

Rural Field Experiences: Promising Practices

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Introduction

There is a shortage of mathematics and science teachers in rural Kansas, and in order to meet that need the *Noyce Teacher Leaders for Western Kansas* grant was developed (NSF Grant #1239991). In Kansas for the last two years, there were 40 vacancies in mathematics and 38 in science in fall 2017; 35 mathematics vacancies and 42 science vacancies in fall 2018. Many of these vacancies (17 mathematics and 26 science) were in southwest and southeast Kansas, and many of those remained unfilled. Western Kansas continues to have the biggest issue with vacancies and there is a disproportionate number of vacancies concentrated especially in southwestern Kansas (Bisaha, 2018).

Of Kansas' 286 school districts, 207 are rural as defined by the U.S. Department of Education. The rest are classified as town, suburban or urban school districts. Although we are producing some middle and high school mathematics and science teachers, the rural areas are still lacking in highly qualified teachers because rural placements are not generally the first choice for teacher candidates. Rural schools report more difficulty in filling vacancies, predominantly in STEM fields (Player, 2015).

This University is uniquely positioned to fulfill the science and mathematics education needs. To address this need, the University received the *Noyce Teacher Leaders for Western Kansas* grant (NSF #1239991) to recruit mathematics and science teachers prepared to serve in rural schools and communities.

This article examines the efforts of a teacher preparation program in western Kansas to provide pre-service teacher candidates with an introduction to rural school teaching through a rural field experience in which candidates are totally immersed in the rural school setting and rural life.

Description of Intervention/Noyce Project

Pre-service teacher candidates who are awarded the Noyce Teacher Leaders for Western Kansas scholarship are required to complete a seminar, *Rural Issues and Challenges for New Teachers*, to help candidates develop an understanding of the unique challenges and benefits of living and teaching in a rural community. Topics addressed during the seminar include: the power of community involvement, understanding rural culture, designing a curriculum that integrates the standards with community and school core values, using a community's culture and history to teach essential content, and developing leadership skills for rural teachers. In addition, candidates are required to participate in an immersive week-long rural field experience in southwestern Kansas. Attracting and maintaining highly qualified teachers within the STEM

disciplines in rural areas is a challenge, therefore we have partnered with the Southwest Plains Regional Service Center to place pre-service teacher candidates in a rural school setting for one week. The partnerships formed have had a positive and broad impact on attracting and retaining high quality mathematics and science teachers for rural schools. The primary goal is to prepare teacher candidates to be successful in a rural school and rural community. In this article, we intend to focus on one significant factor: the rural field experience.

Literature Review

Since the 1980s, a shortage of mathematics and science teachers was recognized (Levin, 1985; Rumberger, 1987). In the rural context, Collins (1999) finds rural school districts face challenges recruiting and retaining in specialized subject areas.

Monk (2007) finds several challenges facing rural school districts, including teachers who often teach out of their core certified field and rural school districts in “remote” locations making it difficult to attract applicants without connections to the area.

Rural teachers maintain close community ties, and 80% of teachers stay within 13 miles of their home community. The “grow your own” system is likely in rural schools (Lavelley, 2018). Researchers argue that rural school districts face challenges in recruiting and retaining high quality teachers especially in difficult-to-recruit subject areas such as science and mathematics. Darling-Hammond (1999) found that “high quality” teachers are one of the most important factors to improve student achievement. Rural school districts tend to have difficulties recruiting and retaining teachers in mathematics and science (Brownell, Bishop, & Sindelar, 2005). Factors such as salaries, teaching demands, and opportunities make it difficult for out-of-area applicants to compete with their urban or suburban counterparts.

Rural Field Experience/Preparation

In preparation for the Rural Field Experience, during the *Rural Issues and Challenges for New Teachers* seminar, Noyce Scholars research rural schools in the state and specifically the rural school where the Rural Field Experience will be completed. Research includes information about rural schools, the State Department of Education Report Card for specific schools, and a community study of the rural placement. The Noyce Scholars then present their findings to their peers during the seminar. Additionally, Noyce Scholars have opportunities to connect with rural school leaders and past Noyce Scholars during the *Rural Issues and Challenges for New Teachers* seminar.

Rural Field Experience/Details of the Program

The partnership between the University and the Southwest Plains Regional Service Center (SWPRSC) has been the key to the success of the Rural Field Experience. SWPRSC personnel have been instrumental in working to assign teacher candidates to some of the best STEM teachers in that region of the state, and in turn, these assignments have further strengthened the commitment of the teacher candidates to continue with a career in STEM teaching. Although these placements could have been done by the Noyce team, the process would have been undoubtedly more difficult and may not have yielded the same positive response from the teacher candidates due to the fact that the SWPRSC is so heavily invested with

teachers in the southwest Kansas region. Thus, the idea of a partnership within the placement region (whether urban or rural) is a wise decision.

A typical Rural Field Experience week starts on a Sunday in early January; after high schools have restarted but spring semester classes have not yet begun. The Noyce Scholars drive to a central location to meet over dinner with a SWPRSC employee who will serve as their primary contact during the week-long experience. After last-minute details are completed, such as each school's location, start time, exchange of phone numbers, etc., the Scholars are sent to their motel for the week, or in some cases, driven to the site of host families for schools. Some of these schools are so isolated that driving from the base motel would be impractical. The motel or host family will act as the home base for the week-long experience. Two Scholars found the experience of living with their assigned teacher to be culturally immersing and beneficial.

As Monday morning arrives, the teacher candidates who are staying in the base motel will now need to rise early, since most will have a 20-30 mile drive to their respective rural schools, which may only have 100 students total from grades 9-12. Most schools are in farming communities, and are the only school in the county. Upon arrival, the teacher candidates now experience what it is like to have a full day of teaching, followed by extra-curricular activities which commence after school ends and any possible grading or lesson planning for the next day. After the day and a drive back to their home base, the Scholars can share experiences with each other before retiring for the night.

Friday, the Rural Field Experience concludes with a trip back to the SWPRSC in Sublette, Kansas. The Noyce Scholars meet with both University and SWPRSC personnel to debrief the week, and to get a personal tour of the SWPRSC, so they can become familiar with benefits provided by a regional service center once they become a full-time teacher. After this half-day, the Noyce Scholars are dismissed and the field experience ends. During the debrief, there was a consensus among participants that the Rural Field Experience enhanced their desire to be a teacher while multiple participants stated that the field experience helped them decide what grade level they wanted to teach.

Voices from the Field

From the last five years, we have gathered qualitative data that indicates that the Rural Field Experience and Seminar is a valuable component of the rural field experience.

One Noyce Scholar explained their experience, "They provided me the opportunity to interact with high school students from an adult perspective, which I believe helps teach me professional methods of interacting with students." When asked what the most important component of the Noyce Program, one Noyce Scholar explained, "The most important to me was talking with experienced teachers. I like that when we brought up a subject, the teachers didn't just say 'we will cover that later.' They stopped and took time to talk about what we wanted to talk about also."

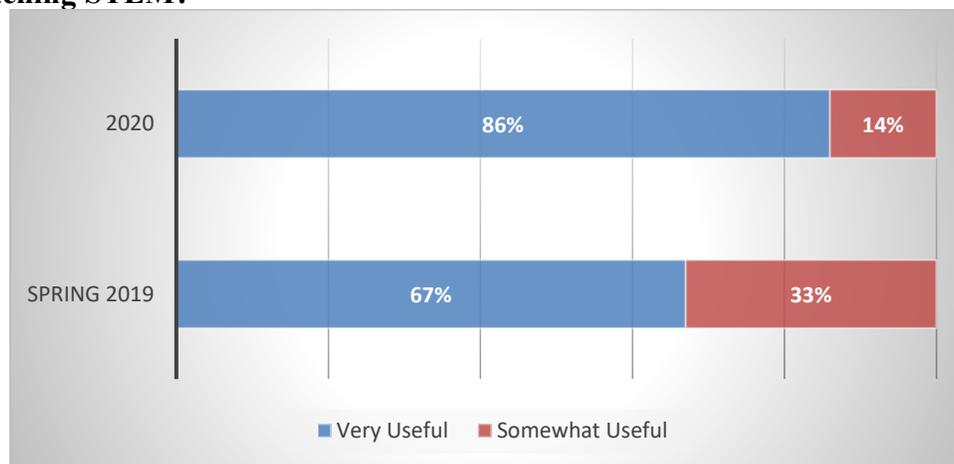
According to the Noyce Scholars, the Rural Field Experience is the most important component of the overall experience with the Noyce program. Participants stated that the field experience made them feel like they were actually teaching in the school system. Scholars benefited from the teacher and student interactions and were able to see how smaller schools

function. Some commented on the “quality time to share experiences with each other during the week, and how exhausted they are after following this schedule.” Noyce Scholars benefited from the teacher and student interactions and were able to see how smaller schools function.

Scholars also observed and noted cultural and equity issues related to rural schools and its implications for classroom instruction. One Scholar said, “The field experience helped us gain a better appreciation of the diversity in rural schools, not only with regard to race and ethnicity, also poverty and students with special needs.” According to many Scholars, “Some students work really hard on school, but some work to support their families and school is not important. Poverty is an issue.”

When Noyce Scholars were asked about their rural field experience, the vast majority of 2020 scholars (86%) responded “very useful” when asked the question “how useful did you find the rural field experience in preparing you for a career teaching STEM?” One student (14%) felt that the rural field experience was “somewhat useful.” Four students (67%) in 2019 felt the experience was “very useful” and two students (33%) felt the experience was “somewhat useful.” No students in 2019 or 2020 felt the experience was “not useful at all.”

Figure 1: “How useful did you find the Rural Field Experience in preparing you for a career teaching STEM?”



Lessons Learned/Final Summary

Placing Noyce Scholars in the Rural Field Experience during January between the fall and spring semesters is the most efficient; December is not effective. It is not clear whether being placed in the home of a teacher has any benefit. Noyce Scholars asked for increased time with the administrators, as well as more structure provided for observations and engagement by the teacher candidates. The rural field experience appears to be formative in reinforcing the career choice for teaching in a rural school.

Overall, the following components of the program were especially meaningful to all participants: 1) the opportunity to hear and interact with award-winning teachers, 2) the opportunity to observe typical teachers, having unrestricted access to their daily routines, 3) out-of-class opportunities to attend funded trips to conferences and workshops, and 4) the relationships they formed with new teachers they met who will be their future peers. Most

participants found the Rural Field Experience to be “hugely” beneficial. The opportunity to take a full week to “shadow” several teachers interacting with their students was an invaluable experience that changed their perspective and understanding of a rural teacher, and positively reinforced their desires to be part of the Rural Field Experience.

In conclusion, the rural field experiences meets the needs of Noyce Scholars, but also provides a foundation for which to expand mathematics and science education in western Kansas. Although many of the Noyce Scholars come from rural schools, they also learned what it is like to teach in a small rural school.

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