Assessing the Special Education Faculty Shortage:
The Crisis in California—A Statewide Study of the Professoriate

By Susan Evans, Michael Eliot, Jolene Hood, Max Driggs, Ayako Mori, & Theresa Johnson

The imbalance of supply and demand for special education faculty continues to be a national concern (Smith, Pion, Tyler, & Gilmore, 2003; Smith, Pion, Tyler, Sindelar, & Rosenberg, 2001). While the number of earned doctoral degrees awarded in special education in the United States has remained steady since 1992, at approximately 250 per year, fewer than half of recent graduates chose to pursue careers in higher education. With the number of vacancies for special education junior faculty averaging over 200 per year, more than one third of all job searches fail, resulting in the elimination of some positions, thus diminishing the nation's training and research capacity (Pion, Smith, & Tyler, 2003; Smith et al., 2001).

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The discrepancy between the demand for special education faculty and the limited supply of qualified individuals has been attributed to several factors. The first factor is graduate immobility. In a national survey of 1,267 special education doctoral candi-

dates, three-fourths of students applied to only one doctoral program at a university within 100 miles of their residence (Tyler, Smith, & Pion, 2003). Given that the median age for special education doctoral candidates is 42, unwillingness to relocate has been frequently cited by graduates as an issue in both doctoral program selection and job consideration upon graduation (Smith & Tyler, 1999).

A second factor is the large number of competing career opportunities which can offer graduates a significantly higher salary than they would receive as assistant professors. With beginning faculty salaries ranging from $35,000 to $50,000 per year, many recent graduates have rejected higher education careers (Hardman & West, 2003). Because of decreased federal funding for doctoral studies, many graduates face repayment of large student loans, providing motivation to look for higher paying positions outside of academia. Additional disincentives to higher education careers include the increased demands placed on new faculty members, such as heavy teaching loads (Pion et al, 2003) and the pressure to obtain outside funding (Smith et al., 2001). These issues heighten ongoing concerns about the aging of the special education professoriate (Smith & Salzberg, 1994; Tawney & DeHaas-Warner, 1993).

While the shortage of special education faculty is a nationwide concern, the problem is particularly acute in a number of regions in the country. In 2001, four Midwest states Ohio, Illinois, Michigan, and Indiana (with a total population of 40 million residents), had 328 enrolled special education doctoral students. By comparison, four West Coast states with the same size population, California, Oregon, Washington, and Nevada, had a combined doctoral enrollment of 157 students. Low doctoral enrollments were also reported in the central mountain states including Montana, North and South Dakota, Wyoming, and Nebraska, as well as northern New England, and southern states such as Arkansas, Louisiana, and Mississippi. In 2001, California, with a population of over 35 million residents, had only 54 special education doctoral candidates in the pipeline. By comparison, the states of New York and Texas (with a combined population equal in size to California) had, respectively, 162 and 135 doctoral students (Smith et al., 2001).

California has a geographic area larger than New England, New York, New Jersey, and Pennsylvania combined, yet there are only seven institutions of higher education (IHEs) which offer a doctorate in special education, all with small enrollments. Between 1994 and 2000, these programs produced six special education doctorates per year for the entire state; only two graduates per year pursued careers in higher education (Smith et al., 2001). There are 42 colleges and universities in California offering one or more state-approved special education credentials. In 2002-03, more than 20 faculty openings in special education were advertised statewide, primarily at the assistant professor level in the area of high incidence disabilities. With only a handful of graduates per year pursuing careers in higher education, approximately half of the positions in smaller IHEs and one third in the larger IHEs went unfilled. The difficulty in staffing special education

teacher education programs is exacerbated by California's exorbitant housing costs, which discourages relocation from other regions of the country.

In addition to the small number of doctoral training programs and the high cost of living, part of the shortage may be attributed to the state's master plan, which differentiates between the roles of the California State University system (CSUs) and the University of California system (UCs). While the bulk of teacher training in California is conducted on the 23 CSU campuses, the CSUs are not authorized to offer independent doctoral programs; three CSU campuses, however, have joint doctoral programs with other universities. The UC campuses offer doctoral degrees, but few UCs have credential programs in special education. Only two of the nine UCs (22%) offer an independent doctoral degree in special education. Of the 19 private colleges in California, only two (11%) offer doctoral degrees in special education.

Between 1993 and 2000, the number of K-12 special education students in California rose from 432,562 to 610,400, a 41% increase. Across the state, teachers who do not possess special education credentials and who lack training and experience with exceptional populations are being hired to work in special education classrooms. In 1998, the California Commission for Teacher Credentialing (CCTC) issued close to 5,000 emergency permits in special education. Between 1996 and 1998, there was a 400% increase in use of substitute teachers (California Basic Educational Data System, 2000). It has been estimated that a staggering one third of the nation's 30,000 unqualified special education teachers work in California (Council for Exceptional Children, 2002). Clearly, California needs more fully credentialed special education teachers, but who will train them?

In addition to the issue of the large quantity of untrained special educators, California's population is also the largest and the most diverse in the nation. In the 2002-03 academic year, 66% of the state's K-12 students were members of historically underrepresented groups (45% Latino, 12% Asian/Pacific Islander, 8% African American, and 1% Native American) while 74% of K-12 teachers were white. Similarly, approximately 83% of college and university full-time faculty in California were white, as were 93% of part-time faculty (California Basic Educational Data System, 2003). Since a significant predictor in the enrollment of diverse credential candidates is the presence of faculty of color, there has been a growing demand for more teachers and professors from culturally and linguistically diverse groups (Dooley, 2003). Demographic data were not available for California; however, nationwide, in 2001, only 8.5% of special education doctoral students were African-American, 5% were Latino, 4% were Asian, and 2% were Native American; fewer than half were likely to pursue careers in higher education upon graduation (Tyler et al., 2003). Although a more diverse professoriate is desired, how can this goal be accomplished?

This study examined several questions related to the faculty shortage in special education. Using California as a case, what were the personal and professional characteristics of current special education faculty preparing special education

credential and doctoral candidates? What were the anticipated needs for special education faculty, statewide, over the next five years? How many special education doctoral candidates were being prepared in California? Finally, what solutions could be implemented to increase the number and diversity of special education faculty?

Methods

Design

This descriptive study examined the special education faculty shortage by collecting data from all university-affiliated teacher credentialing and doctoral training institutions in one state. The researchers contacted the 42 colleges and universities in California which offered one or more state-approved special education credentials, including the seven programs which offered a doctorate in special education. Department chairpersons or their designees were asked to participate in a structured, 30-minute telephone interview.

Instrumentation

In order to develop the instrument, a focus group was assembled through e-mail solicitations to members of the California Association of Professors of Special Education (CAPSE), who were asked to participate in a one-hour discussion about the shortage in the professoriate. The focus group was held after the Fall 2001 CAPSE meeting. Nine members agreed to participate. Prior to the discussion, each focus group participant read a fact sheet describing the scope of the current faculty shortage, nationwide and in California. The focus group facilitator posed five discussion questions addressing the faculty shortage and possible short- and long-term solutions. The response period was limited to 10 minutes per question. Two researchers observed and audio-taped the discussion. After the last question, the facilitator summarized the discussion and asked for final comments.

Based on the focus group discussion and a review of the related literature (Ryndak, Webb, & Clark, 1999; Smith et al., 2001; Tawney & DeHaas-Warner, 1993; Tyler & Smith, 1999; Smith & Salzberg, 1994), an interview protocol was developed. To assure the highest possible response rate, telephone interviews were deemed the most reliable data collection method. Department chairpersons were chosen as informants because of their proximity to the problem, as well as their familiarity with faculty and students.

The interview protocol included 26 questions (see Figure 1) designed to elicit information about the number of tenure-track, term, and adjunct faculty positions; areas of faculty expertise; faculty demographics, such as age, ethnicity, gender, and disabilities; entry level salary for an assistant professor; anticipated needs for additional faculty; faculty attrition; successful and failed job searches; and current strategies for filling vacant positions. Data also were collected on current student demographics (credential through doctoral), number of recent graduates, and

Figure 1
Interview Protocol

Introduction. Hello, my name is _____. You were recently contacted by a member of our group to participate in a telephone interview. We are conducting a study to identify the factors associated with the shortage of special education faculty in California. Before we begin, I would like to remind you that your participation in this interview is completely voluntary, and you may decide at any time to discontinue the interview. At this time, I need to ask if you have read the consent form and if you now agree to participate?

We are interested in learning more about the special education faculty at your institution. Universities have full-time faculty who are on the tenure-track, while other full-time faculty have term (or year to year) contracts. Other faculty are part-time adjuncts.

1. How many faculty in the special education credential program are tenure-track? Of these, how many are Assistant Professors? Associates? Full?
How many faculty in the special education credential program are full-time term appointments? Of these, how many are Assistant Professors? Associates? Full?

2. What are the numbers of tenure and term faculty in the following specialty areas?
Tenure-track: Mild/moderate? Moderate/severe ? Low incidence? Early childhood?
Term: Mild/moderate? Moderate/severe ? Low incidence? Early childhood?
Do you have both on and off campus credential programs in special education? Yes? No?
Depending on response, only ask appropriate on or off campus questions.
Does your program employ adjuncts? Yes? No?
If yes: continue with interview.
If no: skip to Question 6.

3. How many special education faculty adjuncts does your Department employ on campus? Off campus?

4. How many on and off campus adjuncts are currently teaching in the following specialty areas: Mild/moderate? Moderate/severe ? Low incidence? Early childhood?

5. Has the number of on-campus adjunct faculty increased, decreased, or stayed the same over the past five years? Increased? Decreased? No change? Why?

Now we are going to return to the subject of tenure-track faculty positions. Questions 6-10 relate only to tenure-track faculty positions.

6. How many tenure-track special education credential faculty are in the following age groups? 30-39? 40-49?50-59?60+?

7. How many tenure-track faculty do you have who would identify themselves as: African American? Latino? Asian/Pacific Islander? Native American? White? Other?

8. How many tenure-track faculty are female? Male?

9. To your knowledge, do you have tenure-track faculty with disabilities, and if so, how many?

10. What is the entry-level salary range for a tenure-track assistant professor?

We are interested in your anticipated needs for additional faculty in the next five years.

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Figure 1
Interview Protocol
(continued from previous page)

11. How many additional special education tenure-track faculty positions do you anticipate will be needed at your institution in the next five years?

12. How many of these projected positions will be needed in the following specialty areas? Mild/moderate? Moderate/severe ? Low incidence? Early childhood?

13. How many tenure-track faculty will be retiring in the next five years?

14. In the last 3 years, how many tenure-track faculty have left your institution to take a position out of state?

15. Has your Department experienced a failed job search in the last 3 years? Yes? No? If yes, how many?

16. Have you lost any tenure-track lines in the last 3 years? Yes? No? If yes, how many?

17. When you want to fill a tenure-track position, what strategies do you use?

We are interested in the number of special education credential and doctoral candidates who are currently enrolled at your university. Questions 18 and 19 refer to the special education credential candidates in your program.

18. How many of your on-campus special education credential candidates are currently enrolled in the following areas? Mild/moderate? Moderate/severe ? Low incidence? Early childhood?

19. How many of your off-campus special education credential candidates are currently enrolled in the following areas? Mild/moderate? Moderate/severe ? Low incidence? Early childhood?

20. Do you currently have a doctoral program in special education? Yes? No?

(If yes, continue with questions 21-24 and skip Question 25; If no, skip to Question 25)

Questions 21-23 refer to the special education doctoral candidates in your program.

21. Are any of these doctoral students adjunct faculty in your credential program? Yes? No?

22. How many of your doctoral candidates fall under the following categories? Mild/moderate? Moderate/severe ? Low incidence? Early childhood?

23. How many doctoral candidates graduated last year or will be graduating this year? 2004? 2005?

24. In the last few years, did any of the graduates from your master's program enter the doctoral program at your university? How many?

25. If you do not have a doctoral program at the present time, do you anticipate starting a program in the future? If so, will you be doing this with another institution? When do you expect the first students to enter the program?

Finally, we are interested in finding novel solutions to help address the current shortage of special education faculty in California.

26. Do you have any ideas or suggestions for solutions which may help alleviate the current shortage of special education faculty in California?

anticipated future doctoral programs. The final question asked for possible solutions to the current shortage of special education faculty.

Prior to data collection, three university faculty members not in the interview pool examined the items on the protocol for content validity. Items were added, rewritten, or deleted, based on the feedback received from the panel. The questions were ordered for clarity and flow during the telephone interviews. The goal of the data collection process was to accurately portray the significance of the problem and to provide a forum for ideas and solutions.

Participants

Respondents were identified from a roster of university-affiliated, special education teacher preparation programs provided by the California Commission on Teacher Credentialing (CCTC). Personnel preparation programs that existed strictly within public school districts, without an IHE affiliation, were not included in the study. The department chairpersons were contacted to obtain their consent to participate, establish a convenient time for the actual interview, and, if needed, identify alternate interviewees. Thirty-seven of the 42 department chairs or their assignees (85%), representing 100% of the public and 70% of the private IHEs, agreed to be interviewed. For various reasons, representatives of five institutions were unavailable or unable to complete an interview during the data collection period. The chairpersons who agreed to participate received a consent form and the protocol by e-mail in order to prepare for the interview. During the 30-minute telephone discussion, researchers recorded the participants' responses and any additional information on the interview protocol forms. Numerical data were analyzed using SPSS to compute frequencies and percentages of responses. Qualitative data were content analyzed by two members of the research team who were in agreement in 95% of the cases.

Results

Quantitative Results: Faculty Characteristics

Total number of faculty. In the 2002-03 academic year, a total of 932 faculty taught in university-affiliated, California special education credential programs. Of these, 74% (n=686) were part-time adjunct faculty. Only 20% (n=182) were tenure-track professors; an additional 7% (n=64) held full-time term (non-tenure-track) appointments. Among those programs which used adjuncts, nearly half (49%) indicated that an increased number of adjuncts had been hired over the last five years; 14% reported a decrease; and 37% reported no change.

Teaching assignments. The number of full- and part-time faculty teaching in the special education exceptionalities are presented in Table 1. Of the 981 teaching assignments (some of the 932 professors and adjuncts taught in multiple assignments), 63% taught in the area of mild/moderate disabilities (high incidence), 30%

Table 1.
Characteristics of Special Education Faculty in California Institutions of Higher Education

Teaching Position

	N	Full	Assoc.	Asst.	Other
Tenure-track	182 (20%)	79	33	50	20
Term	64 (7%)	9	10	22	23
Adjunct	686 (73%)				
Total	932	88	43	72	43

Teaching Assignment

	N	Mild/Mod.	Mod./Sev.	Early Ch.	Other
Tenure-track	184 (19%)	103	61	19	1
Term	49* (4%)	25	10	2	12
Adjunct	748 (77%)	480	221	37	10
Total	981**	608	292	57	23

Mild/Mod. = High incidence, Mod./Sev. = Low Incidence, Early Ch. = Early Childhood
* Missing data for 16 Term Faculty's teaching assignments.
**N = 981 because some instructors have multiple assignments.

in the area of moderate/severe disabilities (low incidence), 6% in early childhood special education, and 1% in other programs.

Age. Since only 20% of the special education professors in California held tenure-track positions, their age was a relevant issue to examine. Of the 182 tenure-track faculty members, 53% were over the age of 50. While 18% were 30 to 39, and 29% were between 40 and 49, the largest age group was between 50 and 59 years (47%); 6% were 60 or older. A total of 34 faculty were planning to retire within the next five years. This figure represented one of every five tenure-track special education professors in California.

Diversity. Of the 182 special education tenure-track faculty in California, 78% were white, 10% Asian/Pacific Islander, 5% Latino, 4% African American, 2% Native American and 1% other. Seventy-three percent were female. Ten percent reported having a disability.

Salary. Thirty of the 37 participating IHEs reported entry-level salaries for tenure-track assistant professors. Salary levels ranged from $30,000 (only one IHE reported this amount) to $60,000 (only one IHE reported this amount), with an average beginning salary of $44,993. One third of the IHEs reported entry-level salaries between $30,000 and $45,000, one third between $45,000 and $50,000, and one third between $50,000 and $60,000.

Job projections. Data also were collected on the projected number of full-time, tenure-track faculty needed over the next five years. Among the 37 IHEs, 32 (86%) anticipated increases in tenure-track openings, with special education department chairpersons projecting a need for an additional 105 full-time positions by 2008. Within the specialty areas in which new jobs would be needed, more than half (n=53) were projected for mild/moderate disabilities (high incidence), 39 for moderate/severe disabilities (low incidence), and 13 for early childhood special education.

Failed searches. Seventeen IHEs (45%) reported one or more failed job searches for tenure-track positions within the last three years. Nine IHEs had one failed job search, while eight IHEs had two or more failed searches. Some IHEs reported losing tenure-track budget lines for positions which they were unable to fill. Only one IHE reported losing tenure-track professors to out-of-state positions.

Quantitative Results: Student Characteristics

Credential candidates. The number of special education candidates was also examined. All 37 IHEs offered one or more types of special education credential, for a total of 112 credential programs. Of these, 44% of 112 credential programs (n=49) were in mild/moderate disabilities (high incidence), 43% (n=48) were in moderate/severe disabilities (low incidence), and 13% (n=15)were in early childhood special education. Among the 112 credential programs, the majority (73%) had small to medium-size enrollments (10 to 90 students per year); 27% had large enrollments (100 to more than 200 students per year). Based on these ranges, it was estimated that, across the exceptionalities, there were 9,000 special education credential candidates enrolled at university-affiliated IHEs in 2002-03.

Doctoral candidates. Data were collected from the seven doctoral programs in California. The number of doctoral students totaled 65. Of these, 41 doctoral candidates (63%) were in mild/moderate disabilities (high incidence), 18 (27%) were in moderate/severe disabilities (low incidence), and six (9%) were in early childhood special education. Many doctoral candidates were already teaching at colleges and universities in California, either full or part-time. Eighteen doctoral candidates were projected to graduate in 2003-04.

Of the 30 IHEs without a doctoral program, 22 (73%) indicated their interest in starting a doctoral program in the future. Seventeen universities, mostly CSUs, wanted to develop a joint doctoral program in partnership with another institution. Of the IHEs which already had implementation time lines, two IHEs expected to enroll their first doctoral students in 2004, four in 2005, and three each in 2006, 2007, and 2008. Admittedly, these were optimistic projections, particularly in view of the 2004 budget crisis in California which has frozen hiring lines at CSUs across the state. Seven IHEs did not report expected start dates.

Qualitative Results

Three questions on the survey yielded qualitative responses (items 5, 17, and 26). Question 5 asked whether the number of adjunct faculty at each institution had increased, decreased, or stayed the same. Participants also were asked to report the reasons for their answers. Participants who reported an increased reliance on adjuncts (49%) attributed this to growth in student enrollment and a corresponding lack of full-time faculty due to unfilled positions. Three IHEs hired more adjuncts due to grant funding, three institutions hired additional adjuncts to work in new programs, and two added adjuncts to staff on-line classes.

Among the 13 respondents (36%) who reported that the number of adjuncts had remained the same, four said their programs were maintaining steady student enrollments, and two had access to a consistent hiring pool from among local school district employees and doctoral students. Other respondents said budget cuts would not allow for new hires or that full-time faculty (term or tenure-track) were hired to meet demands. Only five respondents (14%) reported that the number of adjuncts had decreased. Of these, four indicated that they hired new tenure-track faculty; one indicated that the program was reducing the number of adjuncts in order to become more consolidated.

Item 17 asked participants what strategies were used to fill open faculty positions. Among the 37 IHE participants, there were 105 responses to this question which were organized into three categories. The first and largest category (67% of total responses) was advertising, with 38% of the respondents using the *Chronicle of Higher Education*. Other responses included listing positions in special education journals, professional publications, and newspapers or posting job notices on Alliance and other list serves or on California State University websites. The second category (26%) was networking. Many participants used word-of-mouth, conferences, and professional meetings to notify others about open positions. The third category (6%) was utilizing the pool of current adjuncts and their own newly graduated doctoral students to fill positions. Two respondents described enhanced efforts to improve the interview experience as an important strategy in encouraging top candidates to accept job offers.

Item 26 asked participants to share their ideas for solutions to the current shortage of special education faculty. This item yielded 72 responses, which were organized into four categories. The largest category (38% of total responses) included the need for increasing the number of doctoral programs in California. Many respondents felt that universities in the CSU system should be allowed to independently train doctoral students, without establishing joint programs with IHEs in the UC system. Several participants also recommended developing alternative models for doctoral training, increasing grant funding to support doctoral programs, and providing support for adjuncts to pursue doctoral degrees.

The second largest category (30%) focused on increased support for new professors. Respondents suggested increasing salaries and benefits, making salaries

more competitive to reflect the high cost of living in certain regions of the state, and offering higher salaries to doctoral graduates with prior school district service by including those years of experience. Other responses included decreasing the workload for new professors, offering forgivable loans for new faculty, supporting opportunities for research at the CSUs, and increasing teamwork and collaborative environments. The third category (10%) emphasized increased support for doctoral students. Some respondents suggested providing doctoral students with increased mentoring, paid internships at IHEs, financial support for housing, tuition and books, and increased scholarship programs.

The final category (22%) included a variety of recommendations, such as recruiting more adjuncts to teach credential courses, encouraging credential candidates to enter doctoral programs, hiring professors from general education disciplines, as well as special education, and reducing the number of adjuncts by only hiring full-time faculty.

Discussion

The results present a very clear picture for California and for other states that are experiencing shortages in the special education professoriate. First, the majority of special education credential candidates were prepared by part-time faculty. Only 26% of the state's special education teacher educators were full-time tenure-track professors (n=182) or full-time term (non-tenure-track) appointments (n=64). Second, more than half of all tenure-track faculty were approaching retirement. Statewide, 53% of tenure-track special education faculty were 50 years of age or older, and nearly one in five planned to retire by 2007. Third, although California is the most ethnically diverse state in the nation, tenure-track faculty members were predominantly white (78%), female (73%), and non-disabled (90%). Among all special education, tenure-track faculty in California, a state with a K-12 enrollment that is 63% minority or bilingual, there were only 7 African-American, 9 Latino, and 18 Asian/Pacific Islander tenure-track special, education professors.

Fourth, while special education department chairpersons projected a need for an additional 100 full-time faculty over the next five years, there were only 65 doctoral students in the pipeline. In a study of recent California doctoral graduates in special education (Smith et al., 2001), only one-third pursued careers in higher education upon graduation. This suggests that the number of potential faculty may only be 21 doctoral candidates, a figure well below projected needs. Further, many doctoral candidates in the pipeline were already teaching at the university level holding non-tenure-track appointments. The high cost of living in California and low entry salary for tenure-track professors, combined with the low mobility rate of doctoral graduates (Pion et al., 2003), suggest that the likelihood of out-of-state recruitment will remain low. Finally, nearly half of the teacher training universities in California were unable to fill one or more vacant special education tenure-track

positions with qualified candidates. Within the last three years, 25% of IHEs had one failed job search; an additional 20% had two or more failed job searches.

One in eight children in the United States goes to school in California. By 2010, California's population will increase by 31% compared to a national rate of 18% (U.S. Census Bureau, 2000). In the last decade, the number of K-12 special education students in California rose 41% with no abatement in sight. If the K-12 special-needs population continues to increase at this nearly 6% annual rate, the state will need approximately 2,300 new special education teachers every year. On average, a professor trains 25 credential candidates per year who, upon graduation, serve approximately 400 students with disabilities (Hardman & West, 2003). This translates to a need in California for 94 new, full-time special education professors each year.

Given current conditions, should the 8,929 uncertified special education teachers serving children ages 3 through 21 in California (California DOE, 2002) choose to pursue professional certification, they will most likely be trained by part-time lecturers and adjuncts. Half the universities in California reported an increased reliance on part-time instructors. Traditionally, part-time faculty do not hold doctoral degrees, nor do they regularly participate in the time-consuming day-to-day activities in which full-time tenure-track faculty engage, such as curriculum development, research, recruitment, advisement, thesis development, and field supervision (Pion et al., 2003). Part-time faculty are often unaware of the scope and content of courses they do not teach in the credential program, which textbooks are being used, or how courses are sequenced. Further, although adjuncts are likely to be skilled practitioners, they may be less familiar with evidence-based best practices.

Given the large number of projected faculty openings over the next decade, the small number of doctoral programs, and the imminent retirement of many tenure-track employees, how will California, and other regions with special education faculty shortages, meet the need for more doctorally prepared professors? In a national study of the special education faculty shortage (Smith et al., 2001), the strategies recommended to remedy the supply-and-demand imbalance included increasing the capacity of doctoral programs to serve more students, targeting recruitment of potential doctoral candidates specifically for academic career paths, increasing federal support for leadership training, mentoring of doctoral students already in the pipeline, and improving working conditions at IHEs to make careers in higher education more attractive. While improved working conditions for new faculty are desirable, this requires recognition of the seriousness of the problem as well as institutional support that may be beyond the ability of individual special education departments to bring about.

Although many of these recommendations were echoed by the respondents in this study, capacity building may not occur without increased federal or state support. In the past decade, no doctoral program in California has received a U.S. Department of Education, Office of Special Education Program (OSEP) federal grant in the Leadership Competition. In a study of factors influencing the career choices

of special education doctoral graduates, the majority of those who assumed faculty positions received some form of institutional support to subsidize their studies compared with doctoral graduates in other types of jobs (Pion et al., 2003). Department chairs of 22 programs, mostly CSUs, reported plans to initiate doctoral training within the next decade; but because the CSUs in California are unable to offer doctoral training without establishing a partnership with either a UC or an independent university, this many not be feasible or realistic. Although some state funding was available in 2002-03 to support the development of joint doctoral program partnerships between UCs and CSUs (private IHEs were not eligible to participate in this program), the focus was on preparing K-12 leadership personnel, rather than higher educators. Further, because the majority of credential candidates enroll at the CSUs, full-time faculty at these institutions are already overwhelmed with personnel preparation responsibilities not shared by part-time adjuncts (Hardman & West, 2003). Whether these CSUs will be able to initiate new doctoral programs, including program planning, curriculum development, and course staffing, while concurrently preparing credential candidates is another issue. Finally, given the current budget crisis in California, many of the state's universities face cutbacks which may preclude the development of new programs and the hiring of additional faculty to staff them.

Several respondents proposed alternative programs which would allow candidates to work full-time while pursuing their doctoral training on a part-time basis. This would also enable adjuncts to teach at IHEs and, upon graduation, move into tenure-track positions. Alternative programs would make it possible for younger and less experienced doctoral candidates to teach at the K-12 level, accruing experience, while at the same time furthering their education. The University of San Francisco (USF) adopted an alternative model of doctoral preparation in 1997 (Evans et al., 2003). Of the 65 special education doctoral candidates who were in the pipeline statewide, 17 (26%) were enrolled in the USF program. Among the 10 USF doctoral graduates thus far, 9 have taken full-time positions in higher education in California (one is teaching part-time at a university in another state). Further, more than 50% of graduates and current candidates in the USF program were members of underrepresented groups.

The USF program has been funded by two OSEP federal grants in the Minority Competition. The first grant funded students at the master's level with leadership potential, particularly those from diverse groups. Ten funded master's students entered, and in some cases, already completed doctoral programs, both at USF and at other IHEs. In the current study, 3 of the 7 IHEs which offered doctoral degrees reported that their own master's graduates had entered the doctoral program.

The second grant focused on preparing doctoral candidates specifically for careers in higher education. In order to enable candidates to accrue K-12 classroom teaching experience and earn a salary in one of the most expensive regions of the country, all doctoral courses were held in the evenings, on weekends, and in the

summer (Evans, et. al., 2003). In a national study (Smith et al., 2001), the most important variable in pursuing a doctorate in special education was the provision of financial support, yet federal leadership funding has decreased more than 50% over the past decade (Hardman & West, 2003). Several interviewees indicated that increased grant support at the federal level might encourage more candidates to consider doctoral training. Likewise, models which enable candidates to continue working while they pursue their degree part-time may encourage more potential candidates to consider doctoral training.

Many suggestions were proposed to increase the likelihood of matriculation of doctoral candidates into professorships after graduation, including higher salaries and increased benefits. Many prospective doctoral candidates, particularly those who are mid-career K-12 teachers, would have to accept a pay cut in order to work in higher education. How many potential candidates will pursue a doctoral education knowing that they will earn less upon graduation? The issue of faculty salary is particularly significant in California. The San Francisco Bay Area has the highest housing costs in the nation, closely followed by the Los Angeles and San Diego areas. One recommendation was to include prior school district experience when calculating entry salary level for new faculty. Another suggestion was to offer forgivable loans to doctoral graduates who enter higher education, as is the case in many states for K-12 teachers who work in hard-to-staff central-city schools or in shortage areas such as special education.

Clearly something must be done to attract more special educators into doctoral programs, and ultimately into professorships, and retain them once they are there. In California, with over 30,000 special education teachers in the system, more could be done to attract qualified candidates for careers in higher education. One suggestion, voiced by many respondents, was to recruit credential candidates into professional organizations to increase their exposure to, and connection with, higher education colleagues. Credential and master's candidates with promise should be mentored by tenure-track faculty, offered opportunities to serve on research projects, write grants, and work as teaching assistants, and encouraged to consider careers in higher education. Although there is a limited literature describing alternative models of doctoral preparation (Evans et al., 2003), more alternative training models could be developed to allow doctoral candidates to work while pursuing their education, with financial support for housing, tuition, and books. Encouraging minority and bilingual candidates, as well as persons with disabilities, to enter doctoral programs should be a priority, especially in states with high diversity.

The number of special education doctoral programs in California and across the nation should be increased, and enrollments within existing programs should be expanded. The instrument developed for this investigation (Figure 1) could be used by other states to replicate this study for the field of special education. What remains at issue is the question of quality. Can institutions grow and still meet quality standards? Can institutions without a history of doctoral preparation train

students independently? For example, in California, can CSUs develop high-quality doctoral programs without the support of UCs? Can alternative programs offer nontraditional preparation without the loss of rigor? These are questions for future research, but these issues should not deter universities from actively and creatively pursuing solutions to the special education faculty shortage.

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