A Teacher Apprenticeship Pathway in a Rural, Midwest State: Perspectives of Teacher Apprentices

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Abstract

The national teacher shortage makes it challenging for principals and superintendents to hire certified teachers. To address this problem, a university in a rural state in the Midwest partnered with their state's agencies to develop a teacher apprenticeship pathway (TAP) for 78 paraprofessionals working in the state's public, non-public, and tribal schools. The TAP provides an organized pathway to earn a teaching degree. This study reveals the perceptions of the participants after completing their first semester. The results reveal that most experiences are positive, yet they desire more communication and help with time management. The results of this study can be useful to principals and superintendents who may be partnering with stakeholders to begin a TAP.

Key Words

teacher apprenticeship pathway, rural, teacher shortage

Teacher education programs across the nation are seeing a decline in entrants (Evans et al., 2021). Factors such as challenging classroom discipline, subpar compensation, and lack of encouragement from existing educators to enter the profession can be cited as among the reasons for the decline (Evans et al., 2021). South Dakota, where this study is based, reflects this trend, with vacancies remaining unfilled throughout the state, particularly in rural areas. Rural states often have fewer applicants for teaching positions. This can be due to comparatively modest salaries, unique work environment factors, and high teacher attrition (Tran et al., 2020; Oyen & Schweinle, 2021; Hall & Giles, 2022). One solution to this problem has been to develop alternative certification pathways for individuals living in rural areas to earn a teaching degree and become a certified teacher without relocating or leaving their current position. This is oftentimes called an *earn-while-you-learn* model.

The South Dakota Teacher Apprenticeship Pathway (SDTAP) was developed as a strategic response to the critical teacher shortage confronting principals and superintendents in South Dakota. The program, developed in collaboration between one of the state's public universities, Dakota State University, the South Dakota Department of Education, the South Dakota Department of Labor and Regulations, and the South Dakota Board of Regents, is the first registered apprenticeship in the state, as recognized by the United States Department of Labor and Regulation. The SDTAP provides aspiring paraprofessionals, currently working in South Dakota classrooms, a pathway to transition into certified teachers by completing a bachelor's degree in education through Dakota State University. This *grow-your-own* approach provides principals and superintendents the ability to recruit, cultivate, and potentially employ interested paraprofessionals already working within their schools. The individuals enrolled in the program continue to serve as paraprofessionals while taking online coursework toward their teaching degree in elementary education or special education. In the fall of 2023, 78 paraprofessionals began their journey to becoming elementary or special education teachers within the SDTAP at Dakota State University.

Purpose of the Study

This study aims to examine the perspectives of the participants within the South Dakota Teacher Apprenticeship Pathway (SDTAP). By going straight to the source, this research will examine the participants' successes, struggles, and insights. The findings, conclusions, and discussion from the study are informative for principals, superintendents, policymakers, stakeholders, and teacher education programs of other rural states who are facing teacher shortages and considering new strategies to create a pathway for existing paraprofessionals in their schools to become certified teachers.

Teacher Shortage, Recruitment, Retention, and Demand in Rural Areas

Teacher retention and attrition have been prevalent issues in education for decades. With around eight percent of teachers leaving the profession every year in the U.S., much research has explored why teachers choose to stay or leave, especially in the early years of their careers (Sutcher et al., 2016). While several studies highlight unique recruitment, retention, and attrition issues in rural school districts, this review synthesizes key findings from five recent studies.

Rural locales often struggle to attract teaching candidates due to geographic isolation, lower salaries, and lack of amenities (Oyen & Schweinle, 2021; Tran et al., 2020).

Rural teachers also take on additional roles and responsibilities compared to their suburban and urban peers (Tran et al., 2020). However, rural teachers report advantages as well, including close relationships, autonomy, and making an impact on students' lives (Tran et al., 2020). Ultimately, teachers who grew up in rural areas are much more likely to consider returning to teach in rural schools (*homegrown* teachers) whereas over 80% of rural teachers who grew up in urban areas (*transplanted* teachers) leave rural teaching (Husyman, 2008; Oyen & Schweinle, 2021), which signals the importance of purposefully recruiting teaching candidates with rural backgrounds for retention in rural areas.

Additional studies (Frahm & Cianca, 2021; Oyen & Schweinle, 2021; Peterson, Osseo, Baule, & Winona, 2023) emphasize the critical role of administrators in supporting and retaining novice teachers, especially in rural schools where geographic isolation can exacerbate retention issues. New rural teachers report needing active, intentional support from administrators to facilitate connections with the broader staff and community to prevent isolation (Frahm & Cianca, 2021). When administrators prioritize developing personal relationships with new teachers through regular check-ins, providing affirmation, and creating leadership opportunities, retention rates improve (Frahm & Cianca, 2021).

Retaining promising rural teachers cannot fall solely to administrators - the broader school community plays a key role as well (Oyen & Schweinle, 2021). Teachers report staying when they feel a sense of family and belonging with their colleagues (Oyen & Schweinle, 2021). Conversely, veteran teachers threatened by newcomers' energy and innovations can actively discourage talented young teachers (Oyen & Schweinle, 2021). To retain skilled teachers, rural schools should

embrace support for new teachers as a truly collective, shared endeavor.

Well-designed teacher preparation programs represent another pathway to boosting rural teacher retention. Grow-your-own teacher pipelines that recruit rural community members into the teaching profession show particular promise in providing a local, invested teaching workforce (Tran et al., 2020). High-retention residency models that integrate tight district partnerships, extensive clinical experience, and ongoing mentoring can also better prepare teachers for the realities of rural classrooms (Tran et al., 2020). Oyen and Schweinle (2021) report that greater confidence in skills like classroom management, relationship-building with parents, and teaching critical thinking - areas that preparation programs directly build - make candidates more willing to teach in rural locales.

Recruiting and supporting high-quality teachers remains a persistent struggle for many rural schools. Purposeful recruitment of hometown teaching candidates, dedicated leadership support from administrators to facilitate connections, a sense of belonging with the broader staff, and targeted preparation programs emerge from this review as evidence-based approaches linked to higher rural teacher retention.

Current National Teacher Apprenticeship Pathways

One solution to help alleviate the teacher shortage is through the creation of registered apprenticeship programs. According to the Department of Labor, "Apprenticeship is an industry-driven, high-quality career pathway where employers can develop and prepare their future workforce, and individuals can obtain paid work experience, classroom instruction, and a portable, nationally recognized

credential" (Career Seekers, 2024). While apprenticeships have been around for years to help recruit and train a workforce in many career fields, the idea has just recently gained attention in K-12 education.

A registered teacher apprenticeship program is a partnership between K-12 school districts and teacher education programs. The apprenticeship model marries on-the-job training alongside a mentor teacher with college coursework from a formal teacher education program. Often the teacher apprentices hold a paid position as a paraprofessional, or educational assistant, within a school district. They attend college, often for little or no tuition, while simultaneously working as paraprofessionals.

In March of 2022, Secretary of Education Miguel Cardona urged all states to commit to establishing a registered teacher apprenticeship pathway to address the teacher shortage crisis. (*U.S. Education Secretary Miguel Cardona Calls on States, Districts, Higher Ed Institutions to Address Nationwide Teacher Shortage and Bolster Student Recovery with American Rescue Plan Funds*.) In 2022, Tennessee became the first state to register a program with the Department of Labor. By January 2024, teacher apprenticeship programs had been formally registered in thirty states.

To ensure that the apprenticeship programs are high-quality and enable the participants to gain essential content alongside experiential learning, the Pathways Alliance partners with the United States Department of Labor and Regulations to vet each registered apprenticeship pathway. There are many benefits to the collaboration between teacher education programs, K-12 school districts, the Department of Labor and Regulation, and the Pathway Alliance. Teacher education programs experience increased enrollments and degree

completion for a broader group of candidates. School districts can contribute to the apprenticeship program's needs, give immediate access to classroom experience, and provide mentors to teacher appendices (Wonthey, 2019).

Methods
The study involved 78 paraprofessionals who were enrolled in the online South Dakota Teacher Apprenticeship Pathway in the fall of 2023 to pursue degrees in K-8 Elementary Education, K-12 Special Education, or a combined degree in K-8 Elementary Education/K-12 Special Education; these paraprofessionals are hereafter referred to as TAP students. The data presented in this study was collected using a survey that was administered to 78 TAP students in November of 2023, which was during the first semester in the program.

Population and Sample
The sample included 48 TAP students who responded to the survey, resulting in a response rate of 61.5%. At the time of the survey, all TAP were working full-time as paraprofessionals. Many schools had more than one TAP student, and all 78 TAP students were employed by 43 accredited public school districts, and one accredited non-public school throughout the state of South Dakota.

Three of the public school districts were located on lands of federally recognized tribes of the United States. According to the South Dakota Department of Education 2023/24 Fall Enrollment Census data, the total K-12 enrollment of the public school districts where the TAP students worked ranged in size from 117 to 24,358 K-12 students (https://doe.sd.gov/ofm/enrollment.aspx). The 43 accredited public schools where the TAP students were employed served an average of 1,871 K-12 students. 6 of the 43 public school districts had an enrollment greater than 3,000

K-12 students. Omitting these 6 districts resulted in an average K-12 enrollment of 775 students. Out of the 78 TAP students, 36 TAP students worked in K-12 school districts that served less than 1000 K-12 students. 33 TAP students declared the major K-8 Elementary Education, 13 declared special education, and 31 declared the combined major K-12 Elementary and Special Education. Figure 1 shows the dispersion of where the participants were located throughout the state.

Figure 1

Location of TAP Students throughout South Dakota
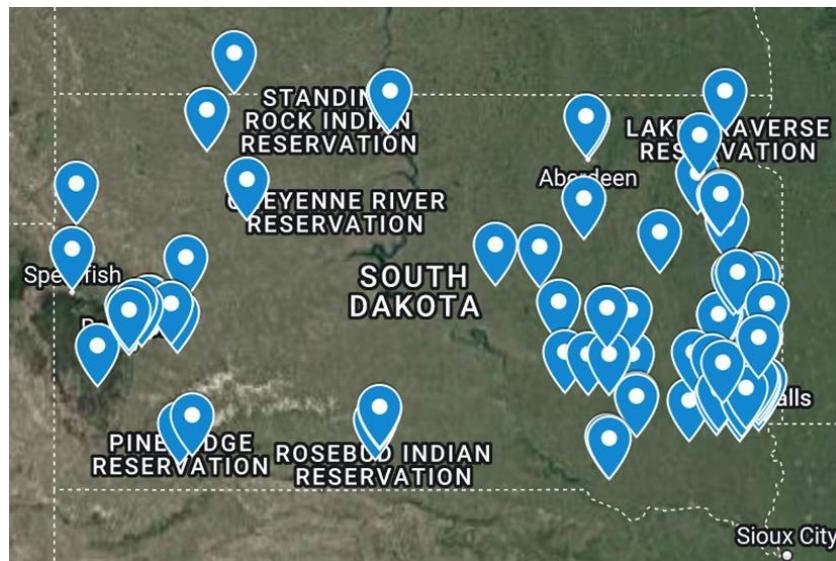
Research Design and Instrument

Dakota State University partnered with the Regional Educational Laboratory Program (REL) to generate the data for this study. As the purpose of the research was to gather TAP students' perceptions during their first semester in the program, the research used a descriptive design with no predetermined hypothesis. The research instrument was a survey that included these three open-ended questions: 1) How is your apprenticeship going this semester? 2) Do you have any needs to help you have a successful semester? 3) Do you have any other comments or concerns?

The study employed a qualitative analysis approach led by human researchers from the Regional Educational Laboratory (REL) group. Through multiple rounds of analysis, the REL identified emergent themes, sentiments, and patterns within the teacher apprenticeship experiences and outcomes. The rigorous process involved line-by-line coding, constant comparative methods, researcher triangulation, and conceptual mapping activities.

After the REL group's extensive analysis, the researchers utilized an AI

language model in a minimal auxiliary role to further sense-check the identified themes. The AI tool aided in surfacing any potential latent concepts not initially captured through the human-driven coding process, along with validating and strengthening the preexisting thematic structure developed by the REL analysts. The researchers were cautious about the AI's limitations, treating its output as a supplementary data point rather than a primary analysis method. Researcher deliberations and conceptual synthesis activities remained the core approach to deriving the final thematic framework representing teacher apprenticeship experiences. Finally, all substantive interpretations, contextualization of themes, selection of supporting evidence, and articulating theoretical contributions remained fully grounded in the human researchers' expertise.

In essence, this methodology prioritized a rigorous qualitative analysis process led by human subject matter experts, with the AI tool playing a minimal role in confirming and enriching the themes identified through the analysts' comprehensive grounded theory efforts.

Findings

The responses to the questions were analyzed and summarized by REL. A descriptive analysis of the responses led to the identification of three categories grouped by impression level: students who had a positive impression, a mixed impression, or a negative impression. 46% of the respondents had an overall positive impression of their experience at the time of the survey. 42% had a mixed impression, and 13% had a negative impression. The qualitative analysis revealed four themes: 1) time management and work-life balance; 2) need for support and understanding from instructors; 3) appreciation for existing support systems; and 4) lack of clarity and communication.

Theme 1: Time management and workload balance

One of the most prominent themes that emerged from the apprentice responses was the TAP students' difficulty in managing time and balancing the workload of the teacher apprenticeship program with other personal and professional commitments. Participants expressed some expected concerns about the extensive amount of homework, assignments, and field experiences that seemed to make it difficult to find sufficient time to complete the expected tasks for the program. The need for more time to complete tasks or assignments and/or strategies for time management was frequently mentioned.

One TAP student wrote, "It is a HUGE adjustment to being in school full time while working full-time." Another TAP student shared, "It's going well, but I'm struggling to keep up with assignments. I'm not sure if it's just me or not, but I find it really difficult to have the mental capacity to do a few hours of homework after a workday. If I don't work throughout the week then my entire weekend is full of homework with little time for anything else at all." Yet another explained, "Going okay, a little overwhelming. Lots of content expected as we work full time and juggle family life." Another responded, "It is going well. I am a little overwhelmed with some of my classes. I find it hard at times to juggle a full workload of homework, working a full-time job, and having a family to take care of."

Theme 2: Need for support and understanding from instructors

A second theme that emerged was the desire for more support and understanding from instructors regarding the unique circumstances faced by the participants. Teacher apprentices expressed a desire for instructors to acknowledge the challenges of balancing work, school, and personal responsibilities, and to be

more accommodating or flexible with course deadlines and workload expectations. A TAP student shared, "I do wish some of the professors had a little bit more of an understand(ing) of how the workload affects some of us and how challenging it can be at times." Another TAP student elaborated with the following: "I think to help the participants of this program to be successful, classes need to be structured to support full-time employees, many of whom have been out of school for many years. It does not feel like the professors have tried to support apprentices in this transition back to school." A third example from a TAP student is, "I need time to get work done, and want professors that are understanding in that I might not always be able to submit an assignment on time." Yet another explained, "I wish our experience as TA's was taken into consideration. One of the classes I am in is ____ ____ where we learn about assessments and progress monitoring. Because I am a Teacher's Assistant, I progress monitor students weekly. I wish some of our experience was taken into consideration when designing this pathway."

Theme 3: Appreciation for existing support systems

While teacher apprentices identified areas for improvement, many of their responses also highlighted an appreciation for the opportunity and support systems already in place for them. The teacher apprentices spoke positively about the encouragement and support that they received from mentors, advisors, and program staff, which helped them navigate the unforeseen challenges of the apprenticeship program. One TAP student shared, "I am so appreciative of this program! All the staff and secondary mentors have been wonderful. I have so many teachers who are in my "corner" cheering me on, wanting me to be successful." Another TAP student explained, "The apprenticeship is going well. Both of my mentors have been great, and it is great to know

that I have more resources to help support my journey." A third TAP student expounded, "Love how gracious and understanding my professors are and appreciate how everyone wants me to succeed." Another TAP student reflected, "So far it is going well. Everyone from mentors to instructors to DSU staff have been very accommodating."

Theme 4: Lack of clarity and communication

Some of the teacher apprentices expressed a need for better clarity and communication regarding some aspects of the apprenticeship program, such as testing options, grading criteria for work, and the alignment between coursework and field experiences. Apprentices also mentioned the need for improved transparency and clearer guidelines to ensure apprentices could effectively plan out tackling their workload and manage their course responsibilities. A TAP student commented, "Need more support when it comes to field experience." A second TAP student shared, "If I am being completely honest, I don't understand the purpose of the secondary mentor." The following is another point of confusion from a TAP student: "I am curious why certain classes are allowed to change the grading scale. I have two classes that were different. This adds some stress when there is an expectation of a certain grading scale." Another TAP student commented, "I wish the classes all had the same deadlines. It makes it a lot easier to keep track of what is due when." Finally, another TAP student shared, "So far throughout the apprenticeship, I feel that there have been a lot of unanswered questions - which is a sentiment I have heard from both apprentices and mentors."

Discussion

While the number of entrants into teacher education is dwindling, South Dakota's TAP program's potential for scalability suggests it

could significantly alleviate the teacher shortage, especially in a rural area.

Before launching the TAP program, DSU sent out a survey to paraprofessionals to gauge interest in pursuing a teaching degree. The response was overwhelming and highlighted in these key points:

- 540 paraprofessionals in South Dakota expressed a desire to obtain a teaching degree.

- 299 paraprofessionals applied to the SDTAP.

- A significant, yet unspecified, number of paraprofessionals contacted the South Dakota Department of Education post-deadline, indicating they missed the application window.

- 78 paraprofessionals were accepted and commenced their coursework at DSU in Fall 2023, a figure limited by available funding.

The geographical distribution of these apprentices across the state not only signifies a widespread demand in rural areas, but also demonstrates a promising step towards addressing the teacher shortage that left approximately 175 vacancies unfilled in the preceding year. The teacher apprenticeship pathway is not just a local solution, but a model for educational sustainability.

The results of this study lead to areas for consideration when designing future apprenticeship programs. While the overall response from teacher apprentices was positive and demonstrated a level of satisfaction, the responses disclosed a range of needs and concerns. The need for improved time management and workload balance emerged as a significant challenge, with apprentices

seeking out strategies or accommodations to help them effectively juggle their various commitments both personally and professionally. Additionally, apprentices expressed a desire for more support and understanding from instructors, acknowledging the unique demands of the teacher apprenticeship program.

While appreciative of the existing support systems, such as mentors and advisors, participants also identified a need for improved clarity and communication regarding certain program elements. Overall, the findings highlight the importance of addressing these concerns and providing appropriate resources and support to facilitate a successful and manageable experience for participants in the apprenticeship program.

The participants in the apprenticeship program wrote often about the idea of feeling overwhelmed and challenged by the program's requirements. One participant wrote, "I'm really enjoying my courses and all that I'm learning! I just feel overwhelmed." Another participant noted, "Going ok, a little overwhelming. Lots of content expected as we work full time and juggle family life." Many of the students had attended college in the past, but it had been several years. They found going back to college, in addition to their existing responsibilities, to be challenging. There can be nuances in returning to college, such as registering for coursework, applying for financial aid, purchasing books, navigating university learning management systems, and registering for required certification exams are among a few of these scenarios. On top of accelerated coursework, this can quickly become overwhelming for a teacher apprentice.

To help address this concern, the TAP program at Dakota State University provides each teacher apprentice access to a professional advisor. The professional advisor's role is to

help students create a program completion plan, register for coursework, modify course schedules as needed, and answer miscellaneous questions related to the university and the program. Three participants in the survey specifically mentioned the importance of access to this professional advisor. "...has been amazing as a support and encouragement." Another participant noted, ".... has been very helpful and I have been utilizing my resources within my district."

Primary and secondary mentors are also implemented for each teacher apprentice at the onset of the program. The primary mentor is a teacher within the district where the participant is employed as a paraprofessional. This person provides support within the participants' work environment. The secondary mentor is chosen by the university and is a person who is not working at the university or the participants' school district. The primary role of the secondary mentor is to provide check-ins with the participants, often through email. Sometimes the secondary mentor is just a listening ear, while other times they act as a cheerleader, reminding the teacher apprentice of their potential.

Recommendations

The findings of this study reveal several key areas where targeted strategies and support could be put into place to enhance the experience and further the success of future teacher apprenticeship programs. There is a well-known saying in that *it takes a village*. For TAP students, this village is a group of people that teacher apprentices feel comfortable reaching out to in times of need or challenges, become critical to their perceived success and overall satisfaction of the program. It is recommended that programs provide targeted support for adult learners in online programs. This support can be in the form of a professional advisor at the partnering university, alongside mentors, family members,

and colleagues. Additionally, facilitating opportunities for apprentices to connect can foster a sense of community and peer support, further enhancing their overall experience.

Many apprentices are returning to higher education after an extended hiatus. Orientation programs to aid their transition back to college become a necessary component of their success. Participants should be equipped with strategies and expectations for effective online learning, such as time management techniques, online communication best practices, and navigating virtual learning platforms. Orientation to these nuances can better prepare them for the unique challenges of remote coursework.

Instructors' understanding and flexibility is another area that is crucial to participants' success. Instructors should acknowledge the unique demands faced by teacher apprentices, who are juggling work, school, and personal responsibilities simultaneously. Promoting flexibility in deadlines and workload expectations can allow apprentices to balance their multiple commitments more effectively, reducing stress and increasing their chances of success.

Finally, enhancing clarity and communication is essential. Providing clear and transparent guidelines regarding program components, such as testing options, grading criteria, and the alignment between coursework and field experiences, can reduce confusion and ensure apprentices have a comprehensive understanding of expectations. Establishing effective communication channels can also ensure timely updates and allow apprentices to address concerns or seek clarification promptly.

Through implementing these recommendations, teacher apprenticeship programs can better support their participants, address their unique needs, and increase their

chances of success in becoming certified, effective educators within their context.

Recommendations for Further Research

While the recommendations outlined contribute to the success of students enrolled in teacher apprenticeship programs, there is more research to be considered. Support systems are crucial to the success of the teacher apprentices; however, more research is suggested to determine how these supports work. What roles should each member of the *village* play? What is the difference in these roles? What training or preparation should be provided to these key players to help them work with teacher apprentices? Further, it would be advantageous to know the desired frequency of communication, the preferred form of communication, and the areas of focus during the conversations with mentors and advisors.

Another area for further research is how to best structure coursework to allow for flexibility while maintaining rigor and pace within the program. What is the best timeframe for a course? How many courses should be taken at once? Should the coursework be self-paced? Given the multiple responsibilities of TAP students, should deadline flexibility be an option?

Conclusions

This study explored the perspectives of participants enrolled in the South Dakota Teacher Apprenticeship Pathway (SDTAP) during their first semester in a new program.

Students were surveyed during their first semester of courses to understand their overall perceptions of the apprenticeship program. Questions alluding to how the apprenticeship is going, what needs they may have for a successful semester, and any additional comments concerns they may have yielded responses that could provide stakeholders with information that can be immediately addressed through actionable steps, such as establishing support systems, providing clear communication on expectations, and offering grace when necessary to these aspiring educators.

The staggering number of applications for this opportunity prompted efforts to expand the program, and a second round will begin fall of 2024 at Dakota State University. This initiative has the potential to contribute significantly to alleviating the teacher shortage, particularly in rural areas where the need for high-quality educators is most acute.

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References

Career Seekers. (n.d.). Apprenticeship.Gov. Retrieved February 28, 2024, from
    https://www.apprenticeship.gov/career-seekers

Espinoza, D., Saunders, R., Kini, T., & Darling-Hammond, L. (2018). Taking the long view: state
    efforts to solve teacher shortages by strengthening the profession. *Learning Policy Institute*.

Evans, C., Burrell, T., Chavis, K., Farrow, J., Williams, C., Cooper, L., & Byrd, R. (2021). Teacher
    preparation enrollment trends: A review of national and statewide data. *FOCUS on Colleges,
    Universities & Schools*, *15*(1).

Frahm, M. T., & Cianca, M. (2021). Will they stay or will they go? Leadership behaviors that increase
    teacher retention in rural schools. *The Rural Educator*, *42*(3), 1.

Hall, K.S., & Gilles, M.A. (2022). Reasons for teacher attrition: Experience matters. *AASA Journal of
    Scholarship and Practice*, *19*(1), 8-13.

Nguyen, T. (2020). Teacher attrition and retention in Kansas: A case study of geographically rural
    states with persistent teacher shortages. *Online Journal of Rural Research & Policy*, *15*(1), 1.

Oyen, K., & Schweinle, A. (2020). Addressing teacher shortages in rural America: What factors
    encourage teachers to consider teaching in rural settings? *Rural Educator*, *41*(3), 12-25.

Peterson, P. K., Osseo, M. N., Baule, S. M., & Winona, M. N. (2023). Preventing burnout among early
    career teachers. *AASA Journal of Scholarship & Practice*, *20*(3), 18-27.

*Tennessee pioneers permanent program to become a teacher for free, first state to sponsor registered
    teacher Occupation apprenticeship*. Tennessee State Government - TN.gov. (n.d.).
    https://www.tn.gov/education/news/2022/1/13/tennessee-pioneers-permanent-program-to-
    become-a-teacher-for-free--first-state-to-sponsor-registered-teacher-occupation-apprenticeship-
    .html

Tran, H., Hardie, S., Gause, S., Moyi, P., & Ylimaki, R. (2020). Leveraging the perspectives of rural
    educators to develop realistic job previews for rural teacher recruitment and retention. *Rural
    Educator*, *41*(2), 31-46.

*U.S. Education Secretary Miguel Cardona Calls on States, Districts, Higher Ed Institutions to Address
    Nationwide Teacher Shortage and Bolster Student Recovery with American Rescue Plan
    Funds*. (2022, March 28). U.S. Department of Education. Retrieved February 28, 2024, from
    https://www.ed.gov/news/press-releases/us-education-secretary-miguel-cardona-calls-states-
    districts-higher-ed-institutions-address-nationwide-teacher-shortage-and-bolster-student-
    recovery-american-rescue-plan-funds

Wonthey, W. (2019). The critical role of apprenticeship programs. *State Education Standard*, *19*(3),
    30-46.