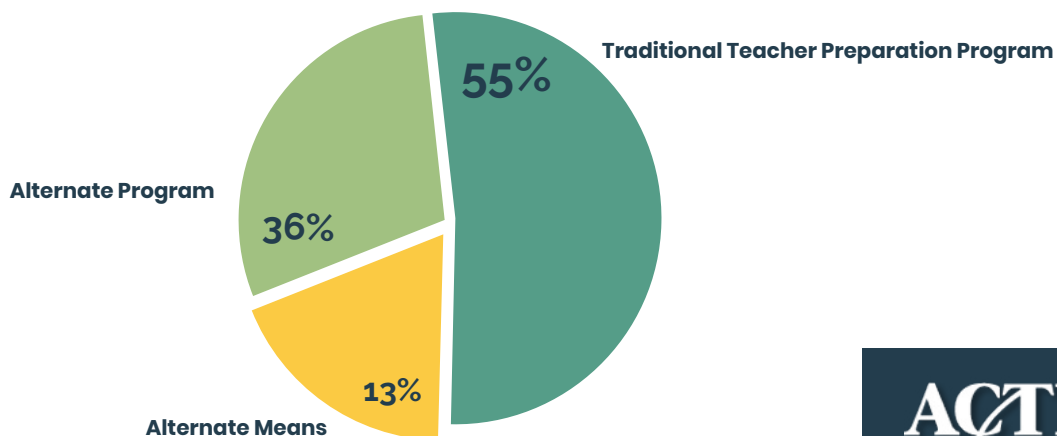
Research on the CTE teacher shortage is basically non-existent. More data collection is required.



Within Region III many universities have programs but they are currently not being offered.



### How are Teacher Candidates Earning Licenses?

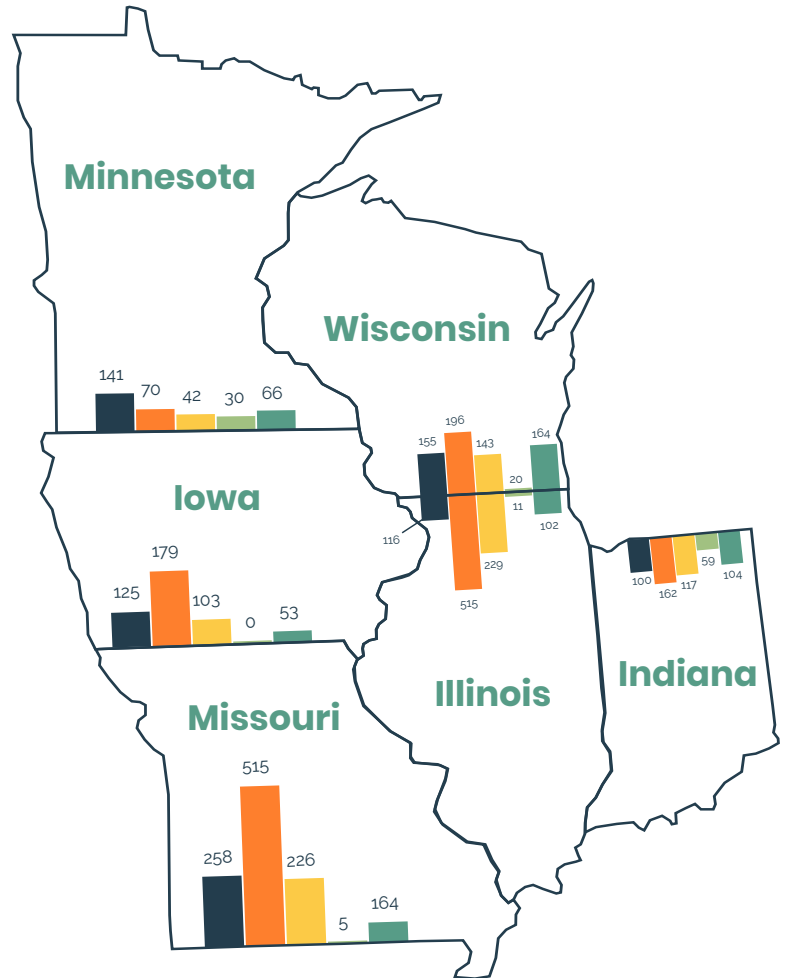




## Region III Snapshot

### Total Number of Teacher Education Candidates

- Agriculture Ed. Candidates
- Business Ed. Candidates
- Family and Consumer Science Ed. Candidates
- Technical Ed. Candidates
- Technology Ed. Candidates



### Reasons Candidates Chose Education as a Career:

#### Financial Assistance

- \$ -Tuition Reimbursement
- Scholarships
- GI Bill/Troops to Teachers

#### Security

- ☑ -Salary/Benefits
- Job Availability



In general, research shows that apprenticeship and residency programs are successful in attracting strong teachers in areas of high need as well as promote teacher retention.



New teachers reported ongoing professional development and mentoring as top supports for retention.