

Alternative Certification: A Solution or an Alternative Problem?

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Abstract

Teacher education is facing a number of challenges such as policy changes, funding issues, and teacher recruitment and retention. These challenges, whether on the national, state, district or school level, contribute to continued teacher shortages. Many school districts are faced with the conundrum of hiring under qualified individuals, leaving vacant positions open, or eliminating positions altogether. Thus, within all subject areas of education, a strong philosophical perspective needs to be developed to answer the question: Is alternative certification a solution to these problems or an alternative problem? This philosophical manuscript investigates the research related to alternative certification within education as a whole, career and technical education, and agricultural education. Research in education broadly indicates a lack of consistency within the current alternative certification pathways and a lack of consistent/positive influence on student outcomes within alternatively certified teachers. It is recommended that future research should investigate the impacts of various certification pathways on students. Furthermore, teacher certification pathways should be based upon solid evidence from research regarding what generates the best learning outcomes for students.

Key Words: alternative certification; teacher certification pathways; alternative certification pathways; teacher preparation; teacher shortages

Introduction

The need for qualified teachers to fill vacancies is an issue facing all areas of education (Donitsa-Schmidt & Zuzovsky, 2014; Flynt & Morton, 2009; National Research Council, 2010). Teacher shortages could be caused by factors at either the macro or micro level (Donitsa-Schmidt & Zuzovsky, 2014). Donitsa-Schmidt and Zuzovsky (2014) defined the educational macro level as national, state, and district levels. Factors contributing to teacher shortages on the macro level include: (a) growing student populations in schools, (b) immigration, (c) policy, (d) prestige of the profession, (e) incentives tied to merit, (f) certification programs, (g) number of newly certified individuals, and (h) individuals leaving education. Micro-level factors in education (Donitsa-Schmidt & Zuzovsky, 2014) occur at the neighborhood or individual schools. Micro-level factors which could impact teacher shortages include: (a) aging of the neighborhood, (b) prestige of the school, (c) teacher burnout, (d) lack of administrative support, and (e) lack of professional development opportunities.

Over time, multiple pathways to certification have been developed to balance macro and micro level factors and maintain a balance of teachers in schools. Pathways to teacher certification

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are numerous and requirements for each pathway vary between states (National Research Council, 2010). While diverse and widespread routes to teacher certification could be considered a positive step toward filling nationwide teacher shortages, little evidence exists regarding the effectiveness of a particular pathway to teaching certification in regard to a teacher's impact on student learning (National Research Council, 2010). Two common pathways to certification can be categorized as traditional and alternative certification. As defined in this philosophical paper, traditional certification involves teacher preparation through and completion of a professional educational teacher preparation program. Alternative certification is defined as teacher preparation via entering the profession through means other than a professional educationally-based teacher preparation program, such as: emergency certification, temporary certification, work-based programs, and structured university and/or private providers of alternatively labeled certification pathways (National Research Council, 2010). Alternative pathways to certification, in part, were created to fulfill a current and historic supply and demand issue for highly qualified teachers.

To appropriately focus on the issue of alternative pathways to teacher certification as a solution to widespread teacher shortages, it is important to discuss the magnitude of teacher vacancies. In the United States, there are roughly 90,000 public schools that employ approximately 3.6 million elementary and secondary teachers (National Research Council, 2010). Each year, approximately 200,000 teacher candidates complete a teacher preparation program (National Research Council, 2010). According to the National Center for Education Statistics (2015), in 2013 there were 3,264,900 public school teachers and of those 250,100 left the profession. Thus, if the number of traditionally prepared teacher candidates entering the classroom remained constant, approximately 50,000 openings would have been left vacant or filled by alternatively certified individuals. The teaching vacancy numbers justify a clear demand for alternative pathways to teacher certification. As such, 20-30% of all teacher candidates hired have completed one of the approximately 130 different alternative certification pathways (National Research Council, 2010).

The teaching vacancy numbers within the agricultural education subject matter area mirror teacher education in general. In 2014 the National Agricultural Education Supply and Demand Study found of the 1,366 total openings for agricultural educators across the nation, nearly 13% ($n = 183$) were filled by alternatively certified individuals (Foster, Lawver, & Smith, 2014). In 2016, an increase was seen in both the total number of agricultural educator openings ($n = 1,476$) and the number of alternatively certified teachers fulfilling vacant positions ($n = 245$; 16.6%) (Smith, Lawver, & Foster, 2017). Additionally, 86 full time and 10-part time positions went unfilled in 2014 (Foster et al., 2014) and 66 full time vacancies were noted in 2016 (Smith et al., 2017). Since 2011, an average of 67 positions were eliminated each year, primarily due to a shortage of qualified individuals to fill the vacancies (Foster et al., 2014). This trend was further substantiated in 2016, where 98.5 positions were lost and 73 programs closed (Smith et al., 2017). As teacher shortages and program closures continue in agricultural education, alternative certification pathways should be examined for their potential as an alternative solution.

Alternative Certification as a Pathway to Teacher Certification

With over 130 different kinds of alternative certification pathways across the nation, establishing a normed description for alternatively certified teachers is nearly impossible. Alternative certification pathways vary by candidate selection and entry, intensity and rigor, and duration (National Research Council, 2010). For example, while some alternative certification programs have specific grade point average or other requirements for entry into the pathway, for others, being a willing and available candidate is seemingly the only entry requirement. To establish some element of consistency and rigor for alternative certification, Walsh and Jacobs (2007) identified four quality indicators for alternative certification pathways: (a) academic selectivity, (b)

strong subject-matter knowledge, (c) streamlined and practical sequence, and (d) intensive new teacher support. In the Walsh and Jacobs' (2007) framework, academic selectivity was defined as setting strong academic guidelines for which candidates are judged for entry into a certification program. They defined strong subject-matter knowledge as the candidates' ability to demonstrate a high level of content knowledge. Streamlined and practical sequence was defined as a reduction of coursework to focus strictly on knowledge needed to help candidates be successful in the classroom. Finally, they described intensive new teacher support as either the availability of a pre-serve experience for candidates and/or the availability of a mentor program. Walsh and Jacobs (2007) investigated the completeness of 49 alternative certification programs in accordance with the identified quality indicators. Regarding selectivity, 70% of the programs were administratively housed and programmatically executed in universities or colleges with the remaining 30% either administrated by local school districts or private entities. For the quality indicator of subject-matter knowledge, it was discovered 42% of the alternative certification pathways did not require candidates to have a college major in the certification subject area. Regarding the quality indicator for streamlined and practical sequence of course requirements, 34% of the alternative certification pathways investigated, met the standard for a reasonable course load and 27% allowed candidates to take more than 12 hours of coursework during the first year of the program. Finally, for the quality indicator of new teacher support, it was discovered contact with a mentor was either entirely absent or minimal for all 49 alternative certification pathways investigated. None of the 49 alternative certification pathways investigated in the study met all four-quality indicators. Inconsistent alternative certification pathways can create problematic inconsistencies within the quality of individuals entering teaching.

Perhaps one of the greatest inconsistencies among alternative pathways to certification is the required coursework and duration of programs to become certified. Alternative pathways to certification have been questioned in the literature as academic and professional short cuts to certification (Watts, 1986), and their real or perceived lack of rigor and quality has been asserted. Darling-Hammond & Bransford (2007) state some models of alternative teacher certification offer only brief overviews of teaching fundamentals and could only require a few weeks' worth of professional preparation. Typically, alternative certification candidates complete the required course work while teaching, and many inconsistencies exist among coursework requirements. Some states mandate the amount and content within the coursework, while others have no specifications whatsoever (Walsh & Jacobs, 2007). Watts (1986) suggests that alternative certification pathways are deficient and thus less rigorous in at least one of four critical preparation areas: (a) applicants may teach in subject areas in which they have no experience, (b) applicants may enter with less college preparation, (c) applicants may complete the program with little to no pedagogical preparation, and (d) applicants may not be required to pass competency examinations for licensure. In a study for the National Center for Education Evaluation, Constantine, Player, Silva, Hallgren, Grider, & Deke (2009) investigated teacher preparation requirements based upon certification pathways. They determined that the teachers who participated in alternative certification programs received a varying amount of teacher preparation instruction, ranging from 75 to 795 instructional hours. Further, they found the amount of coursework required for candidates to complete during their first year of teaching also varied from 63 hours to 150 hours on average of total instructional time. Given that a traditional 3-credit hour college class typically comprises 75 or more total instructional hours, it's easy to see why alternative pathways to teacher certification could be perceived as academic shortcuts in comparison to their traditional certification counterparts.

Many traditional pathways to teacher certification rest on the laurels of rigor in teacher preparation as outlined by entry selectivity, subject matter expertise, and total instructional time required for academic and professional preparation. The ultimate indicator of rigor within a

pathway to certification, however, is the connection between a teacher's level of preparedness and the performance of their students. Research on alternatively certified teachers and their influence on their students is limited and with mixed results. In a randomized experimental study on the impact of alternatively certified teachers on student achievement (Glazerman, Mayer, & Decker, 2006), it was determined that teachers who participated in the Teach for America alternative certification program had a positive outcome on their students' math achievement scores, but had no impact on their students' reading achievement scores. Further, they also determined that the Teacher for America candidates had no influence on other student outcomes such as attendance, promotion, or disciplinary incidents, and were more likely to report student behavior problems (Glazerman et al., 2006). In other research on the connection between the nature of teacher preparation and the outcomes of their students, Constantine et al. (2009) found no significant statistical difference in student performance based on if the teacher was traditionally or alternatively certified. Further, they found no significant difference in student performance based on if the alternatively certified teacher was enrolled in coursework. Additionally, a teacher's demographics and the coursework required for their certification were not related to student achievement (Constantine et al., 2009).

As indicated in the backdrop of the literature, the route to preparing quality teachers to fill many teaching vacancies is complicated. While alternative certification pathways offer a potential solution to maintaining a supply of classroom teachers, they are often perceived as academic short cuts. Alternatively certified teachers are considered to be "less prepared", or at minimum, inconsistently prepared as compared to their traditionally certified counterparts. Yet, this claim of superiority for traditional pathways to certification is difficult to conclusively assert, because the research on the connection between a teacher's professional preparation and their influence on student learning is limited and offers mixed results. Given the complexities of the problem for teacher certification, teaching disciplines across all subject matter areas could benefit from articulating a philosophical stance on alternative pathways to certification as a future guide to professional policies and practices within the discipline.

Purpose and Objectives

The purpose of this philosophical paper is to articulate the current position of alternative pathways to teacher certification within agricultural education. The following objectives were constructed to fulfill this purpose:

1. Identify the presence of alternative certification within the empirical research in agricultural education as situated in the broader context of career and technical education.
2. Examine the state of alternative certification within agricultural education.
3. Describe recommendations for future research and current practice regarding alternative certification within agricultural education.

Methods

The design of this study was philosophical in nature. A clear philosophy serves to establish common truths and principles that ultimately guide professional decisions and perspectives. Philosophical approaches to research are unlike typical social sciences research methods, and rather seek to argue a research-based set of perspectives (Burbules & Warnick, 2006). Philosophical methods include a thorough connection to the literature, a driving purpose, and a set of interpretations with the inclusion of multiple viewpoints (Burbules & Warnick, 2006). We approached this philosophical paper through a pragmatist epistemological lens (Creswell, 2013), choosing to guide the research by a practical problem, and its subsequent research-based solutions,

within a discipline. The pragmatist epistemological lens was framed by the need to address teacher shortages seen within agricultural education and beyond. We focused a thorough review of the substantive literature toward the presence and influence of alternative certification within education and agricultural education. Literature was coded to establish commonalities and the codes were triangulated. Additionally, peer debriefs among researchers were utilized to ensure credibility and trustworthiness.

The Context of Alternative Certification in Agricultural Education as Situated within the Career and Technical Education

The first objective for this philosophical paper was to identify the historical presence of alternative certification within the empirical research in agricultural education as situated in the broader context of career and technical education (CTE). Agricultural education as a certification subject matter area is embedded within career and technical education, and thus the backdrop of career and technical education provides a more accurate perspective of agricultural education as a teacher certification subject matter area. The research in the alternative certification pathways for CTE teachers in general has grouped around the demand for alternative CTE to fill teaching vacancies, the nature of and requirements for alternative CTE programs, the differences between traditionally and alternatively certified CTE teachers, and the professional preparedness and professional development needs among traditionally and alternatively certified CTE teachers.

Career and technical education comprises six main programs including business education, trade and industrial education, technology education/industrial arts, agricultural education, family and consumer sciences, and marketing/distributive education (Gray & Walter, 2001). Other smaller programs within CTE also include vocational and academic subjects, occupational home economics, technical/communications education, and health occupations. Career and Technical Education teachers account for roughly 25% of all secondary-level subject matter teachers. Although CTE is considered a holistic program, each individual program within CTE is unique and each program has its own professional organization, licensure requirements, and unique pathway to teacher preparation. Although, each program acts independently, CTE licensing and CTE teacher shortages are a holistic problem.

Through the 1970's CTE teacher preparation programs flourished within universities with many CTE programs such as business, agriculture, family and consumer sciences, and trade and industry education all together within one department (Gray & Walter, 2001). Then in the 1980's a decline began of CTE teacher preparation enrollment and as universities began eliminating CTE teacher preparation programs. Teacher shortages within CTE continued into the 1990's due to a lack of Perkins II funding received by universities to support CTE teacher preparation programs (Camp & Heath-Camp, 2007). Researchers speculate that the number of CTE teacher preparation programs have continued to decrease within the last 10 years (Sass, Bottoms, Pritz, Kelley, Foster, & Hodes, 2011). Sass et al. (2011) state another contributing factor to the CTE teacher shortage, is higher CTE enrollment due to the higher number of secondary school students. All of these factors have contributed to CTE teacher shortages across the nation and the increased need for alternative certification methods.

Beginning in the 1980's, New York, New Jersey, and Texas developed alternative certification programs within CTE to address these shortages (Sander, 2007; Wilkin & Nwoke, 2011). Even today alternative teacher preparation programs must be developed and/or enriched because CTE teacher shortages threaten the very existence of CTE (Walter & Gray, 2002). In certain CTE programs such as technology education, the lack of qualified teachers has threatened to close the entire discipline (Gray & Walter, 2001). It has been implied that the traditional

baccalaureate program as a pathway to certification simply does not meet the need for CTE teachers. As such, nearly every state has established emergency teacher certification provisions to hire individuals who have not met the teacher preparation certification requirements. Although it is acknowledged that hiring marginally prepared teachers is not preferable, traditional teacher certification requirements continue to become more rigorous (Gray & Walter, 2001) and thus increasingly difficult and often impractical to attain. Thus, the number of individuals seeking alternative routes to certification has increased and the number of alternative certification programs has simultaneously increased. Gray and Walter (2001) stated, "...that all CTE teacher preparation programs, regardless of mission, develop alternative licensure programs that do not require full-time enrollment" (p. 40). Within CTE much research has been conducted regarding the ways in which teacher candidates obtain alternative certification.

Traditionally, the majority of CTE programs utilized four-year baccalaureate programs to fulfill most of the teaching positions (Gray & Walter, 2001; Walter & Gray, 2002). Some areas of CTE such as trade and industry education and health occupations education have used alternative certification programs to fulfill positions with an emphasis on previous work experience (Gray & Walter, 2001; Walter & Gray, 2002). Zirkle, Martin, & McCaslin (2007) found CTE specific alternative certification pathways are very similar to more core academic areas alternative certification pathways, but that the main difference between alternatively certified core academic teachers and alternatively certified CTE teachers are the occupational work experience requirement and/or the lack of a bachelor's degree for some pathways. Within CTE most states have more than one alternative pathway to receive teacher certification and there is a total of 105 alternative pathways and the average number of pathways per state is approximately two (Zirkle et al., 2007). Zirkle et al. (2007) found 53 of the 105 alternative pathways required a bachelor's degree and 22 of the 105 pathways only required a high school diploma or GED. Further, 32 of the 105 pathways required a teacher preparation program, similar to those in a traditional teacher preparation program. It was also found all 105 alternative pathways required participants to take some form of a subject matter specific test such as a Praxis test, 20 pathways required an additional state designed test, and 14 pathways required an additional National Occupational Competency Testing Institute test (Zirkle et al., 2007). Typically, along with these requirements additional coursework is required. It was found 55 of the 105 alternative pathways required additional coursework to develop the candidate's pedagogical knowledge, philosophy, and practice within CTE education. It was also found 74 of the 105 pathways required some previous occupational work experience with a large variation of the level of experience required (Zirkle et al., 2007). Briggs & Zirkle (2009) found the coursework that was perceived to be the most beneficial to the success of alternatively certified CTE teachers related to classroom management, lesson planning, and student assessment.

While it has been well established that a myriad of different requirements exists for alternatively certified CTE teachers, and the merits of various requirements for the alternative certification pathways has been argued, a glimpse into the superiority of one pathway over another is provided by investigating the differences among differently prepared teachers. Ruhland & Bremer (2003) found a significantly positive difference existed within traditionally certified individuals when asked to rate their program in the areas of pedagogy and knowledge of subject matter. Further, no significant difference was found between the perceptions of traditionally and alternatively prepared teachers in the areas of classroom management skills and special education skills. Traditionally and alternatively certified teachers, when asked to rank their perceived essential elements to job satisfaction, a positive teaching experience, a sense of accomplishment, positive interactions with students, pleasant working conditions, the perception of job security, and the potential for salary increases were all consistently important. When asked to rank the importance of support systems available to the teachers, alternatively certified teachers stated they utilized mentoring programs and curriculum and instructional resources to a significant degree

more than their traditionally certified counterparts (Ruhland & Bremer, 2003). Finally, over 50% of teachers regardless of certification type indicated that they wanted to continue teaching. Additionally, 10% of the traditionally certified teachers and 5% of alternatively certified teachers stated they were seeking non-teaching positions.

While research indicates mixed results on the preparation and perceptual differences between alternatively and traditionally certified teachers, as participants in different pathways to certification they are differently prepared and have seemingly different professional development needs. Research indicates the largest professional development need for alternatively certified teachers is literacy and numeracy skills (Bussey, Sass, & Bottoms, 2010). Additionally, alternatively certified CTE teachers demonstrated a lack of mastery of basic literacy skills, and struggled to work through a lesson plan, which was based on a higher reading level. Further, alternatively prepared CTE teachers demonstrated the need to learn how to motivate students and manage their classrooms. Additionally, certain elements were determined that should be addressed before these individuals enter a classroom. These elements include: (a) the use of rubrics, (b) formative and summative assessment, (c) how to align instruction and assessment with standards and 21st century skills, (d) getting to know students, (e) engaging students in developing classroom rules and procedures, and (f) classroom management (Bussey et al., 2010). Teacher induction and mentoring programs have been posited as a potential solution to filling the gaps in alternatively certified teacher professional development needs. Briggs & Zirkle (2009) found that alternatively certified CTE teachers perceived the most beneficial parts of the induction or mentoring process was matching the mentor and mentee based on content taught, lessening the duplication of university and employment paperwork, overall paperwork reduction, meetings between mentors and mentees, and understanding of teacher stress. They also determined that alternatively certified CTE teachers perceived that the most beneficial topics within either school based and/or university provided mentor program included: planning, time management, student assessment, ways to prevent teacher burnout, classroom management issues, and working within the political and cultural make-up of their school and community (Briggs & Zirkle, 2009).

Alternative Certification in Agricultural Education

While the context for alternative certification within CTE provides an important backdrop, agricultural education as a specific subject matter owns a rich and unique history of its own that informs alternative pathways to teacher certification. First, the teacher shortage issue is no stranger to agricultural education, making its first appearance only a few years after the passage of the Smith Hughes Act (Camp, Broyles, Skelton, 2002). Even during this time, it was noted the supply was inadequate, unable to meet the growing demand of qualified agriculture teachers. Hiring individuals with practical experience but lacking professional preparation was historically and currently remains a common practice in agricultural education to fill teacher vacancies.

The early years of teacher education research in agricultural education focused mainly on teacher preparation and certification requirements (Loreen, 1960; Sutherland, 1962). It was not until a significant shortage of agriculture teachers occurred throughout the nation to cause teacher preparation programs, state administrations, and agricultural educators to investigate new pathways in teacher certification (Wiegers, 1966). This need to fill vacant teaching positions caused some divide within agricultural education professionals on how to best fulfill this need.

Some stakeholders felt if vacancies occurred it is best to close the program, rather than hire an alternatively certified candidate (Wiegers, 1966). Others felt a candidate who was almost fully certified would be sufficient for a short period, or until they were fully certified. If a certified teacher left before the end of the school year, some felt a temporarily certified person could be

hired to fill the opening until the end of the year (Wiegers, 1966). The variance of these beliefs stemmed from varying concerns for the learner, teacher, department, and/or quality control in the profession (Wiegers, 1966). The wide range of beliefs on teacher certification all became factors in the discussion on filling vacancies. From the time of the passage of the Smith-Hughes act throughout the 1950s, stringent requirements for traditional pathways to certification in agricultural education remained, alternative pathways were not offered, and only land grant universities were equipped to provide traditional agricultural education certification pathways (Wiegers, 1966).

Into the late 60's the agriculture teacher shortage continued and recommendations for certification changes were adopted across the country. Specifically, at the University of Delaware course requirements were adjusted to focus more on content knowledge and to encourage more students to seek agricultural education as a major (Barwick, 1967). At Rutgers University, emphasis areas within the teacher preparation major were added such as, Agricultural Business, Environmental Sciences, and Ornamental Horticulture, to increase student interest in agricultural education (Drawbaugh, 1968). Although teacher preparation programs in agricultural education were changing, the supply was still inadequate for the demand for agriculture teachers. Within the state of Delaware, certification accommodations were also being made to allow people who had previously received a degree in agriculture and completed 12 hours of extended course work to receive their certification (Barwick, 1967). These new accommodations were found to be more attainable than the previous requirements for individuals entering the teaching profession. In 1968, in the state of New Jersey, one-fourth of all agriculture teachers held an emergency certification (Drawbaugh, 1968). The teacher shortage and large number of emergency certifications forced New Jersey to review its agricultural education certifications requirements, and as a part of said reviews, the state removed the requirement to have two years of farm experience. New Jersey residents could also receive a teacher certificate through the trade, if they worked a paying job for 5 years and completed 18 credits of professional development courses, supervised teaching, and completed three years of successful teaching. These were the first steps taken as a formal alternative pathway to teacher certification in agricultural education.

Fast forwarding the literature in agricultural education over 40 years indicates that little has changed in regard to calls for alternative certification as a mechanism to keep up with the supply and demand issue in agricultural education (Roberts & Dyer, 2004). Further complicating the issue to maintain a quality supply of teachers, is the complexity of teaching in a comprehensive agriculture program. Secondary agriculture teachers are faced with a variety of responsibilities upon entering the profession including providing quality learning experiences for a classroom with multiple subject areas (Talbert, Camp, & Camp, 1994) and balancing laboratory, FFA, and Supervised Agricultural Experience (SAE) components of the program (Roberts & Dyer, 2004). It would seem that the complex nature of teaching agriculture would seem insurmountable to individuals who were not prepared under the traditional agricultural education certification pathways to be successful. However, research offers a mix of results regarding the differences between alternatively certified agriculture teachers.

Although, alternatively certified teachers do not complete a traditional teacher preparation program, it has been found that they possess practical agriculture knowledge (Young & Edwards, 2006) through their formal industry experience (Robinson, 2010) that has served as an asset to classroom teaching. Additionally, their practical agriculture content knowledge likely surpasses the traditionally certified first year agriculture teacher (Rocco & Washburn, 2006; Ruhland & Bremer, 2002). Although, they possess high content knowledge, alternatively certified agriculture teachers have been found to lack pedagogy preparation (Young & Edwards, 2006). Further, their lack of preparation and organization in the classroom has been linked with barriers connected to the overall quality of the agriculture program (Dyer & Osborne, 1996). While assertions have been made in

the literature regarding the perceived deficiencies in the ability of alternatively certified agriculture teachers to maintain a viable school-based agriculture program based upon their limited preparation, little research exists regarding the true performance differences between alternatively and traditionally certified agriculture teachers. Talbert, Camp, and Camp (1994) found that alternatively certified teachers had more issues with student discipline, lesson planning, and classroom/laboratory management. Interestingly, in the areas specific to being an agriculture teacher including: the unique pitfalls of managing the program, teacher isolation, students, FFA activities, and time management, traditionally and alternatively certified teachers showed similar concerns. Robinson and Edwards (2012) found of first year agriculture teachers in Oklahoma, alternatively certified teachers showed greater growth in self-efficacy but were consistently rated lower regarding performance than their traditionally certified counterparts. Specifically, the greatest divide in performance rating occurred within lesson planning and assessment. Alternatively certified teachers were also less likely to stay in the profession after their first year (Robinson & Edwards, 2012).

Similar to the literature in CTE, it has been asserted in the agricultural education literature, that alternatively certified agriculture teachers have specific professional development needs to fill specific gaps in their preparation (Robinson, 2010). Research indicates when professional development is provided to alternatively certified agriculture teachers in their unique deficiency areas; the imbalance in the differences between new traditionally certified and new alternatively certified teachers is equalized (Duncan & Ricketts, 2008). Specifically, alternatively certified agriculture teachers perceive that their most pressing professional development needs are in the areas of SAE, changing lessons to incorporate changing technology, proficiency award applications, and preparing Career Development Events (CDE) teams (Roberts & Dyer, 2004). While asking alternatively certified teachers about their professional development needs is helpful, doubt has been cast regarding whether an alternatively certified teacher has the professional knowledge to make valid decisions concerning their professional needs (Roberts & Dyer, 2004). In essence, it has been posited that alternatively certified agriculture teachers “don’t know what they don’t know” and thus their views on professional development may be limited. Regardless, the present survey of current research and the historical framework for alternative pathways to certification in agricultural education indicates that the same problems from over 50 years ago remain, there is more professional work to be done, and more there is more research to be conducted on the most effective pathways to certification in regard to student learning.

Interpretation of Current Research

Most alternative certified teachers are found to possess abundant technical skill within their discipline, but lacking in the basic needs found necessary to operate effectively in the classroom. By not participating in traditional teacher education programs, alternatively certified teachers appear to be at a distinct disadvantage when measuring selected pedagogical and program management skills. Some evidence shows that both traditionally certified first year teachers and alternatively certified teachers’ needs are similar through their requests for professional development. However, it is difficult to know if an alternatively certified teacher is knowledgeable enough on the culture and canons of the profession to truly understand their needs. Given the lack of awareness about their knowledge gaps among new alternatively certified teachers, programs that immerse those teachers into the canons of discipline are warranted.

Due to a decreasing number of university based traditional CTE teacher preparation programs and increasing secondary student populations, CTE programs are facing numerous teacher shortages. Dissimilar to core subject areas, these teacher shortages are threatening the very existence of some CTE programs. To counterbalance the teacher shortages and CTE program

closures, states and districts are turned to alternative certification pathways. Due to the strong industry connection that CTE programs carry, previous industry based work experience is highly sought after in alternatively certified individuals. Thus, alternatively certified CTE teachers bring a considerable amount of content knowledge but are lacking in skills related to pedagogy, classroom management, and student organization advising. Within CTE the use of alternative certification pathways appears to be necessary to ensure the existence of many of its programs. Due to this, CTE broadly speaking needs to develop standards for effective certification pathways with specifications on previous experience, required coursework, required testing, continuing professional development, and mentoring.

Tenets of Alternative Certification Within Agricultural Education

Based upon the shortage of traditionally certified teachers and the utilization of alternative certification pathways to fulfill these shortages, the following tenets for alternative certification usage within agricultural education were proposed for consideration. First, as long as teaching vacancies exist within agricultural education, as a profession a supportive and proactive stance must be taken regarding alternative certification pathways. Collectively the profession must work together to support the preparation and sustainability of alternatively certified teachers. Rather than allowing individuals to enter classrooms with a wide variety of emergency preparation experiences, the profession needs to proactively codify the professional requirements for these individuals and develop requirements for alternative certification programs. The developed requirements can then be utilized at the state level to guide certification programs. States should also use the research and its subsequent interpretations presented in this paper to develop agreed upon standards and policies for alternative certification and to create a collaborative model among institutions to increase the capacity to certify alternative teachers in a high quality, yet attainable manner.

Secondly, alternative certification programs in agricultural education should also consider programming that develops a community of practice within these teachers that connects them to the larger teaching community and professional culture within agricultural education, that is unique to the practice of teaching school-based agriculture. Developing a collaborative community of practice can allow for networking and mentoring opportunities for alternatively certified teachers to gather curriculum resources, examine program planning strategies for student organizations, and share their industry specific knowledge.

Finally, teacher educators and state staff members should consider developing a more focused model of recruiting high quality individuals from industry into teaching through alternative pathways to certification. If the use of alternatively certified individuals is warranted, the profession needs to take a proactive approach whereby individuals with a wealth of experience, maturity, and success within other agricultural careers are recruited. These individuals may be looking to rejuvenate themselves via a mid-life career change and should be considered as primary targets for alternative certification.

Recommendations

Based upon the empirical review and proposed tenets laid out by this study, it is recommended that state staff and teacher educators work collaboratively to develop state wide certification requirements for individuals seeking alternative routes into the profession. To fulfill the developed requirements teacher preparation institutions should develop on-site and at a distance courses to prepare individuals to the nuances of CTE and agricultural education.

It is also recommended that state staff and teacher educators develop professional development programs to meet the specific classroom and professional needs of alternatively certified individuals. These programs should focus on developing the teachers' pedagogical content knowledge and classroom management techniques. Specifically, within CTE and agricultural education, professional development should also focus on developing the necessary skills needed to manage various laboratory settings and their respective student organizations. Professional development programs should also focus on integrating alternatively certified teachers within the existing communities of practice. Mentoring programs should also be developed to connect alternatively certified teachers with experienced classroom teachers.

Additionally, much more research on alternative certification is warranted. Studies need to be conducted to better understand the current state of alternative certification programs within agricultural education. Research should be conducted to investigate the reasons individuals would seek alternative certification beyond the traditional university based route and uncover barriers to entry into traditional programs. Qualitative inquiries need to be conducted to investigate the cases of individuals who specifically choose alternative pathways and why they do so. Additionally, qualitative studies need to be conducted to determine why individuals within industry choose to leave and enter education. Finally, quantitative research needs to be conducted on different alternative certification programs to determine the most effective alternative certification pathway. Additionally, the most effective alternative certification pathways should be analyzed for shared characteristics. Beyond investigating alternative certification as a process, studies need to explore the effects alternatively certified teachers have on student learning and agricultural education program outcomes.

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