

RUNNING HEAD: Special Education Faculty Needs Assessment Project

Supply and Demand in Special Education: Findings from the Special Education Faculty  
Needs Assessment Project

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### **Abstract**

The present study sought to explore how the supply-demand situation has changed since the publication of *The Faculty Shortage Study* in 2001. To answer this question, special education doctoral programs, special education teacher training programs, current special education graduate students, and recent special education doctoral graduates were surveyed. Results suggest that federal and stakeholder actions contributed greatly to progress made in addressing the special education faculty shortage. In particular, all of the supply indicators have improved in important ways since the previous study. While progress has been made on the supply side, important issues, particularly on the demand side, continue to warrant the attention of policy makers, federal officials, and college faculty members. Faculty retirements, the expanding roles of special education faculty, and the underrepresentation of diverse faculty in special education threaten to undermine the progress on the supply side that has been made over the last 10 years. Implications of these findings and recommendations for action are included in the paper.

## Introduction

Today, in general, the outcomes and accomplishments of young adults with disabilities far surpass those of previous generations. Many factors have contributed to these quality of life improvements. Clearly the passage of the *Individuals with Disabilities Act* (IDEA) in 1975 initiated many changes regarding students with disabilities' access to education. Over a million students with disabilities were denied an education in the public schools before this landmark legislation established basic guarantees. IDEA set the course for improved attitudes, high expectations, inclusive educational practices, a better-prepared education workforce, and research-based instructional practices. Today's general and special education teachers are armed with knowledge about effective practices for students with special needs. Yet, more personnel preparation, as well as research and development are needed to ensure the next generations of educators are even better prepared to meet disability-related challenges in their classrooms.

Today's successes of students educated under IDEA are impressive, but they only hint at future possibilities. Here is a glimpse of how their outcomes are superior to those of previous generations (U.S. Department of Education, Office of Special Education Programs [OSEP], 2010; U.S. Department of Education, 2011):

- More and more infants and toddlers receive the early education they need to prevent or reduce the life-long impact of disabilities. The result of such high quality early intervention services is that 16% fewer children require continued special education services during their school years.

- Some 95% of all students with disabilities attend *their* neighborhood schools, and some 58% accessed the general education curriculum more than 80% of the school day (All disabilities, U.S. and Outlining Areas, Table AR2-2-3).
- Over the past 10 years, students and teachers have closed the reading achievement gap by approximately 15 points as evidenced by increased levels of proficiency.
- Sixteen percent more students with disabilities are graduating with a standard general education diploma and 21% fewer are dropping out of school.
- In 1987, only 15% of students with disabilities attended post-secondary schools, and that statistic rose to 32% in 2005.
- Finally, about 15% more youths with disabilities have paid employment since leaving high school, though there is considerable room for improvement in this area.

Two major factors contributed to these remarkable achievements:

1. An increased knowledge base about effective instructional practices.
2. A well-prepared workforce of general and special education teachers, related services personnel, and educational leaders (e.g., principals).

Doctoral-granting universities play a unique and irreplaceable role in the successes listed above. Their faculty comprise both the researchers who produce new knowledge on effective practices and those who train the teacher educators who, in turn, prepare the next generation of skilled teachers. Surprisingly, the universities that produce the supply

of special education researchers and teacher educators comprise only 8% of those universities with special education personnel preparation programs. Yet, their faculty and doctoral graduates conduct the critical work on which the very success of our nation's special education services depends.

### **Key Findings from the 2001 Faculty Shortage Study**

In 1999, special education university faculty members joined policy makers, researchers, and other stakeholders to study issues related to the supply and demand of special education faculty members. This team was concerned about the field's capacity to prepare the next generation of special education service providers and wanted to ascertain whether a shortage of special education faculty existed. If that shortage did exist, it was also important to determine: a) how that contributed to the well-acknowledged and documented special education teacher shortage, and b) what actions could be taken to solve a continuing shortage.

In 2001, *The Faculty Shortage Study* concluded with these key findings identified (Smith, Pion, Tyler, Sindelar, & Rosenberg, 2001):

- A shortage of special education faculty existed:
  - The number of special education doctorates produced annually decreased by 30% in the 20 years between 1981 and 2001.
  - About half of those who receive special education doctoral degrees chose to work in higher education; the remainder selected leadership positions in the federal government, the states, or local school districts.
  - Over 1/3 of all faculty positions nationwide remained unfilled.

- If *every* new special education doctoral graduate at that time had assumed an open faculty position, then a supply (i.e., new graduates) and demand (i.e., advertised positions) equilibrium would have been achieved.
- Some characteristics of new doctoral graduates inhibited selection of special education faculty positions for eventual career choices:
  - A lack of mobility when selecting a doctoral program for study was related to later career choices.
  - A lack of mobility when graduating affected the individual's ability to accept a faculty position wherever an opening existed.
  - Increasing age and experience of those recruited and those graduating affected career choices because of salary, family, and mobility.
- A shortage of special education faculty was directly associated with a shortage of special education teachers and service providers:
  - Conservatively, for every unfilled institution of higher education (IHE) faculty position, an average of 25 fewer special education teachers are produced each year.
  - The subsequent 25 vacant teaching positions cause 400 students with disabilities (at a 16:1 student/teacher ratio) to be underserved, as their service providers are less than fully qualified teachers.

Although the impact of *The Faculty Shortage Study* is not fully known, it is important to recognize that the work influenced federal policy considerably. For

example, the study was cited in many Congressional documents that discuss the shortage of special education teachers and faculty (see Appendix A for a summary prepared by Washington Partners). It was referenced in legislation (e.g., FY2002 Labor-HHS-Education Appropriations (PL 107-116), FY2003 Labor-HHS-Education Appropriations (PL 108-7), FY2004 Labor-HHS-Education Appropriations (PL 108-199), FY2005 Labor-HHS-Education Appropriations (PL 108-447), College Access and Opportunity Act of 2005 (H.R. 609), Individuals with Disabilities Education Act (PL 108-446), and also in many House and Senate Committee Reports. In these various documents, the connection between the shortage of college and university special education faculty members and the shortage of direct service personnel (e.g., special education teachers) now appears to be well established and acknowledged. Before *The Faculty Shortage Study*, links between the supply of new doctoral graduates, faculty working in teacher education programs, and new teachers available to work with students with disabilities were not apparent.

Although we do not have specific documentation about how frequently *The Faculty Shortage Study* has been cited, it is estimated that for many years 99% of applications submitted to the annual OSEP Leadership Preparation Competition have made reference to the work (Gilmore 2007, personal e-mail communication). Consensus also exists that *The Faculty Shortage Study* resulted in increased appropriations and allocations for the funding of more leadership grants to support doctoral training projects (Gilmore 2007, personal e-mail communication). *The Study* did result in a special issue of the journal *Teacher Education and Special Education* (Hardman & West, 2003; Kleinhammer-Trammill, 2001; Pion, Smith, & Tyler, 2003; Sindelar & Rosenberg,

2003; Smith, Pion, Tyler, & Gilmore, 2003; Tyler, Smith, & Pion, 2003), and one of those articles was recognized in 2003 as the Teacher Education Division (TED) of the Council for Exceptional Children research article of the year. The information was also the focus of two book chapters (Smith, Pion, & Tyler, 2004; Brownell, Rosenberg, Sindelar, & Smith, 2004), and many of the findings are incorporated into the OSEP Blue Ribbon Task Force Report (2004), which currently serves as a blueprint of quality indicators for special education doctoral programs nationally.

### **Rationale for Current Study**

It has been over 10 years since the data and information collection for the *The Faculty Shortage Study* began. Since that time, a sea change of events has radically altered services delivered to students with disabilities. Similarly, the training received by the educators who provide services to students with disabilities has also evolved. Finally, our knowledge base has expanded, giving professionals a better understanding of these key issues:

1. Every student is entitled to the services of a trained teacher who is highly effective.
2. Educational practices and interventions yield differential results.
3. Teachers must be knowledgeable about the growing array of evidence-based strategies and practices that improve the social and academic skills of students with disabilities.
4. The alignment of the *No Child Left Behind Act* (NCLB) and IDEA '04 requires that all teachers be highly qualified and well prepared.

This knowledge and context set the stage for a new, challenging, and exciting era; but the opportunity to truly improve results for students with disabilities will be lost if the personnel who provide services to these students and their families are insufficiently prepared.

**Trained teachers who use scientifically validated and best practices make a difference.** Only a few years ago, the power and advantages of having a fully prepared teaching workforce were not clear. Politicians and much of the public claimed that those teaching in the nation's elementary and secondary schools did not need specialized training, and that knowledge of evidence-based interventions or pedagogy was unrelated to improving results for students. Today, we now have a different understanding. Trained teachers provide at least two important benefits: 1) They improve results of students, and 2) they are more likely to remain in the profession.

Linda Darling-Hammond and her colleagues report that certified teachers consistently produce significantly stronger student achievement gains than do uncertified teachers (Darling-Hammond, et al., 2005; 2006). The knowledge base supporting Darling-Hammond's findings is growing. Laczko-Kerr and Berliner (2003) found that students of uncertified teachers make about 20% less academic growth per year than do students of certified teachers, supporting the researchers' conclusion that allowing uncertified teachers to work with our "most difficult-to-teach-children" is harmful. In an assessment of teacher quality among California State University system graduates, Ken Futernick found that trained teachers produce better student achievement gains than those who are untrained (Futernick, 2007). He also determined that trained new teachers have

a significantly higher likelihood of remaining in the classroom than those who have not completed teacher education programs before assuming classroom duties.

**Teacher preparation programs are obligated to produce highly qualified special education teachers.** The term “highly qualified teacher” (HQT), as defined in Title IX, Section 9101(23) of the *Elementary and Secondary Education Act*, (also known as *No Child Left Behind* or NCLB), is complex, controversial, possibly misunderstood, and certainly difficult to achieve. When the *Individuals with Disabilities Education Improvement Act of 2004* (IDEA) was signed into law on Dec. 3, 2004 by President George W. Bush, the special education law was aligned with many components of NCLB. Both laws now require teachers to be highly qualified and to demonstrate competency in both subject matter and effective pedagogy. These laws also require practicing teachers to implement evidence-based practices, which involve knowledge of current research in addition to the skillful implementation of effective interventions with fidelity. Consequently, teacher preparation programs face increased scrutiny as to the quality of their graduates, who must meet the above-mentioned expectations.

College and university faculty members are the primary source of research involving effective interventions for students with disabilities. Higher education faculty members are also the primary preparers of future teachers. Because the field of special education—most importantly, the outcomes of students with disabilities—is so heavily dependent on IHE faculty, some critical questions must be better understood:

- How has the supply-demand situation changed since the publication of *The Faculty Shortage Study*? More specifically, has the shortage of college and university special education faculty been reduced? Have the

number and size of doctoral programs remained stable? Have the recruitment strategies changed to seek more doctoral students who aspire to college faculty positions? Do more doctoral programs have specific preparation tracks to develop future faculty? Have the number of graduates seeking careers in higher education increased?

- What is the current mix of full and part-time faculty and is it producing sufficient numbers of highly qualified special education teachers who are able to improve the results of students with disabilities?
- Does the nation have the capacity to prepare sufficient numbers of highly qualified special education teachers?
- Do the nation's doctoral programs have the capacity to prepare more highly qualified faculty to work in expanded roles at teacher education programs? Or, must alternative strategies be developed not only to staff the nation's teacher education programs, but also to ensure that new teachers are prepared to meet these increasing requirements and demands?

### **Overview of the Current Study**

In order to answer the questions listed above, the team of scholars from *The Faculty Shortage Study* collaborated with new partners to conduct a needs assessment to assist policy makers, education professionals, parents, and the public in developing appropriate actions to ensure improved results for children and youth with disabilities.

Four tasks were conceptualized originally for this needs assessment:

1. *Doctoral programs*: assess the status and capacity of special education doctoral programs.

2. *Current doctoral students (Pipeline)*: assess the demographics, career goals, and characteristics of current special education doctoral students who are in the pipeline.
3. *Recent graduates*: determine career paths, demographics, and other characteristics of two cohorts of special education doctoral graduates: five years of graduates who participated in *The 2001 Special Education Faculty Shortage Study* and five years of recent graduates.
4. *Teacher education programs*: determine basic characteristics of university-based special education teacher education programs (e.g., staffing patterns, projected retirements) and to determine the demand for new faculty.

Two additional tasks were added to the study at the request of the Office of Special Education programs:

5. *OSEP-funded projects*: determine the graduation rates of OSEP-funded doctoral students working on four-year projects initially funded in fiscal years 2000 and 2001.
6. *Doctoral student funding*: conduct a comparison of funding levels for doctoral students across federal agencies.

## **Method**

### **Participants**

**Task 1: Doctoral programs.** The study team identified a potential pool of 112 special education doctoral training programs. Follow-up phone calls to verify the university sampling frame decreased the sample population to 102 special education

doctoral training programs. Programs were excluded for being too blended<sup>1</sup>, recently closed, or reporting no special education doctoral program.

**Task 2: Current doctoral students.** Doctoral program coordinators (n=102) assisted the study team by forwarding the online survey link to current doctoral students in their special education programs and reporting the number of students enrolled in the program at the time the survey was distributed. Based upon information provided by the program coordinators, a total of 1,779 students were enrolled in special education doctoral programs during the spring of 2009.

**Task 3: Recent graduates.** Doctoral program coordinators were asked to provide contact information for students who had graduated from their program between 1997 and 2007 (n=102). Sixty-six programs complied with this request. Based upon this information, it was estimated that a total of 1,737 doctoral degrees had been awarded between 1997 and 2007. Validation of this data by the study team decreased the estimated number of doctoral degrees awarded during this time to 870.

**Task 4: Teacher education programs.** It was estimated by The Personnel Center at the National Association for State Directors of Special Education that 1,100 university-based teacher preparation programs were in operation across the United States during the fall of 2009 (Phoebe Gillespie 2009, personal e-mail communication). It was not feasible for the study team to survey every special education teacher-training program. Therefore, a two-phased, non-probability, purposeful sampling approach was employed for this task. First, a random sample of states representing the six U.S. regions of the national

Technical Assistance & Dissemination Network was conducted in February 2008. States

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<sup>1</sup> Blended programs reported not being able to fill out our survey because they were too intertwined with the general education program or some other program not focused on special education with the College of Education at their school.

chosen for inclusion were Alaska, Arkansas, California, Georgia, Illinois, Kansas, Maine, Massachusetts, Michigan, North Dakota, South Carolina, and West Virginia. Second, a list of university-based special education teacher training programs located in these states was developed. For states with a large number of programs, 30% of university-based special education teacher-training programs were randomly selected for study inclusion. In states with only a small number of programs, all university-based special education teacher-training programs were selected for study inclusion to ensure adequate representation. Seventy-three teacher education programs were included in our final sampling list.

### **Procedures**

**Task 1: Doctoral programs.** During the fall of 2008, an online Remark™ survey was sent to 101 special education doctoral program coordinators to gather information of interest. Questions included in this survey were based on the *2001 Faculty Shortage Study* questionnaire and also included additional questions generated by the present study team and the OSEP (see <http://www.cgu.edu/pages/5609.asp> for a copy of the survey). Each coordinator was given a financial incentive to assist with the gathering of information needed to conduct this task, as well as Tasks 2 and 3 (e.g., reporting the number of recent graduates and current doctoral students, providing access to recent graduates via email).

**Task 2: Current doctoral students.** An online Remark™ survey was sent to 1,779 special education doctoral students enrolled in graduate school in the spring of 2009. Once again, questions included in the survey were based on the *2001 Faculty*

*Shortage Study* questionnaire and included additional questions generated by the study team and the OSEP (see <http://www.cgu.edu/pages/5609.asp> for a copy of the survey).

**Task 3: Recent graduates.** Based upon the list provided by program coordinators, an online Remark™ survey was sent to 870 individuals who received their doctorate in special education between July 1999 and June 2009. As with the other tasks, questions included in the survey were based on the *2001 Faculty Shortage Study* questionnaire, as well as questions generated by the study team and OSEP (see <http://www.cgu.edu/pages/5609.asp> for a copy of the survey). Data collection occurred during Spring 2009.

**Task 4: Teacher education programs.** An online Remark™ survey was sent to special education teacher-training program coordinators included in the final sampling frame during the spring 2010. Questions included in the survey were adapted from the Task 1 doctoral program survey, as well as emerging questions of interest from the study team and the Office of Special Education Programs (see <http://www.cgu.edu/pages/5609.asp> for a copy of the survey). Each coordinator was given a financial incentive to assist with the gathering of information needed to conduct this survey.

## Results

### Characteristics of Doctoral Programs

Ninety-three percent of doctoral program coordinators completed a survey for Task 1. Within the last 10 years, significant shifts in the landscape of doctoral programs in special education have occurred. Four of the programs included in the *2001 Faculty Shortage Study* have closed, one previously closed program has reopened, three programs

expanded from offering a special education emphasis to a doctorate in special education, and 11 new doctoral programs opened. About half (n=5) of the new programs are online, for-profit graduate programs. These changes have results in a net increase of 15 special education doctoral programs.

A majority of the doctoral programs are public (80.9%) and operate on a semester system (91.1%). Fifty percent or more of the programs offer concentrations in general special education (mild/moderate and/or cross-categorical disabilities), learning disabilities, emotional or behavioral disabilities, and early childhood or early intervention. Less than 10 percent offer speech and language impairments, physical orthopedic impairments, special education for youth in correctional facilities, deaf/blindness, other health impairment, or traumatic brain injury concentrations. No doctoral programs offer a concentration in adapted physical education.

Many of these programs provide financial support for their graduate students. Most often, this financial support comes in the form of tuition waivers. About a quarter offer research or tuition assistantships. A little over half offer traineeships funded via training grants (e.g., support from a training grant from the U.S. Department of Education).

Almost all of the programs have tenured faculty positions and faculty in the doctoral programs are more likely to be in a tenured or tenure-track position. The doctoral programs have an average of six faculty members in tenured positions and an additional two in tenure-line positions. Only a small number are in research faculty positions. Regardless of the type of position faculty occupy, a majority report allocating all of their time to special education.

Diversity of special education faculty continues to be an issue of importance for the field. Most (73%) college and university faculty are White. Those from historically underrepresented groups are more likely to be African American/Black (6%). They are least likely to be Spanish/Hispanic/Latino (3%) or Bi/Multi-racial (less than 1%).

The size of programs and the number of graduates produced varies across programs. Almost a third of programs reported having more than 18 students currently enrolled and producing more than 3 graduates per year. An additional 29% have at least 13 graduate students currently enrolled in their program and produce at least 2 graduates per year.

### **Characteristics of Current Doctoral Students**

The final sample included 71.3% of the 1,779 current doctoral students enrolled in 82 special education doctoral training programs. The typical student enrolled in these graduate programs is more likely to be female, married, White, have one child, and be a native born US citizen. Of those in the doctoral student pipeline, 7.1% report having a disability, which is approaching the percentage of first generation, first-time college students with a disability<sup>2</sup>. On average, students were 36.5 years old when they began their doctoral degree program.

Many (61.1%) of the current doctoral students in special education have aspirations of entering academia as a faculty member upon graduation. A small portion appears to be relocating to attend their doctoral program of choice (24%), but most are enrolling full-time (67%). In terms of where students are in the pipeline, the largest percentage (56%) is focused on completing required coursework. Almost 20% have had

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<sup>2</sup> According to the National Council on Disability, approximately 9% of first time, first generation college students have a disability (2003, September).

their dissertation proposal accepted and presumably are close to completing their degree. The remainder of students is somewhere in-between.

### **Characteristics of Recent Graduates**

Approximately 71.0% of the 870 graduates representing 66 doctoral training programs returned a completed survey. The profile of recent graduates is similar to the profile of current students in the pipeline. The average graduate from special education doctoral programs in the last 10 years is most likely female, married, White, has one child, and is a native born US citizen. Compared to current students in the pipeline, a slightly lower percentage of recent graduates has a disability (6.6%). On average, recent graduates were 35.8 years of age when they began their doctoral degree and took 5 years to complete the degree. Over 25 years ago, Pierce and Smith (1994) conducted the first study that monitored the age of new special education graduates. Between 1994 and 2001, the mean age of those receiving doctorates had steadily increased; however, since the release of *The Faculty Shortage Study* in 2001, the age of graduates appears to be on the decline (National Opinion Research Center [NORC], 2010).

Many of the recent graduates (61.1%) had aspirations to become faculty members upon entering their doctoral program and most accomplished this goal (55.6%). About a third (31.4%) of these graduates relocated to attend their doctoral program of choice and a larger proportion (39.9%) relocated to assume their current position. Fellowships, scholarships, or graduate assistantships were cited as the largest proportion of support for graduate school (27.5%). Fewer had research assistantships (13.9%), traineeships funded via training grants (13.9%), or teaching assistantships (9.5%) as their primary source of support.

There are slight differences between the profile of those in faculty positions and those in non-faculty positions (e.g., district administrators). Graduates who assume positions outside of high education are more likely to be older at the time of enrollment (37.5 years of age), male (53.4%), less willing to relocate for graduate school or to take a position (31.2% and 20.5%, respectively), take longer to graduate (5.6 years), have less funding (38.1%), and less linguistically and culturally diverse (45.0% minority). Those who assume university and college positions are more likely to be younger at the time of enrollment (34.7 years of age), female (53.4%), willing to relocate for graduate school or to take a position (68.8% and 79.5%, respectively), graduate quicker (4.5 years), have more funding (61.9%), enter graduate school with faculty aspirations (73.1%), and more linguistically and culturally diverse (55.0% minority).

### **Characteristics of Teacher Preparation Programs**

Seventy-eight percent of teacher education program coordinators (n=57) returned a completed survey. The characteristics of these programs are unlike those of the doctoral programs. About half are public and half are private (50.9% and 49.1% respectively). Most operate on a semester system. In terms of geographic location, the programs included in our sample are located in a variety of locales. About 40% are located in an urban or suburban area. About a quarter are located in a rural area<sup>3</sup>.

The range of concentrations offered at the teacher preparation programs is much more limited than those offered at doctoral training institutions. The largest concentration area is general special education (mild/moderate) with about 60% of teacher preparation programs offering this type of concentration. About 45% offer a

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<sup>3</sup> Recall that our sampling strategy over-sampled teacher preparation programs located in rural locations.

concentration in learning disabilities, combined studies in general and special education, general special education (cross-categorical), or intellectual disabilities (mild/moderate) concentrations. Less than 30% of all teacher preparation programs offered the other concentrations. Further, no teacher preparation programs offer a concentration in other health impairments, transition, or special education (non-disability specific).

On average, across all special education licensure programs and regardless of employment status (e.g., full-time, part-time, adjunct), these programs have 13.5 individuals teaching at their institution. However, when these numbers are categorized by type of position, those teaching in the special education teacher preparation program are more likely to be adjunct course instructors paid by the course (51.1%) followed by full-time tenured or tenure-line faculty (37.0%). Only a small percentage of full-time non-tenured or non-tenure line faculty (10.2%) or graduate student instructors (1.7%) teach in these programs.

While diversity of faculty is an issue at the doctoral granting institutions, the problem is more pronounced at those programs with only teacher preparation. Out of the 13.5 individuals teaching within these programs, on average, 91.0% are White. Of those teaching in these programs that are ethnic minorities, they are more likely to be African American/Black (4.0%) or Spanish/Hispanic/Latino (4.0%). They are least likely to be American Indian/Alaska Native (less than 1.0%) or Bi-/Multi-racial (less than 1.0%).

The size of programs as evidenced by the number of graduates produced varies across programs. On average, these programs produced 45.7 new teachers in the 2008 – 2009 academic year (SD = 65.0, Median = 23.5). This represents an increase in the number of teachers produced five years earlier. Furthermore, some of these programs

produce a substantial amount of new teachers. One school reported producing 400 new teachers in 2008 – 2009, which is up from the 233 new teachers they produced 5 years earlier.

### **Key Findings Across Tasks: Supply**

**Increased capacity of special education doctoral programs.** An examination of descriptive results indicate that the capacity of special education doctoral programs has increased. Compared to results from the *2001 Faculty Shortage Study*, there were 16% more doctoral programs in special education in 2009 compared to 1999 (97 programs compared to 82 programs, respectively). These programs also demonstrate the ability to enroll and graduate more students. In 2007, it is estimated that 296 special education doctoral degrees were awarded compared to 213 in 2002. This represents an increase of 28% in the number of graduates produced. When comparing the number of current doctoral students to the average number of graduates produced each year, trends also indicate an improvement. In 2009, 56 programs reported serving 7 or more doctoral students and producing at least 2 graduates a year compared to 45 programs in 1999 reporting the same statistics.

Compared to data from 2004, 28% more graduates were produced in 2009. Furthermore, the percentage of these graduates wanting to enter faculty positions has increased by 12% over the last 10 years. Consistent with this trend, 63% of graduates were able to secure faculty positions.

**Key predictors of an academic career path are established.** A logistic regression was computed to predict the probability of entering academia based on variables of interest (see Table 1). In the *2001 Faculty Shortage Study*, four predictors

were found to increase the odds of becoming a faculty member: planning to become faculty when entering graduate school, age when starting the program, time between enrollment and graduation, and willingness to relocate to accept a position. The same four predictors once again emerged as variables that increased the probability of entering academe. More specifically, those entering the doctoral program with faculty career intentions were nine times more likely to become faculty. For every one year increase in age when beginning the doctoral program, the odds of becoming a faculty member decrease by almost three times. A one-year increase in time to complete the doctoral degree results in the odds of becoming a faculty member decreasing by two times. Those who were willing to relocate were nine times more likely to take a faculty position upon completing their degree.

**Differences between those in academic and non-academic positions.** A statistical comparison of means was conducted to detect differences in graduates who entered faculty positions and those who entered non-faculty positions based on a number of variables (see Table 2). Differences between these two groups were detected for a number of variables. Results suggest that females and those who entered their graduate program with aspirations to become faculty are more likely to enter academia. There was also a significant difference between the career paths for those willing to relocate for graduate school and/or to secure employment. Those willing to relocate were more likely to enter academe. Differences were also detected for financial support, specifically teaching assistantships, research assistantships, traineeships, and/or fellowships. Those receiving this assistance as their primary source of support were more likely to pursue academic careers. This ties directly to the key predictors listed earlier; those who

received these forms of financial assistance were able to attend school full-time, and thus, finished their program faster, resulting in a lower time-to-completion ratio than their non-faculty counterparts. There was also a difference in faculty versus non-faculty in terms of age when enrolling in the doctoral program. Those who went on to become faculty were more likely to be younger than those who went on to become non-faculty. Finally, a difference between faculty and non-faculty in terms of elapsed time between degrees was also detected. Regardless of time between different degrees (e.g., elapsed time between BA and PhD/Ed, elapsed time between enrolling the doctoral program and receipt of degree, etc.), those who went on to become faculty members were more likely to complete the degree more quickly than those who went on to become non-faculty.

#### **Key Findings Across Tasks: Demand**

**Graduates seeking positions are able to locate them.** Compared to the *2001 Faculty Shortage Study*, the number of graduates who assume faculty positions has increased by 13% over the last 10 years. When looking at data from both the earlier study and the current study, 90% of special education graduates who work as faculty remain full-time. Many of the remaining 10% have retired but continue to work on a part-time basis.

**Job market remains robust.** Despite difficult economic times, special education personnel preparation programs are not closing as evidenced by an increase in the number of these programs. As a result, faculty searches remain vigorous. In 2009, the number of advertised faculty positions in special education *decreased* by 54% (n=150). One year later, the job market rebounded and the number of searches *increased* by 55% (n=56). Regardless of the job market trends, programs report that about 75% of faculty

searches are successfully concluded within one year. Of those unsuccessful job searches, most programs report continuing the search rather than terminating the search. It is no surprise; therefore, that 73% of graduates who planned to become faculty upon entering graduate school have gone on to do so. Further, 31% of those who did not plan to become faculty upon entering graduate school have modified their career paths and entered academia.

**Expanding roles for special education teacher preparation programs.** Data suggests that a strong trend is emerging toward more blended special and general education teacher preparation programs. Program directors are projecting that more combined or blended program will be offered at their universities in the next five years. They also believe that early childhood and early intervention programs will be added to their departments by the year 2015.

**Critical demand issue of diversity and faculty retirements.** Two critical issues are emerging for special education: diversity and faculty retirements. A lack of diversity among special education faculty is well documented. Results from the current study suggest that progress has been made in some areas, but not in others. Compared to the general U.S. population and other fields, the percentage of culturally and linguistically diverse faculty in special education is extremely low. Compared to the 2001 study, the percentage of African Americans/Blacks choosing to pursue a special education degree has remained low, but stable. Hispanics are a growing population, yet the percentage of them who are interested in the field of special education has declined. Over a 10-year period, however, the percentage of students and graduates with disabilities has increased. However, this trend appears to be flattening.

Data from the current study also suggest that faculty retirements will become an issue shortly (see Figure 1). Across the next six years, programs offering doctorates in special education predict they will lose more than 50% of their faculty due to retirements alone. Assuming the new supply of special education graduates continues to increase at the rate it has been since 1999, it still will not be enough to meet the predicted demand. The supply-demand imbalance will be further exacerbated.

### **Key Findings Across Tasks: The Unique Position of Doctoral Programs**

Universities with both special education teacher preparation and doctoral training programs have emerged as unique sub-populations within our study. All special education doctoral training programs also have a special education teacher preparation program, but these schools only represent about 8% of the entire population of teacher preparation programs. The characteristics of these doctoral granting programs also make them unique. Those universities with both a doctoral and teacher preparation program have almost twice as many faculty members as those with only teacher preparation programs. They offer more specialty areas (e.g., transition, emotional or behavioral disorders, early intervention, assistive technology), and they also offer almost all of the low incidence disability programs (e.g., autism, low vision and blindness, hard of hearing and deafness). They also hold three and a half times more grants and contracts, and produce the majority of the nation's research. Of the most recent job search period (2010-2011), 33% of faculty searches came from these institutions.

### **Discussion and Implications**

One of the key overarching questions guiding this study was: How has the supply-demand situation changed since the publication of *The Faculty Shortage Study* in

2001? Our results suggest that federal and stakeholder actions contributed greatly to progress made in addressing the special education faculty shortage. In particular, all of the supply indicators have improved in important ways since the previous study:

- A 16% increase in the number of special education doctoral programs
- A steady 12% increase in the overall number of students enrolled
- A 12% increase in the number of students with initial career interests in becoming college or university faculty
- A 6% steady increase in the overall number of graduates
- A 13% increase in the number of graduates who eventually accept a faculty position have both increased

The current study coincided with an economic downturn. During such times, it is not unusual for demand for new faculty to wane. However, unlike other fields (e.g., arts and humanities), demand for special education graduates remains robust. Special education preparation programs are not closing. Although the job market experienced a dip in demand in 2009 (54% fewer positions advertised), by 2010 the market showed significant signs of improving (55% more positions advertised). Even with that decrease in special education faculty searches in 2009, a gap between the number of graduates produced (supply) and the number of advertised faculty positions (demand) was still not met. In other words, there were not enough graduates to fill these positions. It is no surprise, therefore, that most of the faculty searches were successfully filled in one year. Of those ending without a candidate accepting the position, almost all continued the next year. This finding is unlike that of *The Faculty Shortage Study*, where some 10 years ago

20% of the unsuccessful searches resulted in the termination of the search and the closing of the unfilled position.

While progress has been made on the supply side, important issues, particularly on the demand side, continue to warrant the attention of policy makers, federal officials, and college faculty members. While normal attrition due to promotion and job-changes is expected in the years to come, retirements will surpass previous years. Retirements alone threaten to undermine much of the progress on the supply side that has been made over the last 10 years. Most alarming is that these retirements will not be evenly dispersed across programs; rather, programs that offer doctoral degrees will experience a disproportionate share of these vacancies. While the 100 or so doctoral programs in the nation represent only 8% of all special education personnel preparation programs, somewhere between one-half and two-thirds of their faculty will retire in the next five years. It is these programs that produce the primary supply of special education faculty for over 1,100 special education teacher preparation programs. Graduates of these programs then flow into the nation's schools as the next generation of teachers.

Actions must be developed to avoid an impending crisis. Strategies to increase the supply of new doctorates and approaches that may become stopgap measures must be developed. The consequences of this magnitude of a supply/demand imbalance are significant for they will impact not only doctoral programs, but also teacher education programs resulting a greater shortage of highly qualified teachers who can work effectively implement research to practice in inclusive educational settings.

Another issue of importance that will affect demand is the expanding roles of special education faculty. Our data suggest that special education faculty members are

being asked to prepare special *and* general education teachers to implement specific evidence-based practices such as response to intervention, universal design for learning, school-wide behavior management, and multi-tiered instruction. Within the next five years, the vast majority of the teacher preparation programs we surveyed will offer a blended general and special education program. Such blended preparation programs are also probably in response to inclusive education practices where over 95% of all students with disabilities are attending *their* neighborhood schools and almost 60% of them learn in general education classrooms more than 80% of the school day (U.S. Department of Education, 2011). In addition, many of these teacher preparation programs also have plans to initiate early childhood or early intervention concentrations. We believe that these program expansions are the result of research that suggests that early intervention services significantly prevents or improves the long-term impact of disabilities (Bruder, 2010; Hebbeler, et al., 2007; U.S. Department of Education, Office of Special Education Programs, 2010).

The final issue that deserves special attention is the underrepresentation of diverse faculty in special education. As the data show, the proportion of culturally and linguistically diverse faculty members is low in both doctoral and teacher preparation programs. In the doctoral programs, only 6% of faculty members are African American/Black and only 3% are Hispanic/Spanish/Latino. At teacher preparation programs, only 4% of faculty are African American/Black and only 4% are Hispanic/Spanish/Latino. According to the U.S. Census Bureau, in 2009, it was estimated that 12.9% of the population was African American/Black and 15.8% were Hispanic/Spanish/Latino (<http://quickfacts.census.gov/qfd/states/00000.html>). These

percentages are significantly higher than those observed among special education faculty. Research has shown that factors such as poverty, poor academic preparation, and testing requirements may contribute to the high numbers of culturally and linguistically diverse students in special education and the low numbers of diverse doctoral graduates (Tyler, Yzquierdo, Lopez-Rena, & Flippin, 2002). Furthermore, even when students from culturally and linguistically diverse backgrounds overcome these barriers, they are less likely to pursue a degree in education (Tyler, Yzquierdo, Lopez-Rena, & Flippin, 2002). Our data do indicate that more individuals with disabilities are entering and completing doctoral studies than was observed in *The Faculty Shortage Study*; however, considerable room for progress exists. Overall diversity of the special education professoriate should be a topic of considerable discussion among policy makers and stakeholders so strategies can be developed to diversify the special education workforce.

### **Call to Action: Recommendations for the Future**

The federal role in the preparation of special education leadership personnel is critical and must continue. Without continued support, the field of special education is in jeopardy. Recommendations for addressing future issues include:

- Continued support for the leadership preparation agenda: Student support (e.g., tuition, stipends) reduces time-to-graduation, and is a key marker of those who become university faculty members; therefore, in order to address the imbalance, federal support of doctoral students through the Office of Special Education Programs must increase.
- Support the development of blended teacher preparation programs: We support the expanded role for special education faculty to better address

the need for highly effective general and special educators who can improve results for all struggling learners, including those with disabilities,. However, it is important to note that we do so at the risk of exacerbating the pending supply and demand imbalance.

- Create opportunities for addressing the diversity issue: The field cannot continue to simply acknowledge the severity of the issue without taking action. OSEP and other federal agencies are in a unique position to serve as a lever for change for addressing this critical need.

The federal government must be part of the solution, but it cannot be solely responsible for solving these problems. Doctoral and teacher preparation programs must also do their part. Our recommendations for doctoral and teacher training programs include:

- Strategize how to address the impending special education faculty shortage: Doctoral programs, small programs, and those in rural areas will be hard-hit. More doctoral applicants with career interests in higher education must be recruited to doctoral programs. The key predictors established by the earlier study and solidified by this study offer an important perspective on the profile of these students.
- Actively commit to diversifying the field: Additional efforts must be made to recruit diverse individuals with faculty-career interests to special education doctoral programs. Clearly, the supply of graduates is insufficient to be representative of the nation's population.

In sum, the supply of special education faculty has increased since the last study, although without the diversity reflected in the national population. However, the forecasted faculty retirements at our nation's doctoral producing institutions may significantly reduce the pipeline of future faculty and, subsequently, the production of new special education teachers and the research upon which their teaching practices depend. Fortunately, the data suggest that federal policy and doctoral program actions taken after the last study contributed significantly to the current increase in supply. Therefore, we remain optimistic that the field will be similarly responsive to the results of this study and prevent the potential shortages that the current data predict.

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Table 1

*Logistic Regression Predicting Probability of Faculty Career*

	B	SE B
Female	-.178	.319
Underrepresented minority	-.329	.275
Has at least 1 child	.354	.226
Relocated to enroll in graduate school	.358	.238
Relocated to take a position***	1.597	.266
Planned to be faculty upon entering graduate school***	1.608	.238
Had a TA, RA, traineeship or fellowship*	.483	.219
Married	.181	.281
Age at time of enrolling in graduate school	-.023	.015
Time to complete doctoral degree*	-.136	.059

\*\*\*p<.001, \*\*p<.01, \*p<.05

Table 2

*Differences in Special Education Graduates Entering Faculty and Non-faculty Positions*

Characteristic	Faculty (n=307)	Non-faculty (n=245)
Percent who were female*	53.4	46.6
Percent who were underrepresented minorities	55.0	45.0
Percent who were married or living together	55.2	44.8
Percent who had dependents	57.4	42.6
Percent who planned to be faculty upon entering the program***	71.3	28.7
Percent who relocated to begin PhD/EdD***	68.8	31.2
Percent who relocated to take their current job***	79.5	20.5
Percent who had a TA, RA, traineeship, or fellowship*	61.9	38.1
Percent who regarded TA, RA, traineeship, or fellowship as their primary source of support**	61.2	38.8
Percent who regarded earnings from a job as their primary source of support	40.6	59.4
Age when enrolling in doctoral program***	34.7	37.5
Elapsed time between BA and MA*	5.7	6.8
Elapsed time between MA and PhD/EdD***	10.2	12.5
Elapsed time between enrolling in the doctoral	4.5	5.6

program and receipt of degree***		
Elapsed time between BA and PhD/EdD***		

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$

Figure 1

*Special Education Doctorate Supply and Demand*

