PROFESSIONAL DEVELOPMENT NEEDS OF NOVICE CAREER AND TECHNICAL EDUCATION TEACHERS

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ABSTRACT

This study examines the professional development needs of secondary career and technical education (CTE) teachers. Fourteen traditionally or alternatively certified CTE teachers participated in an in-depth telephone interview to provide responses related to their background, experience, participation in professional development opportunities, and opinions concerning professional development. While most CTE teachers felt adequately prepared by their teacher preparation program, areas in which more preparation would have been helpful included classroom management and working with special populations. Most of those who participated in a mentoring program found the experience valuable; the quality of the relationship was key. Results point to the need for a range of professional development opportunities that will meet the varied and specific needs of CTE teachers. Furthermore, an increase in support for professional development opportunities can assist with the retention of teachers in their first years of teaching.

PURPOSE OF STUDY

The primary purpose of this study is to examine the professional development needs of novice secondary career and technical education (CTE) teachers. A secondary purpose was to determine if CTE teachers who entered the profession though alternative certification routes have different professional development needs than those of traditionally prepared teachers. Some states mandate professional development activities, while other states provide little or no support, leaving any professional development activities to local school districts. The professional development of teachers has become a major issue as the shortage and retention of teachers raises concerns as to the quality of education in our nation's schools.

BACKGROUND

In recent years, preparation of CTE teachers has been strongly influenced by two trends: (a) growing teacher shortages, leading to more flexible teacher licensure and certification policies at the state level, and (b) the need for greater teacher and system accountability, leading to more

rigorous teacher licensure and certification policies. CTE teachers have entered the profession through a variety of traditional and alternative certification routes. Teachers who enter the profession through alternative certification routes are more likely to feel well-prepared in terms of content, but feel less well-prepared in pedagogy than those who have completed traditional certification programs (Ruhland & Bremer, 2002). This combination of forces raises the importance of professional development as a strategy for ensuring a high level of competency in CTE teachers.

Professional development is defined as the "sum of formal and informal learning experiences throughout one's career from preservice teacher education to retirement" (Fullan & Steigelbauer, 1991, p. 326). There is no consensus in the field of education as to best practices in professional development. School districts often refer to professional development in terms of formal education to include courses and/or workshops. Salary schedules and re-certification policies may influence a teacher's decision to participate in professional development opportunities. Local school districts receive minimal guidance about how to manage and improve their efforts. "On the whole, most researchers agree that professional development programs typically have weak efforts on practice because they lack focus, intensity, follow-up, and continuity" (Corcoran, 1995, section 2).

The U. S. Department of Education's Professional Development Team established a list of ten principles of professional development in 1994 (Building Bridges, n.d.). The ten principles of professional development included the preparation and support of educators to help students achieve to high standards of learning and development. "Equitable access for all educators to such professional development opportunities is imperative" (Building Bridges, n.d., para. 3).

ALTERNATIVE TEACHER CERTIFICATION

Alternative teacher certification is a term that has been generally used to refer to non-traditional routes into the teaching profession. "Nearly all states — 45 out of 50 — now offer some type of alternative to going back to college and majoring in education in order to become a teacher. This compares with 40 states in 2000 and only eight in 1983 (National Center for Education Information, 2002, para. 6). According to Feistritzer and Chester (2000):

> The term "alternative teacher certification" has been used to refer to every avenue to becoming licensed to teach, from emergency certification to very sophisticated and well-designed programs that address the professional preparation needs of the growing population of individuals who already have at least a baccalaureate degree and considerable life experience and want to become teachers (p. 3).

According to Kwiatkowski (1999), alternative teacher certification "is already one of the most hotly debated issues since chalk first met blackboard" (p. 215). Kwiatkowski reported that between 1983 and 1996, more than 50,000 individuals in the United States received alternative certification. He expected this trend to accelerate, driven by a widespread desire to improve education through alternative teacher training and certification via four strategies:

1. Increasing the number of teachers available and competent in high-demand specialties;
2. Increasing the diversity of the pool of teachers;

3.   Increasing staffing levels in schools experiencing staff shortages, such as urban schools; and

4.   Decreasing the need for emergency credentialing. (p. 216)

Houston, Marshall, and McDavid (1993) found that alternatively certified teachers experienced more difficulties in the classroom during their first months of teaching than did traditionally certified teachers. They recommended that teacher education programs emphasize classroom experience, and that teacher training be seen as an ongoing developmental process for all teachers.

Darling-Hammond (1999), in a study comparing 4th and 8th grade reading and math student achievement scores across the United States, found that having an alternatively certified teacher appeared to have a negative impact on student achievement. She compared state licensing practices and found that states with more restrictive licensing practices (e.g., Minnesota and Wisconsin) had students with much higher achievement scores than did states with more liberal licensing practices (e.g., Louisiana and Texas), even after controlling for student poverty and for student language background (Limited English Proficiency status). Darling-Hammond also found that having a higher proportion of teachers on emergency certificates was a strong negative predictor of student achievement.

Goldhaber and Brewer (1999), using data from the National Educational Longitudinal Study of 1988 (also known as NELS: 88), examined the academic achievement of students as a function of their teachers' credentials. They examined student outcomes in math, science, English/writing, and history in relation to their teachers' levels of education in subject matter and type of teacher certification. They found that, if student characteristics were held constant, student performance was higher (a) when teachers had bachelor's or master's degrees in the subject area they taught, and (b) when teachers had any type of certification, whether standard, emergency, alternative, or private school, as compared to no certification or certification in a different subject area. Goldhaber and Brewer found that even though there was wide variation in state licensure policies, there was little evidence that these policies had an impact on student performance. They noted that there is "remarkably little rigorous research" (p. 84) concerning many important questions, including whether teachers with traditional licenses perform better than those with alternative licenses, whether some components of teacher licensure are more effective than others, and what effect licensure has on the quality of individuals entering teaching.

Truell (1999) conducted a study to compare the concerns of traditionally versus alternatively certified marketing teachers. Of the 141 marketing teachers participating in the study, 30% were traditionally certified and 70% were alternatively certified. Participants rated seven broad categories of concerns using a five-point Likert-type scale. The seven categories included: human relations, classroom management and routines, instructional activities and methods, personal concerns, conditions of work, evaluation problems, and professional growth. The most serious concern reported by both groups in the personal concerns category was demands on time. In the instructional activities and methods category, developing good work and study habits in students was the second highest concern reported by both groups.

Alternatively certified CTE teachers bring with them, in most cases, years of experience working as a professional in their field of instruction. The benefits of this experience are widely acknowledged. However, Lynch (1998) reviewed research on the value of occupational experience in the preparation of CTE teachers, and found no measurable impact on teaching quality. He

stated, "there is no reliable correlation between years of occupational experience or scores on occupational competency tests and such variables as teacher qualifications, satisfaction, or effectiveness" (p. 47).

Whiting and Klotz (1999), while decrying the increasing reliance on alternative certification of teachers, emphasized the need for effective professional development for alternatively certified individuals:

> Rather than ignore it, we obviously have to recognize the permanence of an alternative form of certification and, rather than fight it, we must instead propose a program design that gives these potential teachers, seeking careers through such models, the pedagogical ammunition to survive the rigor of today's classroom (p. 5).

Given the apparent intractability of the problem of teacher shortages, pragmatic approaches aimed at helping alternatively certified teachers are increasingly evident. In reviewing the research comparing traditional and alternative certification, Miller, McKenna, and McKenna (1998) stated, "alternative certification is here to stay; researchers should investigate not whether such programs work, but which ones work best" (p. 166).

PROFESSIONAL DEVELOPMENT PRACTICES

Professional development "serves as the bridge between where prospective and experienced educators are now and where they will need to be to meet the new challenges of guiding all students to higher standards of learning and development" (Building Bridges, n.d., para 1). The best way to learn what are the professional development needs of teachers is from teachers themselves. Current professional development opportunities are often unfocused, fragmented, low-intensity activities that lead to no significant changes in teaching practices. Pre-service and in-service professional development opportunities require partnerships among schools and higher education institutions.

At the local school district level, current professional development opportunities often consist of two to five days for in-service, or staff attending workshops throughout the academic year. At the state level, professional development opportunities vary considerably due to added expenditures to provide these programs. Often states will provide funding to colleges and universities for them to design workshops, conferences, or courses specific to the professional development needs of teachers in their state. State and local school districts are facing budgetary issues that could impact the resources allocated to professional development in the future.

Increasingly, professional development for novice teachers is considered a valuable strategy for improving both student achievement and teacher retention. Studies by Merchant and by Resta (as cited in Texas State Board for Educator Certification, 1998) found that provision of an induction year program results in much higher than expected retention of teachers. "If we are serious about student achievement in Texas, we must also be serious about induction support for novice teachers" (para. 2). The Texas State Board for Educator Certification concluded that all beginning teachers should be given assignments consistent with the level of the license in which they received training, and that they should receive two years of induction support, including a trained mentor (with at least 30 minutes of contact per week), and release time for professional development (six days in the first year and four days in the second year).

Induction programs are designed to assist beginning teachers. Huling-Austin (1988) proposed five goals that an induction program can expect to accomplish: (a) improve teaching performance, (b) increase retention, (c) promote professional and personal well-being, (d) satisfy mandated requirements of state certification programs, and (e) transmit the culture of the system. A study by Kirby and LeBude (1998) examined the nature and existence of beginning teacher induction programs. Results indicated that induction programs provided emotional support and procedural information through meetings, workshops, orientation, and handbooks. Induction programs did not address "'teachers' needs for time, planning, and clerical assistance" (Kirby & LeBude, 1998).

While some alternatively certified teachers receive extra support during their first year or two, others receive little or no support from either their state or local school districts. Support for traditionally certified teachers also varies widely. Some states mandate professional development support for at least a portion of new teachers, while other states offer grants to individual districts; still others offer no statewide support for the professional development of new teachers. State funding and state mandates can affect professional development practices differently. Research conducted by Haselkorn and Fiedler (1999) found that state mandates often spur development of new teacher support programs, while state funding, without mandates, does not. As a result, teachers often rely primarily on whatever pre-service training they were able to complete.

One of the most common types of professional development practices is a mentor. Mentors function in several roles, but the most common role is to promote a beginning teachers' professional competence and personal growth. According to research by Blank and Sindelar (1992) the key to a successful mentoring program is the selection of good mentors. They identified four criteria for mentor selection: (a) mentors should be excellent teachers, (b) mentors should be team players, (c) mentors should have subject area/grade level match, and (d) mentorship should be by invitation only. The fourth criteria places emphasizes on the school's belief that those invited are viewed as effective teachers and contributing members to the district. Invited members feel honored and not obligated to accepting the responsibilities of mentorship. A strong mentorship relationship with beginning teachers can increase the retention because the beginning teacher was not left to struggle on their own.

If a mentor is part of any school district's professional development program it is important that mentors be mentored. Support, both monetary and release time from teaching, must be provided for mentors to be successful in their role. "If we want to assure success for mentoring programs, teachers must be nurtured, assisted, educated, and prepared for the important and critical role of mentor teacher" (Zimpher & Rieger, 1988, p. 198).

In a review of teacher professional development practices, Abdal-Haqq (1996) concluded that the school culture is a major barrier to effective professional development, because there is little support for teachers spending time outside of the classroom and little value is placed on teacher learning. Further, decisions about professional development are most often made by state, district, and building administrators rather than by teachers.

METHODOLOGY

RESEARCH DESIGN

The method of data collection was telephone interviews. Two types of interview questions were used to collect data: structured questions from which respondents had choices to select answers from; and unstructured questions that offered respondents opportunities to provide open-ended responses to questions. Data from the telephone interviews were transcribed and analyzed to identify patterns and themes.

PARTICIPANTS

In a study by Ruhland and Bremer (2002), traditionally or alternatively certified CTE teachers hired between 1996 and 2000 were surveyed concerning their preparation for teaching and their professional development opportunities. State departments of education were contacted to identify the names and addresses of traditionally and alternatively certified CTE teachers hired between 1996 and 2000. A total of 28 (55%) states were able to identify CTE teachers meeting the criteria. Surveys were sent to 2,091 CTE teachers in April and May, 2001. Of the 679 surveys returned, 632 surveys were useable.

The sample for the telephone interviews consisted of the CTE teachers who completed the survey and responded via e-mail of their interest in participating in a telephone interview. Seventeen CTE teachers initially responded via e-mail. Following an e-mail communication in June, 2001, 14 CTE teachers agreed to participate in the telephone interview. A confirmation letter with the date and time of the scheduled interview and a consent form allowing the telephone interview to be tape-recorded were sent to each participant by July 2001. Telephone interviews were conducted between July and August, 2001.

DATA COLLECTION PROCEDURE

The telephone interview protocol included three major areas of questions and some supportive probes. Teachers were asked to describe the teacher preparation program they had completed, their rating of their first-year teaching experience, and the professional development programs that had been provided to them. A pilot test was conducted with three CTE teachers in Minnesota. Four additional CTE teacher educators reviewed and recommended changes for the telephone interview questions. The questions were revised based upon feedback received from the teachers and teacher educators.

The same researcher, to allow for consistency with the data collection process, conducted the 14 telephone interviews. The second researcher participated in the telephone interview process by taking notes to be used to assist with the data analysis. At the time of the interview, two participants indicated they were currently teaching at the post-secondary level and were included in the data collection process. If a consent form for tape recording had been signed and returned to the researchers, the telephone interview was taped. If a consent form was not received, the interview was not taped. In addition, the researchers took handwritten notes during each interview. Participants were asked to respond to a list of questions provided on the telephone interview protocol. The interview permitted the participants to elaborate on their responses and ask follow-up questions when appropriate. The interviews ranged from 15 to 55 minutes, averaging 30 minutes.

Of the fourteen respondents, eleven said they taught in rural areas. Two reported teaching in urban areas, and one was in a suburban area. At the time of the telephone interviews, one respondent indicated they had 22 years of teaching experience, and a second respondent indicated they had 13 years of teaching experience. The researcher conducting the telephone interview asked for clarification regarding the number of years reported in the teaching profession and if they had obtained a traditional or alternative certification between 1996 and 2000. Both respondents reported they were alternatively certified, in a new CTE certification area (between 1996 and 2000), thus were included in the data collection process. Additional information about those interviewed is summarized in Table 1.

Table 1

Telephone Interview Participants

Gender	State	Area of CTE Licensure	Number of Years in Teaching Profession
M	AK	Vocational Education	3
M	CA	Industrial Technology	4
F	CA	Human and Family Services Occupations	2
M	ID	Agricultural Education	22
M	MI	Business Education	5
F	MI	Business Services Technology	5
F	MI	Business Education	1
F	MI	Marketing/Business	6
M	MN	Diesel Technology (postsecondary)	6
M	MN	Agricultural Education	1.5
F	MT	Health Occupations – Nursing (postsecondary)	5
F	OK	Business	13
M	OK	Vocational Education	3.5
F	WI	Business Education	2

Because many of the interview questions were open-ended, it was not always possible to clearly categorize each response into a discrete category. Where categories were clear, numbers are reported. In other cases, the general sense of the interviews is described.

When asked why they decided to become a teacher, eight of the fourteen respondents mentioned the ability to make a difference, sharing knowledge, or wanting to work with young people. One respondent said, "I think basically probably it does go back to some very influential teachers in high school. To be honest, I feel like it's my calling. I feel like that's what I've been led to do in my life." Three respondents said they were looking for a career change; one of these wanted the opportunity to coach a sport. Two respondents noted prior volunteer experiences and three respondents mentioned the influence of family or friends. Two respondents identified the availability of jobs as a factor for becoming a teacher, and one noted the school holidays and summer vacation.

Respondents were asked if they had completed all the requirements for teacher certification for their state when they began teaching. Of the fourteen respondents, eight reported that they had completed all requirements before beginning teaching, and six said they had not.

Respondents were asked what type of teacher certification program they completed and whether their teacher certification program was well designed to meet their needs. Of the five who had a baccalaureate degree in education, three said, "yes" and two said, "somewhat." Of the two who were in post-baccalaureate programs, one said, "somewhat" and one said, "no." Of the five who said they went through an alternative certification program, one said, "yes," two said, "somewhat," and two said, "no."

Twelve of the fourteen respondents mentioned one or more areas in which they felt their teacher certification program could have been improved. Areas needing improvement included dealing with special needs students, curriculum design, unit planning, managing budgets, purchasing, dealing with school administration, classroom management, and student discipline. Also noted was the need for more hands-on learning. One alternatively certified CTE teacher who was previously certified in another area answered "no" to whether their teacher certification program was well designed to meet their needs and said:

> My main problem with it was that a lot of it was just a rehash of what I had when I was getting my certification for history, econ, and government. What I needed more than anything else was a lot of hands-on learning in technical subjects, and we got very, very little of that. It was a good thing that they had the program available, but it just seemed like an awful lot of classes that we had to take and it cost a lot of money and then you get to school and you start teaching and you didn't learn anything that you needed to know and you still had to go back and learn physics and electronics and home building and wood working that you had to teach. I want to say that I had to take about 27 hours for that certification, but it doesn't seem right.

Asked whether their current teaching license was regular, provisional, emergency or another type, six were regular, six were provisional, and two were another type. The other types were reported as a temporary license and a professional license.

Feelings about their first year of teaching were either somewhat positive (six respondents) or very positive (eight respondents). Those reporting their experience as very positive noted good experiences with students. Negative comments primarily by those rating their experience as somewhat positive included feeling overwhelmed, too much paperwork, and conflict with another teacher. An alternatively certified CTE teacher who rated their experience as somewhat positive said:

> You had the other staff members to go to which was actually really helpful, but it would have helped if you could team teach with somebody or there was some other device to help you get started. Basically, I came on board 3 days before school started. That made it quite different. Basically, you're just supposed to take the ball and run with it and there was not a lot of material there. There were worksheets and things like that, but as far as notes for discussion in class, there was none.

Respondents were asked to think back to their first year of teaching and assess the adequacy of their preparation in four areas: classroom management, curriculum content, teaching methods, and dealing with special populations. In classroom management, those who felt well prepared cited practical instruction and hands-on experience, or their own prior work experience, as most helpful. One respondent who reported "somewhat" adequately trained in classroom management said, "I wasn't prepared for all types of kids, but it was not a bad experience." Those who felt well prepared in the area of curriculum noted up-to-date curriculum, previous experience, and student teaching as helpful. Those who felt less well prepared cited their need to teach classes for which they were not prepared at all, or noted the need to know more about technology.

Concerning teaching methods, most felt well prepared by their program's methods classes. A few said their program was weak or that some of the training they received after they started teaching should have been provided before they started. On the whole, the respondents felt the least prepared in the area of special needs. Seven of the respondents said they were not sufficiently prepared, citing too little coverage of material and lack of practical advice or hands-on experience. Of those who felt prepared some cited their prior work experience as the primary factor.

When asked what professional development opportunities were available to them as beginning teachers, all but two said some kind of professional development was available. However, three of those who said some professional development was available described it as being minimal or not useful. Most often mentioned were district programs for new teachers, some of which included information on working with a mentor, classroom management, or district history, and services available. Another source of professional development was local CTE or Tech Prep program offices, which offered workshops especially targeted at CTE teachers. Some had informal support even though there was no program in place, including one person who had completed a fifth-year program and said, "I was fortunate enough that I did have a good administrator – a principal – and I could certainly go to her whenever I had any questions or anything, but no other specific [assistance was available] through professional development." No respondents mentioned state-sponsored professional development activities.

When asked whether a mentor was available to them during the first year of teaching, eight respondents said yes, and three respondents said informal assistance was available. Only three respondents said they did not have any mentoring available. While most of those with mentors said they were helpful, others said that contact was too infrequent, the mentor was not in their area, or that the program seemed to exist mostly on paper. A traditionally certified CTE teacher who reported having a mentor said:

> He was really helpful during my first year of teaching. If I had any problems or any questions during my first year about paperwork, requisitions, or problem students, I could go to his room which was right across the hall from mine and ask him questions at any time and he would give me a lot of good advice e.g. how the principal likes things done, how the director likes things done. I became a VICA advisor my first year and he helped me a lot with that.

When asked how professional development for beginning teachers might be improved, respondents offered a broad range of suggestions. They noted the need for more practical and

in-depth pre-service training, including more and earlier opportunities for classroom experience. First year induction and professional development programs were cited, including the need for more workshops. Some thought it would be helpful if attendees could earn college or university credit for attending these programs.

Curriculum planning and working with special needs students were identified as useful content areas. Several mentioned the usefulness of mentors and also the need for more opportunities to observe other teachers. Suggestions concerning mentoring programs included having a mentor in one's own area and having a mentor outside one's building. There was disagreement over whether a mentor should be a peer or be someone in a leadership position, such as a department chair. Also mentioned were a desire for more opportunities to communicate with peers and a need for more technology training and experience in the business world. One respondent said:

> I feel very strongly that we should have idea-sharing or brainstorming meetings with teachers that are in our same content area. That could be first-year teachers and veteran teachers because I think it would help both of them. But just in talking to other people that teach business at other schools, I get some of my best ideas just from conversations like that.

Asked about the characteristics of effective teachers, respondents noted several themes. Effective teachers are lifelong learners, they said, who remain interested in the material they teach and who pursue all kinds of learning opportunities, often on their own time. They vary their instructional methods, try out new ideas, and work hard to reach every student, including those with special needs. They maintain a good rapport with students, and have a personal interest in their success. In addition, they have excellent classroom management skills and are well organized. One respondent said:

> They're always attending seminars or professional development. They are always learning new techniques and they try them on there students. Some of them are teaching at the community college or local 4-year institution. But they are always learning. They have committed themselves to being lifelong learners. They don't get in a rut.

Another respondent said:

> Their passion for teaching. Students can spot a fake and students can spot a teacher who is just putting in his her time, but if teachers have enthusiasm and have a love for their discipline and have an ability, whether it's from their personal experience or broad knowledge, that they can bring a real world situation into the classroom or take the classroom into the real world – those teachers are successful.

Respondents was asked to name three things that would help them improve their practice as a teacher in the coming years. Most frequent answers were peer coaching and networking, up-to-date technology and computer skills, and workshops or instruction on topics including curriculum development and special populations.

When asked how they worked through the challenges of their first year, two contrasting themes emerged. Many mentioned the help they received from veteran teachers and peers, but many

others talked about working things out on their own, through trial and error, journaling, reflection, problem solving, or perseverance. One traditionally certified CTE teacher said:

> I talked to my wife who is a teacher. I would talk to my principal, and I would talk to my mentor teacher. I also figured out by watching and listening to the teachers who have been in our school for a long time and I would visit with them and get their feedback and talk with them about certain problems I was having and then I also talked to other teachers and I was real lucky – I have two aides and one of my aides had been there a few years and they [my aides] gave me a lot of invaluable information. I also talked to University professors. One of my professors at the time in one of my vocational courses was the head of the Voc Ed. program at the university I was attending and she gave me a lot of advice. And I searched the Web and used the Internet a lot.

Another traditionally certified CTE teacher focused on the individual approach:

> Problem solving is what it boils down to. You have to break that down into steps that build up to that outcome. I made out goals of what I wanted to accomplish that year, not just my own professional use, and how I was going to run my class, what I wanted kids to learn, how I wanted to work with students. I had goals set up for all that plus the FFA and it's keeping a focus on those goals and when times are tough pulling out that sheet and saying 'Where am I going here?' Saying, 'OK, this is where I am going, but how am I going to get there?' That really helps bring the problem into perspective and makes the big problem a lot smaller. It takes progressive steps to building whatever you are trying to build and solve whatever needs to be solved.

DISCUSSION AND IMPLICATIONS

The teachers interviewed revealed a wide range of background and experiences. Those who went through teacher preparation programs that they considered to be well designed were able to identify specific aspects of the programs they found helpful. Those with mentors who found the mentoring experience most helpful also seemed to have had very positive personal relationships with their mentors. While most felt well prepared by their programs, some mentioned that some things are learned only, or most readily, in the classroom. Most of those interviewed felt least prepared in the area of working with special needs students.

CTE teachers vary greatly in age, subject matter knowledge, and pedagogical skill. A one-size-fits-all professional development program will likely not meet the needs of most individuals in this diverse group. Professional development programs may be more effective if they take into account the range of problem-solving strategies and styles of teachers. Responses to the interview questions summarized indicate a wide range of professional development needs. Not all CTE teachers need the same kinds of assistance, so it would make sense to have a menu of options available. Depending on the quality and extent of their pre-service preparation, some recently certified CTE teachers will need ongoing help with curriculum, teaching methods, and classroom management.

Many could benefit from support in the area of working with special needs students. More practice in this area is needed in both pre-service and in-service teacher preparation programs. Teachers cited lack of sufficient preparation and lack of hands-on experience in learning about special needs students. The need for personal support, whether in the form of a mentor or a peer support group, was clear in the comments of the respondents. This support from other education professionals was seen as key, though there were various views on what, specifically, would be most helpful. CTE teachers also valued the availability of classroom observation opportunities and workshops on many topics, along with the time available to take advantage of these. CTE teachers seemed most enthusiastic about professional development opportunities that offered practical help in a timely manner.

Interview participants' comments about the characteristics of effective teachers suggest some useful directions for professional development practices, such as developing rapport with students, organizing materials, and accessing resources for keeping up-to-date on one's subject area. While the average needs of traditionally and alternatively certified CTE teachers may differ, it probably makes most sense to offer a wide range of professional development opportunities for all teachers, giving each individual the opportunity to choose those activities from which they would derive the most benefit.

Approaches to actively engaging students in the learning process will be essential as our nation continues to be involved with raising academic standards. To make this shift, CTE teachers will need to enhance their subject matter knowledge, learn new teaching strategies, and implement alternative assessment measures. To support teacher preparation (both traditional and alternative routes) and professional development, policymakers must establish a coherent and effective approach to professional development for all teachers.

Based upon the findings from this study, the following recommendations for further research are offered.

1. Research should be conducted to examine the quality of the mentor relationship and its helpfulness to the beginning CTE teacher. The telephone interviews revealed concerns regarding the process to select, train, and match a mentor with a beginning CTE teacher.

2. A study should be conducted to identify ways that CTE teachers approach problems they encounter as beginning teachers. Two contrasting approaches emerged from this study. Some participants sought help from peers, while others approached the problem on their own seeking minimal input from their mentor or peers.

3. A study should be conducted to examine traditionally and alternatively certified secondary academic and CTE teachers to determine their pre-service and in-service program needs. With the increase in the types of alternative certification procedures offered in states, local school districts, state education agencies, and teacher educators at colleges and universities need to be more actively involved with determining the content of pre-service and in-service programs to ensure teachers are effective in the school and classroom environment.

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