Journal of Vocational and Technical Education

Editor:
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Volume 12, Number 2 **Spring 1996**

TECH PREP AND THE RURAL CONTEXT

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Running Head: Tech Prep

Abstract

This article addresses the implementation of tech prep in rural schools. Literature is cited that notes a common urban bias of federal and state legislative efforts. Even though schools in small towns serve over one-third of the students in the United States, a relatively minor amount of research has been conducted on their behalf. This paper highlights reflections of rural teachers involved in the implementation of tech prep. Their comments provide insights into the thoughts and feelings of teachers actively engaged in implementing tech prep in rural settings.

TECH PREP AND THE RURAL CONTEXT

Tech prep is a federally driven intervention for schools that is intended to serve the needs of the United States' economy. Similar to other programs that have emerged from federal legislation and funds, interventions envisioned at the federal level are often difficult to plan and implement in schools spanning a full range of contexts: urban, suburban, and rural. Teachers are confronted by many issues and concerns as they struggle to interpret the meaning of this intervention in rural settings.

Two opening sections of this article set the stage for discussing tech prep in a rural context. The first section examines the definition of rural schools, the status of rural education and rural schools, and the

marginalization of rural educational research. The second section presents the concept of tech prep (as it was conceptualized at the federal level) and how some writers perceive its present and future value.

Section three contains personal reflections of rural educators who participated in tech prep projects. Their excerpts provide perspectives of tech prep at small, geographically isolated schools. Their depictions are not intended to form a definitive description of the typical tech prep scenario across rural schools. The quest for the emergent meaning of tech prep in rural schools should be recognized as a perennial venture (Thornton, 1993). The accounts by these educators offer insight into the peculiar aspects of tech prep in rural settings -- and with each account there is a glimpse of that with which they struggled and that which flourished.

The Unique Context of Rural Education

Why is so little known about rural schools? A major blockage of the knowledge base of rural education has been the lack of sustained inquiry about the unique problems of rural schools. For several decades the research agenda for rural schools has been marginalized. As noted by DeYoung (1987), several educational researchers openly question national research agendas and their utility for serving rural issues and problems. These scholars infer that massive quantitative studies, a common approach of educational researchers in the United States, do little to resolve the community-based needs that are intertwined in the culture of rural schools.

The marginal status of rural schools in the nation's educational research agenda is an interesting phenomena. Although schools in small towns and rural environments serve over one-third of the students in the United States, a relatively minor amount of research has been conducted regarding rural schools, their students and teachers, and their learning environments (Federal Interagency Committee on Education, 1991). This dearth of research is noticeable in the urban bias of federal and state educational policies and actions.

DeYoung (1987) asserted that most scholars who work in the area of rural education share a common core of beliefs about it. Collectively, these beliefs portray an inadequate concern at state and national levels for the unique context of rural education:

1. Rural education in the United States is viewed as some type of step child that does not beget the respect of professional educators and researchers alike.
2. Administrative, curricular, and staffing solutions that are frequently posed for urban and suburban situations may or may not be of value for rural settings.
3. Demographic, economic, administrative, vocational, and community differences and needs that exist in several rural areas of the country deserve ample attention from educational researchers and policy makers if rural schools are expected to succeed.

Another general belief about rural schools pertains to their financial conditions. Many rural school districts are fiscally strapped, being generally poorer than their urban and suburban neighbors (Alexander, 1990). Rural school districts often have low property values and minimal sales tax bases to support their efforts. This lack of capital is not only fostered by local economic conditions, but it may also be exasperated by state policies. Alexander (1990) lamented that perhaps the most obvious and disconcerting "institutionalization of disadvantage" for rural schools has been performed by state governments through their methods of financing public schools.

The "institutionalization of disadvantage" hinders rural students, a substantial part of the nation's prospective labor pool, from gaining access to tech prep -- a form of education that is specifically designed to prepare young people for technical careers. The following section presents an overview of the concept of tech prep, the legislative language from which it was derived, and characteristics of these programs.

A Brief Description of Tech Prep

Tech prep is a concept driven by legislative language established at the federal level. Title IIIE of the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990 describes tech prep as a

combination of secondary and post secondary education with four intended outcomes for learners:

1. tech prep leads to an associate degree or a two year certificate;
2. tech prep provides technical preparation in at least one field of engineering technology, applied science, mechanical, industrial, or practical art or trade, or agriculture, health, or business;
3. tech prep builds competence in mathematics, science, and communications through a sequential course of study; and
4. tech prep leads to placement in employment.

With the preceding legislative language and governmental funds to support them, practitioners forged ahead with attempts to create and implement programs at the local level. Along the way, considerable misconception and confusion emerged (Hoerner, 1993).

Because of the newness of tech prep, many practitioners question how it should be implemented. A select group of national speakers have toured the country pronouncing their view of "what a tech prep program should look like." Parnell (1993), a staunch advocate, proposed that the most successful tech prep programs typically contain the following characteristics:

1. a structural and substance-rich Applied Academics curriculum that provides opportunities for all students to understand the relationship between academic subject matter and real-life application
2. high standards for achievement, as well as thorough assessment policies
3. learning and guidance strategies that allow all students to acquire positive attitudes toward life skills, lifelong learning, and family-wage career opportunities
4. teacher-counselor pre-service and inservice programs about tech prep
5. collaboration among high school, college, and employer representatives
6. strategies aimed at changing attitudes about vocational-technical education
7. community and technical college "bridge" programs that prepare adult students who have missed the high school portion of the sequence to move into and succeed in the tech prep program. (p. 7)

The volume of research regarding tech prep is slight. The newness of this concept is partly responsible for the lack of inquiry. Other factors may pertain to federal and state funding mechanisms that do not support research as a vital element for enhancing tech prep at local schools. Law (1994) noted that tech prep lacks both consistency in its definition as well as clarity about its conceptual foundation. Tech prep is a prime example of theory lagging behind practice in an educational intervention.

Interpreting Tech Prep in Rural Schools

For over fifteen months this writer assisted a rural community college, an area vocational school, and eight rural high schools in implementing a state and federally funded tech prep project. This work included a qualitative study that attempted to interpret aspects of tech prep that were behind the curtain of federal regulations, state policies and other elements of the unknown. Each rural school was represented by an interdisciplinary team of teachers -- what came to be known as its tech prep team. The typical team consisted of four to seven teachers, representing the disciplines of English, mathematics, science, counseling, and vocational education.

These schools may clearly be defined as rural -- according to a number of measures or criteria (Bosak and Perlman, 1982). Student enrollments ranged from 65 to less than 500. They represented communities with populations ranging from 500 to 4,600. The communities were located in geographically isolated areas, with considerable distance to a town with a population over 100,000. Agriculture was the predominant industry in this region, and the remainder of the industrial base had experienced significant erosion during the recessionary period of the 1980s and early 1990s.

How did these teachers view tech prep in their rural schools? As a means of instilling deeper thinking about the processes in which teachers were engaged, they were enlisted to reflect on their experience. They were encouraged to seek insights about themselves as actors in an unfolding drama grounded in a school reform

initiative. Twenty-five teachers agreed to keep reflective journals regarding their experiences with tech prep. Reflective journals allowed teachers to integrate personal knowledge, practical experience and specific content about tech prep with contextual issues prevalent in their schools and communities (Surback, Han, and Moyer, 1991). Teachers were encouraged to record their successes and failures and joys and frustrations as they launched tech prep in their schools. All of the journals were reviewed as a means of capturing the teacher's interpretation of thoughts, feelings, and actions associated with tech prep in a rural context (Sparks-Langer and Colton, 1991).

Visits to these schools, interviews with teachers, and personal journals of teachers provided an evolving reality of tech prep in rural schools. This multiplicity of sources and means to collect and analyze information provided a triangulation of data that supported the emergence of select notions and concepts (LeCompte and Preissle, 1993). Through a process of collecting and ordering these emergent ideas (Strauss, 1987) three main themes surfaced. These main themes are discussed in the following section in an attempt to "make sense" (Lincoln and Guba, 1985) of tech prep and lead to a greater understanding of it in the rural context.

Issue 1: Rural communities have a limited business and industrial base from which they may forge relationships.

> Interaction of teachers with businesses and industries is an important element of tech prep (Hoerner, 1991). This interaction is expected to occur several ways: work-based learning opportunities for students, work observation or intern experiences for teachers, partnerships for planning among education and private sector representatives, and sharing of resources, to list a few examples. Historically, vocational education teachers have relied on the private sector for these types of relationships.
>
> Private sector involvement is different for tech prep as compared to traditional vocational education programs. The key difference is that tech prep expands the involvement to teachers who represent many disciplines -- not just vocational education teachers. Tech prep makes this an important staff development issue for all teachers. For decades vocational teachers made their connections with the private sector through advisory committees, cooperative vocational education programs, vocational student organizations, and other mechanisms. These connections were important methods for replicating real work situations in vocational programming. But what about academic teachers? How have academic teachers witnessed the mathematical, scientific, and communicative skills applied by workers in the work place?
>
> The following excerpts are reactions by teachers to business and industry site visits. One commented about benefits students could gain from such a connection:
>
> > This was a fascinating experience. Things have changed a lot. People are now having to work together instead of independently with "no brains." Computers are utilized to clock in, order parts, analyze programs, and ship out a final product. All of these aspects can be taught to students before we even get them out into the workplace.
>
> Another teacher commented:
>
> > More and more I see a need for students to get into the workplaces to see what people do for a living. They need to see occupations in action, and they need to experience the atmosphere of various work places. The laboratories that we visited were fascinating! Especially the microbiology lab -- the woman who spoke about problem solving and "detective work" really would have an impact on kids. This was a very high tech operation.
>
> Of course, there are "worthy" and "unworthy" businesses and industries that one may choose to

visit. A problem for many rural communities is the limited selection from which to choose. What options exist if local companies are not places that should be show-cased to teachers and students? What if these places have less than desirable working conditions? And what if these places represent the few employment options locally available for youth upon graduation from high school? Schools in isolated rural communities face this problem when their industrial base abandons the region in search of greener pastures.

Some tell-tale signs of work settings visited by teachers of this project had nothing to do with the cleanliness of the plant or its air quality. Attitudes were apparent through subtle (or not so subtle) cues in the workplace. One teacher wrote about the lack of concern for education and development at a small plant that she visited.

> The man running this place - or rather the factory floor manager - is a "good ole boy" who is quite proud of his lack of education. They only want stupid people here. They think anyone else wouldn't fit in. All of their machine schedules and routing sheets are hand written. They have a rickety old box of set-up sheets for all their factory work and there's no backup. They don't have it on a computer - nothing. I asked about it and the floor manager said, 'Oh, no one could use a computer - that would be ridiculous.' I asked him why they didn't even have a back-up copy somewhere. He thought it wasn't necessary. Talk about the opposite of a modern plant - this is it.

Issue 2: Interdisciplinary teams of teachers functioning in rural schools may struggle as change agents for tech prep

Tech prep is described as an intervention strategy for school reform. Like other change strategies, tech prep faces unique problems stemming from the contextual setting of the school. A common problem is creating and maintaining an effective team that moves the concept of tech prep forward. Creating an interdisciplinary team of teachers at a rural school can be challenging simply because of the limited number of teachers from which to choose. Some rural schools have "one teacher departments." What happens if the only mathematics teacher at the school is diametrically opposed to the concept of tech prep? Or, perhaps a more common problem, what happens when the teaching load prevents the mathematics (or other) teacher from being a full-participating member of the tech prep team?

After-school meetings are a problem for rural teachers, who often sponsor extra-curricular activities. Extra curricular activities have special significance for student character development in rural schools. Greater participation rates are needed from teachers and students because of the small size of the school (Reynolds and Reynolds, 1990).

Rural schools, because of their small staffs, have unique limitations and confinements within which they must try to build teamwork among tech prep teachers. One teacher wrote about her appreciation at receiving release time to meet with her tech prep team:

> The release time is a blessing. It feels good to be creating something like this. The time crunch is the biggest problem we are facing in a small school. There are so few of us and we have so many obligations.

Team members' interests in tech prep may ebb and flow as a function of their enthusiasm. Problems surface when key team members lose interest in tech prep and begin to shirk team responsibilities. Although this occurrence may evolve at any school, the impact may be more severe at a rural school. One team member wrote about this dysfunctional element when an administrator began to lose interest in serving on the tech prep team:

> She stated that she didn't want to mess around with long meetings. She and two other members are pretty much sick of being on this committee and have vocalized

> that they don't want to put any more time into this meeting than is absolutely necessary. They are already saying that this is it for them. The end of the year and they are finished. I sometimes think that they are already finished. I wish they wouldn't shove things off to be done in the last minute like they did with this planning thing. I wish someone else was in charge.

One must ponder, "What solutions may be devised at rural schools to cope with such unfortunate situations?" When the group leader openly laments that the tech prep team is of little concern to her or him, members can hardly be expected to function as an effective team. Additional human resources from which these rural teachers may seek assistance are either unavailable or in short supply.

Issue 3: Implementation of tech prep is fraught with ambiguity. Teachers suffer from a lack of realistic expectations for implementation, a paucity of concrete examples of "what works," and uncertainty regarding how tech prep meshes with grander reform strategies for rural schools.

For many rural teachers, traveling around and listening to others talk about tech prep has lost its appeal. They are tired of talk. They want to see, touch, and feel real content and substance that can be tested in a rural school. One teacher lamented this feeling after hearing a speaker at an inservice session.

> When the speaker was questioned about tech prep things that he had previously done in his classroom, he said he never wrote anything down about it. He always wanted to be spontaneous about it. He said things like, 'You have to see where integration fits and then match things up' . . . like we all know what that means and how to do it. I was very disappointed because I wanted some concrete examples. I felt like I was at his press conference.

A concurrent notion was voiced by a practicing teacher who was bored with the rhetoric surrounding tech prep. Her requiem at the passing of another tech prep conference was, "I only wish they had a tech prep swap meet with ideas that different teachers had found to work." For many, tech prep is an unclear concept. Little is known about rural schools that have planned, implemented, and evaluated tech prep programs. A teacher described the uneasy feeling of developing something new when barely anything is known about the desired outcome:

> We seem to be on track. I hope so. We are creating new programs -- it is a little scary. There is so much to consider -- so many questions. Are we doing it right? Is what we are creating really tech prep? Are we just giving a face lift to what we already have?

Although teachers may generally support tech prep, many have struggled with attempts to instill changes in their schools based on a concept that appears to them as a nebulous apparition. Rural teachers are unsure as to whether they are moving too fast or too slow, or whether their expectations are realistically aligned with their available time, human resources, and funds. A teacher voiced apprehension because of the unknown parameters of tech prep:

> The most puzzling thing to me has been the fact that there are no boundaries or guidelines to follow. I realize that every school's tech prep program will be different, but we as a tech prep design team were very concerned about whether we were doing enough. It would have been nice to get together with other schools to see how they were approaching it. The future is unclear to me. How long will tech prep be funded? When the money runs out, then what will happen? We will have developed some curricula, but where do we go from there?

The frustration from working on a tech prep team that is mired in ambiguity can reach a crescendo of desperation. High hopes and good intentions are apt to deflate from the nagging

pressures of unrealistic expectations and uncertain futures. Rural teachers are likely to question whether the effort they are putting forth is worth the accompanying aggravation -- especially in light of other demands pulling on their time and energy.

Fortunate is the tech prep team whose members are skilled in group dynamics. The members can anticipate and cope with stages that a group must move through as it strives to become a highly effective work team. Tech prep teams can be confronted with problems that have implications for curriculum, instruction, and personnel that extend beyond the purview of the team. The following example depicts this dilemma:

> As our staff works together, I am beginning to sense the future friction we are likely to experience. All of this "team building stuff" that we use with the students is beginning to hit home for our tech prep team. A concerned teacher trying to make positive progress (in my opinion) felt frustration from a colleague....another expressed concern about a department member with a vision that seems much different and extreme as compared to the rest of the department. The good news is that already many of us have publicly stated we know not everyone will agree with our ideas, but we are willing to bend. I think if I keep saying that, it will help. I believe I will start printing little messages across the bottom of my correspondence, such as 'It's OK to disagree!'

Another dimension of the problem associated with building tech prep teams pertains to school culture. Though it certainly helps to have the team receive training on team building, rural schools may have unique characteristics that impact on team approaches. One teacher wrote about this concern in her school:

> Working in a group is a problem for many small school districts because we are used to being one person departments, we just 'do it ourselves' and don't brainstorm with others. It took us a while to adjust, but in retrospect, I am glad we stuck with it because I feel we have come up with some good, usable, and beneficial programs. We now have to get the rest of the staff comfortable and working together. Our staff has always worked together as a team to help in general school things, but our curriculum's were very much our own and did not have anyone else involved in their make-up. This is a definite adjustment.

Rural schools have few secrets. When one teacher is involved in an activity, it somehow indirectly or directly effects other teachers. Unexpected, incidental outcomes can surface when a team of teachers is working on tech prep and others are not involved. A team of teachers, as described below, made a presentation to their faculty to promote tech prep. One teacher wrote about the surprising reaction by the faculty:

> Following our presentation on tech prep to the faculty of our school, we detected a ground swell of resentment. Not necessarily against tech prep per se, but some faculty are upset, jealous, or annoyed at the time the tech prep team has been released from school to attend team meetings and site visits. This has placed an additional burden on them. It would seem that one of the results of our activity is that we are initially off on the wrong foot and will have some heavy public relations work to do with our faculty to recover.

Tech Prep and the Rural Context: Concluding Thoughts

Researchers affiliated with rural America have noted that federal policy and educational research agendas are seldom aligned with the unique needs of rural settings. For example, Hobbs (1983) noted a general agreement by rural sociologists that greater attention should be focused on the unintended as well the intended consequences of state and federal policy. He inferred that rural audiences are not well served by policies tailored to serve the greatest numbers. Likewise with educational research, DeYoung (1987) noted that much of it exhibits an urban bias.

The legislative language of tech prep and the limited research agenda that has accompanied its formative

years indicate that tech prep also reflects an urban bias. Those who forge state and national educational policy and those who are influential in crafting research agendas for tech prep appear to be either naive or unsympathetic to the rural context. This marginalization exists despite the location of approximately two thirds of all school districts, half of all public schools, and one third of the nation's teachers in rural areas.

Rural teachers who are attempting to implement tech prep need their voices to be heard. Data gleaned from the critical reflective journals of rural teachers illuminates how they interpret, give meaning to, and make decisions about tech prep in their schools (Sparks-Langer and Colton, 1991). Based on reflections of participating teachers, and notions relevant to rural schools as highlighted in this article, the following points are worth noting. Although these suggestions might also be relevant to larger schools, the smallness and isolation of rural schools renders these points particularly poignant.

1. Attention must be focused on the limited business and industry base from which rural schools forge relationships. Alternative means should be explored that will allow rural schools to create relationships with businesses and industries that are not within school district boundaries. Electronic partnerships via two-way interactive video or electronic mail might be used to overcome the geographic isolation that confronts many rural schools (Gooler and Roth, 1990).
2. Federal and state funding for tech prep should not be tied to the availability of vocational education in rural schools. Many rural schools cut vocational education programs because of past periods of financial exigency. Yet, many rural teachers view tech prep as a needed remedy for preparing youth for the work place.
3. Interdisciplinary teams of teachers are commonly used to implement tech prep. However, the smallness of rural schools effects the practicality of this approach. Factors such as one-person departments, extra-curricular assignments, and numerous classroom preparations can be barriers for local planning. Released time and shared planning periods are good starting measures for helping rural teachers find the time and energy to implement tech prep.
4. Policy formulation and research agendas for tech prep must take into consideration the varied contexts found in urban, suburban and rural schools. Specific to rural schools, teachers need access to instructional materials and methods that may be integrated with the rural context. Rural educators would like to see model programs and visit demonstration sites that are operating in rural schools. They find minimal value in visiting a suburban school's million dollar technology laboratory because they know there is little chance of replicating it in their small school.
5. Problems related to staff development for rural educators have been well chronicled (see for example Barker & Beckner, 1987; Horn, 1985; Reed & Seyfarth, 1984; Wood & Kleine, 1987). Rural educators face the double-edged sword of geographic as well as professional isolation. The force of this isolation comes to bear when a rural school grapples with an intervention, such as tech prep, that is ill-structured and open to multiple interpretations. Staff development for rural teachers is needed that stresses the open-endedness of tech prep, the unique context of rural schools, and proven practices of inservice education (see for example Showers, Joyce, and Bennett, 1987).

Tech prep is evolving as a concept for all schools, not just those in rural settings. However, as noted in this article, federal policy and educational research agendas of the past have tended to slight rural education. Researchers and practitioners who specialize in rural education, along with those who are forging a place for tech prep in the nation's schools, need to form a special alliance. This alliance should focus on the growth and development of tech prep in rural schools. Efforts should be made to link rural schools with technical assistance from state agencies, universities, federal regional educational laboratories, and other service providers. The barriers of isolation must be dissolved. Most importantly, rural educators must create learning networks among themselves that will allow the crafting of a shared understanding of tech prep in the rural context.

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