ALTERNATIVE CERTIFICATION: EFFECTIVELY PREPARING TEACHERS

Christopher Foster
California State University, Fullerton
CalStateTEACH, Faculty

Carolyn A. Bishop
California State University, Fullerton
CalStateTEACH, Director

David A. Hernandez
Adjunct Faculty: California State University, Fullerton; University of California, Irvine; and Northwood University at Cerritos.

This study addresses questions related to teacher preparation through online supported learning in an alternative certification program, CalStateTEACH. Specifically, this study analyzes and reports survey responses of 130 teachers and 84 supervisors related to preparedness of program completers to teach in a multiple subject classroom. The question asked is: Can online supported teacher credentialing programs prepare effective teachers? Data for the analysis were extracted from the Deans' Report. This paper summarizes the responses of teacher graduates and their site supervisors to the questions of teacher effectiveness. Additionally, a comparison between traditional and online teacher preparation is conducted.

INTRODUCTION

The business of educating future teachers has seen many changes and trends in recent years starting with but not limited to the No Child Left Behind Act (NCLB) as detailed in the report *NCLB Teacher Requirements Resource Guide* (California Department of Education, 2004, March 1). With the signing of NCLB into law in 2002, a new era of education in our nation's history began. In the report entitled *Meeting the NCLB Goals for Highly Qualified Teachers: Estimates by State from Survey Data* (Blank, 2003), an increased demand was projected for "highly qualified" teachers in the State of California in the next ten years. The report also noted that in addition to preparing highly qualified teachers, education leaders must consider how to attract teacher candidates. Several factors affect the supply of qualified teachers in a state, including salary level for teaching, policies for licensures and increased certification, funding support for education, and the status of the teaching profession. These concerns raise the question of how best to meet the demand for teachers while at the same time ensuring new teachers are well prepared and meet the definition of "highly qualified" under NCLB. One alternative to the traditional teacher

preparation programs offered on college and university campuses across the nation is an online supported teacher preparation program. An online supported program offers an accessible alternative credentialing program and opens and broadens the field of possible applicants to those who may not have easy access to traditional programs. Considering California's need for highly qualified teachers, offering accessible alternative credentialing programs and attracting candidates to the field of teaching while still preparing effective teachers are critical. The effectiveness of such online programs in preparing teachers, however, must be evaluated.

PREPARING QUALITY TEACHERS IN THE ELEMENTARY CLASSROOM

Due to the increasing need for competent teachers in America's K-12 schools, the basic pedagogical and content knowledge of teacher programs must be examined as it relates to the effective preparation of teachers. Subject matter competence has been of particular interest in recent years and has prompted statewide exams in subject matter competency to meet the requirements of NCLB of preparing highly qualified teachers. NCLB legislation mandated specific content knowledge requirements for all teachers in our nation's schools, which has lead to exams which claim to measure specific content knowledge, but this type of assessment is not aimed at examining pedagogical knowledge. In California, the subject matter competency test is the California Subject Examinations for Teachers. Research points to the type of experiences teachers have during their preparation programs and specific university coursework that can influence the development of their pedagogical content knowledge (Grossman, 1990).

Classroom management and group socialization within the context of the classroom are a major concern for novice teachers, which can dramatically impact their subject knowledge and teaching pedagogy (Brickhouse & Bodner, 1992). Van de Walle (2006) argued that "the manner in which a class is conducted, the social climate that is established within the classroom, and the materials available for the students to work with all have an enormous impact on what is learned and how well it is understood" (p. 28). Pedagogy, content knowledge, and classroom management are all areas that must be examined when evaluating the preparation of effective teachers for elementary classrooms.

CALIFORNIA TEACHER QUALIFICATIONS

During the 2003-04 school year, slightly more than 28,000 teachers, about one in every 11 California teachers, were under prepared and teaching without the State's minimum qualification. That is greater than the previous year when more than one in every eight California teachers (37,309) were under prepared (Center for the Future of Teaching and Learning, 2003). The issue of under prepared teachers can have direct policy and practice implications for schools' compliance with NCLB in maintaining highly qualified teachers. During the 2004-2005 academic year, 26% of all California teachers were teaching while out of NCLB compliance in the core academic classes (Center for the Future of Teaching and Learning, 2003). A "highly qualified teacher" is one who holds a current state certification or has passed a state's licensure examination, excluding emergency or temporary teaching permits or permits with provisional conditions (National Education Association, 2006, "Highly

Qualified", para. 1). A report by the Education Trust (2003) revealed how this seemingly simple concept of a highly qualified teacher has been misinterpreted. In addition to simple compliance issues with NCLB, policymakers must consider the negative implications of under prepared teachers on classroom instruction (Darling-Hammond, 2006; Volante, 2004). Due to the shortage of highly qualified teachers, program designers and university faculty may want to consider alternative certification programs to address the gap that traditional teacher training programs has been unable to fill.

ALTERNATIVE CERTIFICATION PROGRAMS

A comprehensive study by the Rand Corporation (Darling-Hammond & Hudson, 1990) examined 64 teacher certification programs. In this study, graduates of alternative certification programs possessed a stronger knowledge of subject matter preparation compared to traditional campus program. In another study (Brown, Collins, & Duguid, 1989), a comparison of student achievement found that students of alternatively prepared teachers tend to do well or slightly above the norm compared to students of traditionally prepared programs.

The efficacy of teacher education programs in the United States is under ongoing review and evaluation and has sparked several policy changes, including a change in the national policy in education, restructuring of state licensing and governance requirements, additional assessment of teacher candidates for general content knowledge as well as pedagogical competence, and rethinking the nature of teaching standards and how to best assess and implement these new demands (Tellez, 2003). Darling-Hammond and Bransford (2005) called for teacher educators to rethink their practices and to prepare teachers for the changing world. The traditional brick and mortar classroom has come into question as the only effective way to prepare teachers to address the needs of our future learners in the K-12 schools. Alternative teacher certification has been one of the most controversial topics in teacher certification in the United States for approximately twenty years (Zeichner & Schulte, 2001). Presently, there are two different categories of alternative certification programs. The first is a state-mandated program that allows the local school district to initiate and monitor the preparation and certification of their own teachers, taking the form of intern or provisional teachers. The second type involves institutions of higher education (IHEs) to prepare teachers for certification. Some, but not all of these IHE preparation programs, often shorten and/or modify the amount of coursework to provide a fast-track into teaching to meet the immediate needs of providing classroom teachers in high need content areas (Harrell & Harris, 2006).

The last three decades have shown a movement away from undergraduate teacher preparation to post-baccalaureate credentialing (Turner, 1998). Facing the increasing challenge of providing every child with a fully credentialed teacher has provided the impetus for teacher educators to reconsider the models of teacher preparation programs. The term alternative certification has, in the current political NCLB climate, taken on a new meaning to include distance education models for post-baccalaureate teacher credentialing programs. In the past, distance education included correspondence courses, one-way and two-way TV lessons, and pre-packaged instructional programs for the computer.

However, introduction of the Internet and its international diffusion have changed the sluggish development of distance education forever (Lockitt, 2004). What did not change was the large student body ready to participate in distance education. The business of educating adults at a distance over the now ubiquitous Internet has caught the interest of higher education administrators who are often seeking innovative ways to expand their student body and to better serve their current students (Bernard et al., 2004). The question, therefore, is no longer whether technology will be implemented in learning but how, to what degree, and under what circumstances should computer-based technology be used for adult learners (Ames, 2003).

This study will demonstrate that one alternative path to teacher certification can prepare academically competent individuals to teach in the elementary grades, many of whom may not have had the opportunity to attend or access to a traditional on-campus program (Mattes, Nanney, & Coussons-Read, 2003). In addition, the policy and practice of teacher preparation in an alternative certification environment will be briefly explored (Schaffer & Richardson, 2004). CalStateTEACH, an integral part of the California State University system, is one example of a program that provides teacher preparation through online supported instructional delivery as reported by student graduates and their first year site supervisors.

PROGRAM DESCRIPTION

CalStateTEACH is a field-based alternative teacher education program offered on a statewide basis by the California State University system. This program offers candidates an intern or student teaching pathway to the California Multiple Subject Teaching Credential. A Multiple Subject Teaching Credential is held by classroom teachers who teach all or several subjects in a self-contained classroom of students. The CalStateTEACH program integrates theory and practice with daily teaching experiences through a centralized, developmentally-sequenced curriculum that is provided through the Internet, video, audio, printed materials, and CSU faculty supervision. The students are required to complete four semesters over a 16-month consecutive period. The students are assessed on three major learning components: classroom performance, online discussions, and academic work.

The students' classroom (teaching) performance is assessed throughout each semester. Within each semester (of a four semester program) the students are observed teaching four times by their university faculty and four times by their site mentors. The students receive formative feedback following each observation by both the university faculty and the site mentor in face-to-face conversations and in formal written evaluations through the university.

In addition to their classroom teaching, the students are expected to complete and submit academic work electronically to their university faculty. Students receive immediate written feedback through an electronic forum. An electronic tool enhances the feedback process, both summative and formative, by facilitating the students' organization and submission of written work for faculty feedback. The students also work within the electronic forums to create and organize their final electronic portfolios which reflect on students' quality artifacts representing their professional growth during the program. As

well, the electronic forum assists the students with the lesson planning process with organizational support and links to state content standards. This electronic tool allows for formative feedback to be delivered to students for immediate implementation in the students' classrooms and academic work.

Additionally, students' online participation is assessed as another learning outcome to ensure that students benefit from learning from one another. One of the recognized limitations of online supported learning environments is not being able to provide the collaborative learning experience that traditional "brick and mortar" classrooms can offer due to the physical presence of students in one place at the same time. The students in the CalStateTEACH program do not attend class in the traditional manner of sitting at a desk, raising hands, and learning from peers in a face-to-face classroom setting led by a university faculty. The CalStateTEACH development team recognized this limitation and implemented the mandatory use of discussion forums to ensure students in the program benefited from learning from each other. A discussion forum is an interactive portal on the Internet course page for holding discussions between students. The CalStateTEACH program implements an asynchronous discussion forum in which students are required to respond to one another in the discussion forums with thoughtful and meaningful dialogue. Asynchronous discussion means that students do not need to be online simultaneously, but can access the discussions at a time and place convenient to them (Dringus, 2000).

The CalStateTEACH assessment system is based on the California Teacher Performance Expectations (TPE). TPEs describe "the set of knowledge, skills and abilities that [California] beginning teachers should know and be able to demonstrate" (California Commission on Teacher Credentialing, 2001, Teacher Performance Expectations section, para. 1) in order to qualify for the Preliminary Multiple or Single Subject Teaching Credential. Questions about effectiveness surround teacher preparation programs. More specifically, do programs such as CalStateTEACH impact teacher effectiveness in the classroom? A thoughtful consideration of an alternative teacher preparation program is timely considering the need for increased access of credentialing programs.

CalStateTEACH AND TEACHER EFFECTIVENESS

In order to meet the certification needs of districts and students, the CSU addressed the challenge of providing an alternative teacher certification program. CalStateTEACH is intended to meet the academic needs of future teachers in rural and remote areas or students that have access issues due to personal reasons or geographic location. The CalStateTEACH alternative certification program enrolled the first students in 1999 and has presently graduated over 3,500 teachers. Survey research conducted by California Polytechnic State University, San Luis Obispo, indicated that graduates of CSU Fullerton's Alternative Certification Program (CalStateTEACH) chose the program because they were already confident in their ability to do the work of teaching (Chin, as cited in Karge, Glaeser, Sylva, Levine, & Lyons, 2006). Other teacher interns receiving their training in traditional programs rated their confidence in their ability to teach significantly lower than CalStateTEACH interns (p = .05).

Moreover, CalStateTEACH interns rated their teacher preparation program more highly in its ability to provide opportunities to improve the schools in their communities or to reform education than did non-CalStateTEACH interns (p = .05; Chin, as cited in Karge et al., 2006). Although these data are important to the understanding of how CalStateTEACH interns evaluate the program and/or why they elected to enroll in CalStateTEACH to receive their teacher training, no information can be gleaned as to the effectiveness of the program. Conducting an external evaluation of the CalStateTEACH program's effectiveness is essential, especially since this alternative certification program implements an online supported instructional delivery model that is non-traditional.

Over the past six years, there have been a number of external evaluations the Chancellor's Office has had conducted. For the purposes of this study, the researchers have used the CSU System-wide Evaluation of Teacher Preparation (Deans' Report) as the primary source of data measurement for teacher effectiveness of graduates from the CalStateTEACH alternative certification program in a comparative analysis with the other 23 CSU traditional brick and mortar teacher preparation programs. The researchers are not members of the Chancellor's Office research team who collected and analyzed the data. This research is a re-analysis of the data contained in the 2004 Deans' Report.

DESCRIPTION OF DEAN'S REPORT

In 2001 the CSU Deans of Education initiated the first System-wide Evaluation of Teacher Education Programs. The purpose of the evaluation had been to provide the Deans and other CSU leaders formative feedback regarding the preparation of teachers in the CSU teacher education programs. The Deans' Report is an ongoing tool for data collection in all CSU teacher preparation programs. Currently, there have been five evaluations through the Chancellor's Office. These evaluations drew stratified random samples of the graduates and asked them to answer questions about how well their teacher preparation program prepared them for classroom teaching. Additionally, the Deans' Report (Chancellor's Office, 2004) asked questions of the site supervisors to evaluate the teachers' preparation. For the purpose of better understanding the population of teachers who have graduated from an alternative program, data from the Deans' Report were analyzed. The disaggregated data for the CalStateTEACH alternative certification program are presented in this study.

TRADITIONAL TEACHER PREPARATION VERSUS ALTERNATIVE CERTIFICATION

For the purposes of this study, data are presented on CalStateTEACH, an alternative certification model to traditional programs. Traditional programs can be considered as brick and mortar programs with regularly scheduled classroom attendance, with a professor and students present, and a pre-set, established number of days of the term.

METHODOLOGY

The CSU Deans' Report collected data from all 23 traditional teacher certification programs as well as the CSU's only alternative certification program, CalStateTEACH. Researchers from the Chancellor's Office gathered data from the graduates following their first year of teaching and from site supervisors of those

recent CalStateTEACH graduates. In 2004, the CSU Chancellor's Office located approximately 86% of the 2002-03 program completers one year after graduation. For the purposes of the survey, the Chancellor's Office mailed a set of evaluation questions to a random sample of 225 of the 384 elementary school teachers, graduates of the CalStateTEACH program, which represents 58.6% of the program completers. In addition to the teachers, the teachers' immediate supervisors were located and data were collected from these individuals. One hundred thirty-five teachers and 100 supervisors responded to the survey, yielding response rates of 60% and 48% respectively. The data were reported only when the two separate data sources (graduates and their supervisors) were paired, and thus the maximum sample size reported in the tables are 130 teachers and 84 supervisors.

CSU GRADUATES AND SUPERVISOR DATA COLLECTION

Both CSU graduates and their K-12 supervisors were asked to indicate how well the graduates had been prepared to perform certificated teaching responsibilities. The responses addressed the areas noted in Tables 1 to 4 and comprised the data for the survey results of this study. The survey completed by the supervisors had the following question stem: "Based on your observations of and conferences with this teacher, please assess how well s/he was prepared to…?" The survey completed by the first year teaching graduates had the following question stem: "Once you finished your CSU credential program in 2002-03, and when you were a K-12 teacher in 2003-04, how well prepared were you to…?" A summary of the data from the supervisor and student responses are presented in Tables 1 to 4. These data are taken from Tables 12-A, 12-B, 12-C, 12-D, 15-A, and 15-B of the CSU Deans' Report (Chancellor's Office, 2004).

MEASUREMENT ERROR AND VALIDITY

In order to minimize measurement error, the Chancellor's Office verified that the graduate teachers were working in an instructional capacity and that their teaching assignments matched their CSU preparation program. Additionally, the data were collected one year after program completion, so there was no risk that negative responses would adversely impact program completion of the respondents. To maintain confidentiality, a contractor, independent of the Chancellor's Office, mailed and matched the survey responses of program completers with their supervisor's responses.

Evaluation validity was established by adopting an extensive set of evaluation questions based on those developed by other institutions and by independent research centers in California and elsewhere. Furthermore, the evaluation questions were aligned with the TPEs of the State of California and the Professional Accreditation Standards of the State of California and the National Council for Accreditation of Teacher Education.

Table 1

General Concepts and Practices of Teaching: Effectiveness of the Multiple Subject Credentialing Program, as Evaluated by K-8 Employment Supervisors of the Program's First-Year Teaching Graduates

	Based on your observations of and conferences with this teacher, please assess who well s/he was prepared to…	N	Well or Adequately Prepared	Somewhat or Not Prepared	Mean	SD
1	…know and understand the subjects of the curriculum at his/her grade level.	84	95%	5%	2.54	0.59
2	…organize and manage a class or a group of pupils for instructional activities.	82	89%	11%	2.48	0.69
3	…organize and manage student behavior and discipline satisfactorily.	84	86%	14%	2.39	0.76
4	…prepare lesson plans and make prior arrangements for class activities.	83	92%	8%	2.45	0.65
5	…use an effective mix of teaching strategies and instructional activities.	83	88%	12%	2.34	0.69
6	…meet the instructional needs of students who are English learners.	81	77%	23%	2.04	0.78
7	…meet the instructional needs of students from diverse cultural backgrounds.	84	82%	18%	2.25	0.77
8	…meet the instructional needs of students with special learning needs.	80	75%	25%	2.03	0.80
9	…communicate effectively with the parents of guardians on his/her students.	83	84%	16%	2.25	0.78
10	…maintain positive rapport and foster students' motivation and excitement.	84	87%	13%	2.46	0.75
11	…think about problems that occur in teacher and try out various solutions.	84	87%	13%	2.30	0.72
12	…understand child development, human learning and the purposes of schools.	78	83%	17%	2.23	0.75
13	…understand how personal, family & community conditions may affect learning.	82	88%	12%	2.39	0.70
14	…learn about students' interests and motivations, and how to teach accordingly.	83	86%	14%	2.34	0.72
15	…get students involved in engaging activities and to sustain on-task behavior.	83	86%	14%	2.35	0.72
16	…use computer-based applications to help students learn curriculum subjects.	76	83%	17%	2.24	0.83
17	…use computer-based technology in class activities and to keep class records.	75	87%	13%	2.28	0.76
18	…monitor student progress by using formal and informal assessment methods.	83	78%	22%	2.22	0.78
19	…assess pupil progress by analyzing a variety of evidence including test scores.	83	78%	22%	2.20	0.78
20	…assist individual students in areas of their instructional needs in reading/math.	79	80%	20%	2.22	0.80
21	…adjust teaching strategies so all pupils have chances to understand and learn.	84	82%	18%	2.20	0.82
22	…adhere to principles of educational equity in the teaching of all students.	83	87%	13%	2.37	0.71
23	…use class time efficiently by relying on daily routines and planned transitions.	84	87%	13%	2.38	0.77
24	…know about resources in the school & community for at-risk students/families	80	71%	29%	1.94	0.85

Table 2

General Concepts and Practices of Teaching: Effectiveness of the Multiple Subject Credentialing Program, as Evaluated by the Program's First-Year Teaching Graduates, While They Taught Grades K – 8

	Once you finished your CSU credential program in 2002-03, and when you were a K-8 teacher in 2003-04, *how well prepared were you to…*	N	Well or Adequately Prepared	Somewhat or Not Prepared	Mean	SD
1	…know and understand the subjects of the curriculum at his/her grade level.	130	93%	7%	2.48	0.63
2	…organize and manage a class or a group of pupils for instructional activities.	129	91%	9%	2.53	0.67
3	…organize and manage student behavior and discipline satisfactorily.	129	85%	15%	2.30	.082
4	…prepare lesson plans and make prior arrangements for class activities.	130	92%	8%	2.64	0.63
5	…use an effective mix of teaching strategies and instructional activities.	129	89%	11%	2.45	0.73
6	…meet the instructional needs of students who are English learners.	129	88%	12%	2.44	0.69
7	…meet the instructional needs of students from diverse cultural backgrounds.	129	88%	12%	2.43	0.74
8	…meet the instructional needs of students with special learning needs.	128	70%	30%	2.03	0.90
9	…communicate effectively with the parents of guardians on his/her students.	129	83%	17%	2.38	0.80
10	…maintain positive rapport and foster students' motivation and excitement.	129	95%	5%	2.61	0.64
11	…think about problems that occur in teacher and try out various solutions.	128	87%	13%	2.41	0.77
12	…understand child development, human learning and the purposes of schools.	129	88%	12%	2.39	0.71
13	…understand how personal, family & community conditions may affect learning.	128	89%	11%	2.39	0.72
14	…learn about students' interests and motivations, and how to teach accordingly.	129	91%	9%	2.43	0.67
15	…get students involved in engaging activities and to sustain on-task behavior.	129	90%	10%	2.44	0.74
16	…use computer-based applications to help students learn curriculum subjects.	126	83%	17%	2.30	0.82
17	…use computer-based technology in class activities and to keep class records.	128	87%	13%	2.36	0.76
18	…monitor student progress by using formal and informal assessment methods.	129	91%	9%	2.47	0.71
19	…assess pupil progress by analyzing a variety of evidence including test scores.	129	90%	10%	2.47	0.72
20	…assist individual students in areas of their instructional needs in reading/math.	129	90%	10%	2.49	0.70
21	…adjust teaching strategies so all pupils have chances to understand and learn.	128	89%	11%	2.42	0.71
22	…adhere to principles of educational equity in the teaching of all students.	129	95%	5%	2.54	0.63
23	…use class time efficiently by relying on daily routines and planned transitions.	129	91%	9%	2.57	0.67
24	…know about resources in the school & community for at-risk students/families	128	72%	28%	2.02	0.90

Table 3

Concepts and Practices for K-8 Multiple Subject Teaching: Effectiveness of the Multiple Subject Credentialing Program, as Evaluated by K-8 Employment Supervisors of the Program's First-Year Teaching Graduates

	Based on your observations of and conferences with this teacher, please assess who well s/he was prepared to…	N	Well or Adequately Prepared	Somewhat or Not Prepared	Mean	SD
1	…teach reading-language arts according to California Standards in Reading.	77	86%	14%	2.36	0.76
2	…teach mathematics according to the California Content Standards in Mathematics.	76	86%	14%	2.34	0.76
3	…teach science according to California State Content Standards in Science.	73	75%	25%	2.07	0.79
4	…teach history and social studies according to the California Content Standards.	74	76%	24%	2.01	0.75
5	…teach visual and performing arts according to California Content Standards.	68	66%	34%	1.87	0.81
6	…teach physical education according to the Cal. P. E. Curriculum Framework.	66	68%	32%	1.85	0.85
7	…design hands-on classroom activities that suit students' short attention spans.	84	85%	15%	2.27	0.72
8	…enable young pupils to interact with their peers in healthy, productive ways.	83	90%	10%	2.42	0.66
9	…foster the academic skills of students at different levels of prior proficiency.	84	82%	18%	2.19	0.78
10	…extend students' concrete thoughts by familiarizing them with abstract ideas.	83	83%	17%	2.18	0.70
11	…assist students in managing time and keeping track of school assignments	83	87%	13%	2.30	0.73
12	…build on peer friendships, develop group skills and foster leadership roles.	81	85%	15%	2.41	0.74
13	…encourage pupils to take risks in discovery activities and divergent thinking.	82	85%	15%	2.37	0.73
14	…create an environment that supports language use, analysis, practice and fun.	81	86%	14%	2.38	0.75
15	…use language so pupils at differ levels of understand oral and written English.	81	83%	17%	2.27	0.81

Table 4

Concepts and Practices for K-8 Multiple Subject Teaching: Effectiveness of the Multiple Subject Credentialing Program First-Year Teaching Practices, as Evaluated by First- Year Teaching Graduates, While They Taught Grades K – 8

	Once you finished your CSU credential program in 2002-03, and when you served as a K-8 teacher in 03-04, how well prepared were you to…	N	Well or Adequately Prepared	Somewhat or Not Prepared	Mean	SD
1	…teach reading-language arts according to California Standards in Reading.	126	87%	13%	2.48	0.73
2	…teach mathematics according to California Standards in Mathematics.	128	90%	10%	2.53	0.68
3	…teach science according to California State Content Standards.	127	76%	24%	2.13	0.84
4	…teach history and social studies according to the California Content Standards.	127	77%	23%	2.14	0.82
5	…teach visual and performing arts according to California Content Standards.	126	60%	40%	1.83	0.95
6	…teach physical education according to the Cal. P. E. Curriculum Framework.	127	59%	41%	1.80	0.96
7	…design hands-on classroom activities that suit students' short attention spans.	129	91%	9%	2.43	0.70
8	….enable young pupils to interact with their peers in health, productive ways.	129	89%	11%	2.45	0.73
9	…foster the academic skills of students at different levels of prior proficiency.	128	87%	13%	2.41	0.75
10	…extend students' concrete thoughts by familiarizing them with abstract ideas.	128	84%	16%	2.19	0.75
11	…assist students in managing time and keeping track of school assignments.	129	81%	19%	2.29	0.80
12	…build on peer friendships, develop group skills and foster leadership roles.	129	84%	16%	2.37	0.80
13	…encourage pupils to take risks in discovery actives and divergent thinking.	128	85%	15%	2.35	0.79
14	…create an environment that supports language use, analysis, practice and fun.	127	90%	10%	2.51	0.76
15	…use language so pupils at differ levels of understand oral and written English.	127	89%	11%	2.50	0.71

Validity of composites, sets of evaluation questions that cohesively relate to each other, was established initially through experts. The Deans and Chancellor's staff met with and obtained input and feedback from CSU faculty and program managers related to the conceptual validity of the composite constructs. Secondly, empirical validity was established through factor analysis with Varimax rotation.

RESULTS

The purpose of this study was to investigate and evaluate the effectiveness of an online supported alternative certification teacher preparation program in preparing candidates for teaching in the multiple subject classroom. Tables 1 and 2 present the responses by both supervisors (Table 1) and teachers (Table 2) regarding the preparedness of first-year teachers in concepts and practices of teaching. The general concepts and practices of teaching, as evaluated by the employment supervisors of the program's first-year teaching graduates, are reported in Table 1. Between 71% to 95% of the supervisors reported that their teachers were well or adequately prepared in each of the 24 areas surveyed. Seventy-one percent of the supervisors reported that their first-year CalStateTEACH-trained teacher graduates were well or adequately prepared to know about resources in the school and community for at-risk students and families (question 24 or Q24), and 29% of supervisors reported those teachers were only somewhat or not at all prepared. Ninety-five percent of the supervisors reported that their first-year CalStateTEACH-trained teacher graduates were well or adequately prepared to know and understand the subjects of the curriculum at the teacher's grade level (Q1), whereas only 5% responded the teachers were only somewhat or not at all prepared.

In contrast, Table 2 reports the opinions of first-year graduates teaching in K-8 grades on their preparedness in concepts and practices of teaching—the same survey questions on which their supervisors rated them and which are reported in Table 1. Between 70% and 95% of the teacher respondents indicated that they were well or adequately prepared in each of the 24 areas surveyed. Teachers, however, did not rate the same two questions as their supervisors as their highest and lowest teaching competencies. Nonetheless, the opinions of the teachers' supervisors, while slightly different from teaching graduates, were closely aligned with those teachers' opinions. For example, both groups of respondents reported the lowest percentage of well or adequately prepared teachers on the same two survey items (Q24 and Q8) although the rank of lowest and second lowest are reversed between the two. At 70%, the lowest ranked item, teacher respondents reported they were well or adequately prepared to meet the instructional needs of students with special learning needs (Q8). The remaining 30% of the teachers reported they were only somewhat or not at all prepared to do so. Q8 covers an area of pedagogy where teachers reported they were the least well prepared, and Q24 (knowledge of school resources for at-risk students) was a close second at 72%.

For highest teaching competency, 95% of the teachers reported they were well or adequately prepared to maintain positive rapport and foster student's motivation and excitement (Q10) and to adhere to principles of education equity in the teaching of all students (Q22). These two teaching areas, maintaining positive rapport (Q10) and education equity (Q22), received the modal

percentage of 87% of supervisors believing that first-year CalStateTEACH-trained teacher graduates were well or adequately prepared. Knowledge and understanding of curriculum (Q1) was ranked third highest by teachers, but was ranked the highest by supervisors.

Table 5 displays data combined from Tables 1 and 2 showing side-by-side the percentage of teachers and their supervisors who responded with "well or adequately prepared." Chi-square analyses conducted to assess whether these differences were significant between the supervisors' opinions and the teachers' opinions for each of the items on the survey. Because the chi-square tests produced 2 x 2 contingency tables, Yates' continuity correction formula was used since, in such cases, "the Pearson's chi-square tends to produce significance values that are too small (in other words, it tends to make a Type I error)" (Field, 2005, p. 685).

Table 5

General Concepts and Practices of Teaching: Percentage of Participants Who Responded with 'Well or Adequately Prepared' on the Effectiveness of the Multiple Subject Credentialing Program for First Year Graduates

	Based on your observations of and conferences with this teacher, please assess who well s/he was prepared to…	Supervisors	Teachers	Difference
1	…know and understand the subjects of the curriculum at his/her grade level.	95%	93%	+2%
2	…organize and manage a class or a group of pupils for instructional activities.	89%	91%	-2%
3	…organize and manage student behavior and discipline satisfactorily.	86%	85%	+1%
4	…prepare lesson plans and make prior arrangements for class activities.	92%	92%	0%
5	…use an effective mix of teaching strategies and instructional activities.	88%	89%	-1%
6	…meet the instructional needs of students who are English learners.	77%	88%	-11%
7	…meet the instructional needs of students from diverse cultural backgrounds.	82%	88%	-6%
8	…meet the instructional needs of students with special learning needs.	75%	70%	+5%
9	…communicate effectively with the parents of guardians on his/her students.	84%	83%	+1%
10	…maintain positive rapport and foster students' motivation and excitement.	87%	95%	-8%
11	…think about problems that occur in teacher and try out various solutions.	87%	87%	0%
12	…understand child development, human learning and the purposes of schools.	83%	88%	-5%
13	…understand how personal, family & community conditions may affect learning.	88%	89%	-1%
14	…learn about students' interests and motivations, and how to teach accordingly.	86%	91%	-5%
15	…get students involved in engaging activities and to sustain on-task behavior.	86%	90%	-4%
16	…use computer-based applications to help students learn curriculum	83%	83%	0%

	subjects.			
17	…use computer-based technology in class activities and to keep class records.	87%	87%	0%
18	…monitor student progress by using formal and informal assessment methods.	78%	91%	-13%
19	…assess pupil progress by analyzing a variety of evidence including test scores.	78%	90%	-12%
20	…assist individual students in areas of their instructional needs in reading/math.	80%	90%	-10%
21	…adjust teaching strategies so all pupils have chances to understand and learn.	82%	89%	-7%
22	…adhere to principles of educational equity in the teaching of all students.	87%	95%	-8%
23	…use class time efficiently by relying on daily routines and planned transitions.	87%	91%	-4%
24	…know about resources in the school & community for at-risk students/families	71%	72%	-1%

Only responses to three questions yielded significant differences between the opinions of supervisors and teachers in their preparation of general concepts and practice of teaching. There was a significant difference in opinion on Q6 (preparedness to meet the instructional needs of students who are English learners)—$\chi^2(1, N = 210) = 4.30$, $p < .05$. There was also a significant difference in opinion on Q18 (preparedness to monitor student progress using formal and informal assessment methods)— $\chi^2(1, N = 212) = 5.40$, $p < .05$. Finally, there was a significant difference in opinion on Q19 (preparedness to assess pupil progress by analyzing a variety of evidence including test scores)— $\chi^2(1, N = 212) = 4.56$, $p < .05$. For 21 of the 24 general concepts and practices of teaching that were on the survey, both supervisor and teacher respondents indicated a relatively high level of preparedness, and there was agreement between the two groups in the percentages of supervisors and teachers who felt CalStateTEACH-trained teacher graduates were well prepared in these areas. Of the three questions (Q6, Q18, and Q19) where significant differences were found, a greater percentage of teachers rated themselves as well or adequately prepared than did their supervisors.

Tables 3 and 4 present the responses by both supervisors (Table 3) and teachers (Table 4) regarding the effectiveness of first-year teachers in their teaching practices related specifically to teaching multiple subjects. The effectiveness of first-year teachers, as evaluated by the employment supervisors, are reported in Table 3. Supervisors reported 86% of their first-year CalStateTEACH-trained teacher graduates were well or adequately prepared to teach both reading-language arts and mathematics. Of all the curricular areas taught by multiple subject teachers, supervisors rated these teachers as most well or adequately prepared in the area of reading-language arts and mathematics and least well or adequately prepared in visual/performing arts (66%) and physical education (68%). Science and history/social studies rank in the middle with 75% and 76% (respectively) of the supervisors reporting their first-year CalStateTEACH-trained teacher graduates as well or adequately prepared.

In contrast, as reported in Table 4, 90% of first-year graduates teaching in K-8 grades reported they were well or adequately prepared to teach mathematics, which was ranked highest of all curricular areas (followed closely by reading-language arts, 87%), and being well or adequately prepared to teach science and history/social studies were ranked in the middle at 76% and 77% respectively. The rankings between employment supervisors and their teachers are closely aligned, and chi-square analyses did not yield any significant differences in their respective opinions regarding the preparation of first-year CalStateTEACH-trained teaching graduates.

In order to report on the effectiveness of the CalStateTEACH program in preparing teaches for their first year (and beyond), the researchers examined the cumulative data from all teacher preparation programs on the 21 CSU campuses (two of the 23 CSU campuses do not offer teacher preparation programs). In the Deans' Report (Chancellor's Office, 2004) data are provided on 19 composite areas, which are presented in Table 6. In all 19 areas, the CalStateTEACH program graduates reported a higher level of preparedness than the teacher preparation programs offered at CSU campuses system-wide. The "CSU System" percentage is comprised of both CalStateTEACH graduate opinions and their traditional brick-and-mortar-prepared colleagues, who make up the lion's share of the graduates. These data suggest that teachers completing the CalStateTEACH program do as well as those completing a traditional program.

Table 6

CSU Systemwide Evaluation of Teacher Preparation (2004)

Composite Area	CalStateTEACH	CSU System	Difference
Multiple Subject Credential program effectiveness	83%	80%	3%
Prepared to teach English language arts (K-12)	89%	83%	6%
Prepared to teach mathematics (K-12)	90%	84%	6%
Prepared to teach science (K-12)	80%	74%	6%
Prepared to teach history-social science (K-12)	81%	74%	7%
Prepared to plan instruction	90%	81%	9%
Prepared to motivate students	89%	80%	9%
Prepared to manage instruction	89%	79%	10%
Prepared to address equity and diversity in teaching	84%	75%	9%
Prepared for pedagogy across the curriculum	85%	78%	7%
Prepared for assessment and reflection	85%	79%	6%
Prepared to work with young children	89%	80%	9%
Prepared to work with middle-level students	87%	78%	11%

Prepared to work with adolescents	100%	76%	24%
Prepared to work with English learners	88%	79%	9%
Prepared to work with special learners	82%	75%	7%
Overall value of CSU professional instruction	90%	80%	10%
Overall quality and value of CSU fieldwork	93%	73%	10%
Prepared to use educational technology	86%	84%	2%

DISCUSSION AND CONCLUSIONS

The current study presented information regarding perceived effectiveness of an online teacher preparation program and the importance of considering alternative certification routes to meet teacher demands. The CalStateTEACH teacher preparation program is one avenue that meets the need of producing effective teachers in the elementary classroom, in the opinions of supervisors of teacher graduates from the program.

An analysis of the respondents' data showed that supervisors and teaching graduates consistently agree on the high levels of preparedness in both areas of general concepts and practices of teaching and concepts and practices related to teaching in K–8 multiple subject classrooms. Considering the teacher shortage and the demand for highly qualified teachers in every classroom, traditional brick and mortar IHEs should not be the only avenue for the preparation of teachers, especially when the data suggest that the alternative certification program CalStateTEACH might better prepare teachers to face the challenges of teaching in multiple subject classrooms.

With NCLB, the terms quality and effective are used to refer to the degree requirements and test demands of the federal government in relation to teacher preparedness. For the purposes of this study, the term effectiveness refers to the perceptions of the graduate and immediate supervisor in the specific areas listed in the Deans' Report. This study did not attempt to evaluate the quality of teacher educations programs or the quality of student outcomes. Future research should be conducted to examine the relationship between teacher preparation, effectiveness, quality of instruction, and quality of student learning. Additionally, the commitment to teaching and the willingness to work in high need areas and with underrepresented students should be compared between alternative and traditional preparation programs.

LIMITATIONS

The findings and conclusions drawn from this study have limitations, and the results should be considered suggestive rather than conclusive. Survey data from only 35.2% of the total CalStateTEACH 2003-04 teacher graduates are included in the analysis, and the data were self reported. The drawback of using self-report data is inherent in the design, but having the supervisors of the teacher graduates also respond to the same survey questions lends some credibility to the accuracy of the responses. Although the site administrators'

responses to the questions should provide a check for accuracy, their responses, too, are subjective and their investment in their teachers' success could impact their responses.

Having limited access to the secondary data narrowed the scope and restricted the depth of our analyses. Notwithstanding, our findings were significant to advocate for the value of one alternative online teacher certification program, CalStateTEACH.

IMPLICATIONS FOR TEACHER EDUCATION

First, the present study has established that one alternative certification preparation program implementing an online support format can effectively prepare teachers of elementary classrooms. Supervisors and teachers (graduates of the CalStateTEACH program) responded consistently that the CalStateTEACH first-year teachers were well prepared. The data on which this study was based are unique in that the same questions were asked of the site supervisors and the students with the intent of determining if the student self-reported data would be corroborated by the site supervisor responses. Specifically in the areas of core curriculum, a high percentage of first-year teachers and their supervisors reported CalStateTEACH graduates were well or adequately prepared to teach mathematics (88.2%; weighted average of percentages of teachers and their supervisors), reading-language arts (86.5%; weighted average), history/social studies (76.6%; weighted average), and science (75.7%; weighted average) in today's California classrooms. Due to the limitation of the data collected and presented in the Deans' Report, it is impossible to ascertain the underlying reasons why some CalStateTEACH graduates and their supervisors did not think the first-year teachers were well prepared in any given area. Educators, however, can still learn from this online alternative certification program from the Deans' Report, specifically what is working well and what areas need to be strengthened in a standardized systemwide online supported delivery model.

Finally, educators and program designers can benefit from identifying the successful factors associated with an alternative certification online supported learning environment, such as the CalStateTEACH model, especially considering the need for highly qualified teachers in every classroom and the inability of the traditional teacher program model to produce sufficient numbers of teachers. Quality teacher preparation can be accomplished with alternative delivery models. As program designers at the university level attempt to prepare qualified teachers, therefore, alternative delivery models should be considered, especially ones that have quantitative data supporting their quality and informing program developers of their strengths and areas for improvement.

RECOMMENDATIONS FOR FUTURE STUDY

Many teacher preparation programs are now considering the era of technology-driven delivery models; thus allowing educators the opportunity to offer alternative programs that meet students' needs. In order to generalize findings to larger populations and better inform program development, future research should be conducted with an experimental group (teachers prepared through CalStateTEACH or another alternative certification program

implementing online components) and a control group (traditional certification programs) so outcomes can be compared and statistically significant differences can be identified.

Although the findings presented in this study are preliminary and suggest the need for additional research, both site supervisors and first-year teaching graduates of the CalStateTEACH alternative certification program opined that online supported credentialing education can effectively prepare teachers.

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