



Diversifying the Teacher Workforce: Evidence From Surveys, Phone Interviews, and Site Visits With Educator Preparation Programs

ETS RR–19-38

Laura Goe
Amanda Roth

December 2019



Discover this journal online at
Wiley Online Library
wileyonlinelibrary.com

ETS Research Report Series

EIGNOR EXECUTIVE EDITOR

James Carlson
Principal Psychometrician

ASSOCIATE EDITORS

Beata Beigman Klebanov
Senior Research Scientist

Heather Buzick
Senior Research Scientist

Brent Bridgeman
Distinguished Presidential Appointee

Keelan Evanini
Research Director

Marna Golub-Smith
Principal Psychometrician

Shelby Haberman
Consultant

Priya Kannan
Managing Research Scientist

Sooyeon Kim
Principal Psychometrician

Anastassia Loukina
Research Scientist

John Mazzeo
Distinguished Presidential Appointee

Donald Powers
Principal Research Scientist

Gautam Puhan
Principal Psychometrician

John Sabatini
Managing Principal Research Scientist

Elizabeth Stone
Research Scientist

Rebecca Zwick
Distinguished Presidential Appointee

PRODUCTION EDITORS

Kim Fryer
Manager, Editing Services

Ariela Katz
Proofreader

Ayleen Gontz
Senior Editor

Since its 1947 founding, ETS has conducted and disseminated scientific research to support its products and services, and to advance the measurement and education fields. In keeping with these goals, ETS is committed to making its research freely available to the professional community and to the general public. Published accounts of ETS research, including papers in the ETS Research Report series, undergo a formal peer-review process by ETS staff to ensure that they meet established scientific and professional standards. All such ETS-conducted peer reviews are in addition to any reviews that outside organizations may provide as part of their own publication processes. Peer review notwithstanding, the positions expressed in the ETS Research Report series and other published accounts of ETS research are those of the authors and not necessarily those of the Officers and Trustees of Educational Testing Service.

The Daniel Eignor Editorship is named in honor of Dr. Daniel R. Eignor, who from 2001 until 2011 served the Research and Development division as Editor for the ETS Research Report series. The Eignor Editorship has been created to recognize the pivotal leadership role that Dr. Eignor played in the research publication process at ETS.

RESEARCH REPORT

Diversifying the Teacher Workforce: Evidence From Surveys, Phone Interviews, and Site Visits With Educator Preparation Programs

Laura Goe & Amanda Roth

Educational Testing Service, Princeton, NJ

As America's prekindergarten through 12th grade population becomes increasingly diverse, educator preparation programs (EPPs) are tasked with attracting, admitting, supporting, and graduating more teacher candidates from underrepresented groups. The research reported here was designed to improve our understanding of strategies that some EPPs have used in their efforts to diversify their student body and produce qualified graduates from diverse backgrounds who are prepared to deliver high-quality instruction to their students. EPPs that shared information for this research provided details about the barriers they had identified to increasing diversity in their programs. They also described efforts they made to address barriers and whether they perceived those efforts as helpful in diversifying their programs. Through multiple methods of data collection and analysis, we have compiled and synthesized descriptions of EPPs' strategies that we hypothesize may contribute to success in attracting, admitting, supporting, and graduating more teacher candidates from underrepresented groups. Ultimately, we note the highly contextualized experience of each EPP and suggest that EPPs consider whether strategies and solutions implemented at EPPs that feel they are achieving success would benefit their programs as well, perhaps concentrating on one or more phases of the teacher candidate's experience with the EPP. A model for how to implement programmatic change is proposed.

Keywords Diversity; teacher preparation; preservice teachers

doi:10.1002/ets2.12274

The lack of diversity among teachers in the United States is particularly troubling given the increasing diversity of the kindergarten through 12th grade (K-12) student population. Recently, a study found that students of color make up more than 45% of the prekindergarten through 12th grade (P-12) population, but only 17.5% of teachers are from diverse backgrounds (American Association of Colleges for Teacher Education, 2013). Even though the teaching force has become somewhat more diverse in recent years, student diversity is growing faster (U.S. Department of Education, 2016). There are comparatively few teachers of color: a recent analysis found that only 6.7% of teachers in U.S. public schools are Black, compared with 8.8% Hispanic and 80.1% White (Taie & Goldring, 2017). However, 16% of K-12 students are Black and 25% are Hispanic, with smaller percentages of Asian American and Native American students and students of two or more races; White students make up 50% of the student population (National Center for Education Statistics, 2017).

Numerous studies have found that having teachers of the same race may benefit students of color in myriad ways. Dee (2004) conducted an analysis of Tennessee STAR data, in which students were randomly assigned to classrooms, and found that having a teacher of the student's own race contributed to higher standardized test scores in both math and reading. More recently, Egalite, Kisida, and Winters (2015) determined that there were positive impacts on students' math and reading scores when assigned to same-race teachers, and "... low performing Black and White students appear to particularly benefit from being assigned to a race-congruent teacher" (p. 90). Gershenson, Hart, Lindsay, and Papageorge (2017) provided evidence that "... Black students who are as good as randomly assigned to a Black teacher at least once in the third, fourth, or fifth grades are more likely to aspire to college and less likely to drop out of high school" (p. 2). Furthermore, they found that the effect is largest for Black males living in poverty throughout their grade school years (p. 2). While some of these benefits may be hard to quantify, Cherg and Halpin (2016) found that in the urban areas they studied, such as New York City where 85% of students are minorities, student surveys from the MET study, which collected data on 2,756 teachers in 317 schools, showed that students, and particularly minority students, have

Corresponding author: A. Roth, E-mail: aroth@ets.org

more positive perceptions of minority teachers compared with White teachers (p. 411). The authors suggested a possible explanation:

The finding from this article that, on average, all student groups have more positive ratings of minority teachers, including White students and Asian American students, suggests that minority teachers can translate their experiences and identities to form rapport with students that do not share the same race or ethnicity. (p. 416)

There are also differences in disciplinary referrals when students have same-race teachers. Lindsay and Hart (2017) found that "... exposure to a higher fraction of teachers who are Black reduces the likelihood of receiving exclusionary discipline for Black students at all grade levels" (p. 498). Finally, the race of teachers and principals in the schools appears to have an impact on students' enrollment in gifted programs: using Schools and Staffing Survey (SASS) and survey data collected by the Office for Civil Rights, Grissom, Rodriguez, and Kern (2017) demonstrated that a 10% increase in Hispanic teachers in a school was associated with a 3.1% increase in Hispanic students in the gifted program, which they found meaningful since Hispanic students represent only 10% of gifted students. Similarly, they found that a 10% increase in Black teachers in a school coincides with a 3.2% increase in Black student representation in gifted programs.

Finally, EPPs' efforts at diversifying their programs have been propelled by expectations outlined in accreditation standards to diversify the teaching force. Under Standard 3, Candidate Quality, Recruitment, and Selectivity, Component 3.1: Plan for Recruitment of Diverse Candidates who Meet Employment Needs states that:

The provider presents plans and goals to recruit and support completion of high-quality candidates from a broad range of backgrounds and diverse populations to accomplish their mission. The admitted pool of candidates reflects the diversity of America's P-12 students. The provider demonstrates efforts to know and address community, state, national, regional, or local needs for hard-to-staff schools and shortage fields, currently, STEM, English-language learning, and students with disabilities. (Council for Accreditation of Educator Preparation, 2013, para 1)

It is notable that our survey of 139 EPPs across the country revealed that nearly 80% answered "yes" to the question: "Does your college or university have outreach efforts to attract or recruit teacher candidates from underrepresented groups?"

Focus of Research

The goal for this research is to synthesize information gathered from multiple data collection efforts (surveys, phone interviews, and site visits) into a set of key findings that may provide a focus for EPPs that seek to increase diversity in their programs as well as suggest avenues for additional research into what policies and practices are associated with greater diversity.

We found that literature on diversifying the teacher workforce is limited, particularly in describing the challenges and barriers faced by EPPs in trying to recruit candidates from underrepresented groups, as well as pointing to practices that may contribute to successful outcomes.

A limited set of strategies taken by EPPs to attract, admit, support, and graduate students from underrepresented groups are described in the literature. Bireda and Chait (2011) described several programs designed to increase diversity in teacher preparation, including Teach for America, The New Teacher Project-Fellowship Programs, Urban Teacher Enhancement Program, North Carolina Teaching Fellows Scholarship Program, and Teach Tomorrow-Oakland. The authors concluded,

Successful programs are those that recognize the particular challenges in recruiting minorities and have met these challenges with creative and innovative solutions. Their success also comes from dedicating significant resources to this endeavor and being able to 'meet candidates where they are' in both literal and figurative ways. (p. 23)

Some of the key findings from their study are:

- Some programs with little or no success in recruiting minority candidates have commented that more effort and resources are required to recruit minority candidates, while successful programs stated that they have increased effort and resources, noting that diversity within the program was a priority.

- Programs that are successful often have strong relationship-building components, including one-on-one meetings between candidates and program staff and/or alumni.
- Many highly qualified candidates have other opportunities that are viewed as more prestigious than teaching.
- There are still financial and time-consuming barriers to teaching once a candidate moves on from a teaching program (alternative or otherwise), such as getting and maintaining a teaching license.

The authors provide recommendations aimed at various levels (federal, state, district, and EPP) for improving recruitment and successful graduation of minority candidates, including increased federal oversight/accountability for EPPs, statewide initiatives to provide funding for low-income and minority teachers, increased federal financial aid programs, increasing the number of pathways into teaching as a means of reducing costs, increasing standards for admission, and working with districts to recruit students. However, empirical evidence for the effectiveness of various strategies for increasing diversity has been lacking to date.

Most studies we found tend to focus on an aspect or phase of individuals' pathways toward becoming teachers. An example is a study conducted by Green and Martin (2018) that focused on the barriers encountered by four Black men seeking to become teachers. The study focused on interviews with the men and identified several themes: (a) faculty and teachers' biases about students of color, (b) feelings of isolation, and (c) limited culturally responsive teaching practices in teacher preparation programs (p. 6). While findings such as these from interviews with students from underrepresented groups are critically important in understanding the barriers that students encounter, we focused primarily on research that describes the role of EPPs, particularly whether EPPs recognize and address barriers that hinder success in attracting, admitting, supporting, and successfully graduating students from underrepresented groups. Furthermore, we sought to identify and document strategies the EPPs have developed to address the barriers, with a focus on eliminating or lessening the challenges faced by students from underrepresented groups.

One recent report that reviewed current EPP practices that may contribute to increased diversity was conducted by Carver-Thomas (2018) and described issues with recruitment and retention of teachers from diverse backgrounds. Carver-Thomas contended that successful recruitment and retention begins with "high-quality teacher preparation programs" (p. 6) that address barriers such as the cost of traditional teacher preparation programs. Carver-Thomas also noted that some programs have focused on improving successful recruitment and retention through implementing service scholarship/loan forgiveness programs, teacher residencies, "grow your own" programs, ongoing mentorship, adjustments to teacher licensure requirements, and data systems within EPPs to monitor diversity in enrollment and completion. In addition, survey research conducted by the Policy and Programs Study Service Office of the Department of Education (U.S. Department of Education, 2016) documented that while only 2% of individuals who are preparing to become teachers are enrolled at Historically Black Colleges and Universities (HBCUs), a substantial percentage (16%) of all Black teacher candidates graduate from HBCUs. The same study showed that while 51% of students in 2012 were White, 81% of the teachers were White (p. 6). Our work extends the discussion of the challenges Carver-Thomas identified and proposes some additional strategies that have been described to us by EPPs in surveys, phone interviews, and site visits. In particular, the studies we reviewed, combined with the data we collected, appeared to show that under the right conditions, predominantly White institutions (PWIs) can be successful in recruiting, retaining, supporting, and graduating teachers of color.

Most of the literature on diversifying the teacher workforce has relied on self-reported data, as does ours. We began with a survey of EPPs, and responses to the survey provided leads for collecting additional information. Specifically, we sought to learn from survey respondents' practices and strategies that seemed promising, as well as hear from respondents who reported having difficulty attracting students from underrepresented groups.

We began with a set of four challenges that we determined were most likely to be common among EPPs seeking to diversify their programs: attracting, admitting, supporting, and graduating students from underrepresented groups. Conversations with both state leadership and EPP leaders at conferences affirmed that we were on the right track. We developed research questions that would elicit responses to these broad categories:

1. What strategies have been most helpful in attracting students from underrepresented groups to EPPs?
2. What challenges do EPPs face in ensuring successful admission for underrepresented teaching candidates, and what strategies have been tried to address those challenges?
3. What strategies have shown the most promise in supporting students from underrepresented groups through the program and ultimately, through graduation?

From our research questions, data collection procedures were generated, initially focusing on surveys, with phone interviews and site visits added after we had analyzed survey data. A set of phone interview targets were identified from the survey data, and interviews were conducted with those that were willing to participate in an interview. Some of the site visits were chosen based on their phone interview responses, while others were selected based on their reputations for success in recruiting, admitting, supporting, and successfully graduating teacher candidates from underrepresented groups.

During the analysis of data, initial hypotheses were generated based on emergent findings. These hypotheses are presented later in this report along with supporting examples from the data.

Research Methods

Our analyses of data from multiple sources occurred in three overlapping phases. We used a mixed-methods design, focusing on triangulation of data through the collection and analyses of both qualitative (phone interviews, site visits, open-ended survey responses) and quantitative data (survey). Triangulation enhances the validity of findings through comparison of data obtained from multiple sources, often collected by multiple researchers (Mathison, 1988). We utilized statistical software (SPSS) to conduct analyses on quantitative data from the survey. SPSS software is a sophisticated tool that is useful for organizing and analyzing both qualitative and quantitative variables in the same data file (Pallant, 2016). A combination of Excel and NVIVO were used for qualitative coding of the survey data, phone interviews, and site visit transcripts. NVIVO allows for greater complexity in analyses (Saldaña, 2015), while Excel provides a simple platform to sort and structure data (Ose, 2016) as well as to analyze and code data in multiple dimensions (Meyer & Avery, 2008). More specifically, the phone interview data was analyzed using NVIVO, and the site visit recordings were transcribed and then entered into Excel for coding and analyses.

Data Collection

Data informing this report were collected from June 2016 through January 2018 through multiple strategies (e.g., online survey, phone interviews, in-person site visits). Initial analyses of the survey data guided the development of questions for the phone interviews and site visit protocols. The survey as well as all interview protocols were approved through the ETS institutional review board process and are included as appendices. We focused on collecting data directly from EPP leaders such as deans, recruitment specialists, department chairs, and others who had knowledge of efforts to attract, admit, support, and graduate students from underrepresented groups.

The research began with a survey (Appendix A) designed to (a) gather a wide range of viewpoints from EPPs around the country, (b) document challenges and strategies suggested by survey completers, and (c) identify survey completers for follow-up contact. The survey was developed by ETS researchers, and survey questions were initially generated based on conversations with EPPs about key challenges and strategies. Through an iterative process, the survey was finalized with multiple ETS researchers contributing ideas and comments to answer the two research questions focused on challenges in attracting, admitting, supporting, and successfully graduating teacher candidates (Question 1) and strategies EPPs used to address the challenges (Question 2). The survey was distributed through several mechanisms, including direct contacts with state teacher certification officers, who then shared the link to the survey with their EPPs. We also provided information about the survey (including a link to the survey) at conferences such as those sponsored by the National Association of State Directors of Teacher Education and Certification and the American Association of Colleges of Teacher Education.

The online survey (Appendix A) was offered to educator preparation program staff and leadership from 2016 through 2017. We hoped to capture strategies for success, as well as to learn more about specific challenges they experienced and their responses to those challenges. EPP representatives were asked to rate themselves on how successful they believe they have been in recruiting, admitting, supporting, and graduating students from underrepresented groups. We did not define the levels of success (very successful, successful, mixed success, not successful, very unsuccessful), so there may be differences in how EPP leaders interpreted and viewed success for their programs. Questions designed to elicit information about specific challenges and strategies were included through a combination of open-ended and Likert scale questions. It should be noted that the survey responses were generated from a convenience sample rather than a random sample.

EPPs self-selected to complete the survey and determined who at the EPP should be involved in answering the questions. Appendix B lists states for which one or more EPPs responded to the survey. However, three state education agencies (Texas, Virginia, and Pennsylvania) actively encouraged their EPPs to respond to the survey, resulting in higher response rates for those states as a percentage of the overall sample. While we provided multiple avenues and opportunities for EPPs to learn about and participate in the survey, the number of responders is limited (139 EPPs). Additional details about the 139 EPPs that responded to the survey are aggregated and shown in Appendix C. In our second phase of data collection, phone interviews were conducted with EPP representatives who had responded to the online survey and either agreed to speak with us or referred us to another leader within the EPP. We also interviewed one EPP that did not participate in the survey but came to our attention through a fellow researcher. Phone interviews followed a semi-structured protocol (Appendices D and E) and lasted less than 1 hour each. Conversations were informed by data gathered during the online survey data collection. Our questioning varied slightly for school representatives who self-identified as “successful” or “unsuccessful/mixed” in the online survey question relating to their overall success in attracting, admitting, supporting, and graduating students from underrepresented groups (see Appendices D and E, respectively). The purpose of the phone interviews was to obtain a deeper understanding of the EPP representative’s experiences, challenges, and their reasons for stating in the survey that the EPP was successful or unsuccessful.

Our third and final phase of data collection consisted of site visits to EPPs. In an effort to gather data from more than one representative at each location visited, we conducted focus groups at seven sites. Focus group participants included department chairs, deans, professors, specialized staff such as recruitment staff and those administering and analyzing assessments, and in several cases, EPP students who had been invited to participate by their EPP leadership. Site visits lasted between 1 and 2 hours. Conversations during the site visits were based on a topical guide (Appendix F) as well as focused on the previous survey and phone interview responses from representatives at the same EPP, when available.

Study Sample

Online Survey

The final sample for the online survey included respondents from 139 EPPs in 29 states (see Appendix B for states with at least one response). Some states actively promoted the survey to their EPPs and thus contributed larger numbers of responses, while we received smaller numbers of EPP responses from some states. We received no survey responses from 21 states. From those EPPs where the survey respondent indicated that they were willing to be contacted for further research, we selected EPPs for phone interviews, choosing a sample which represented a range of responses from “very successful” to “very unsuccessful” as well as a range of various types of colleges (see Appendix C).

Phone Interviews

Due to limited time and resources, we did not conduct a phone interview with everyone who had indicated in the survey a willingness to speak with us. We made strategic efforts to conduct interviews with a wide range of institutions types and locations around the country, including HBCUs; Minority-Serving Institutions (MSIs); Hispanic-Serving Institutions (HSIs); Asian American and Native American Pacific Islander-Serving Institutions (AANAPISIs); tribal colleges; and universities and colleges without a special population designation. Our final set of 11 institutions have varied student population sizes, are in large and small states (both in terms of population and territory), and represent urban, suburban, and rural communities. They represent all four U.S. Census Bureau regions and eight of the nine divisions under those regions. Phone interviews were conducted by two-person teams, with one person asking questions and the other person taking notes. While we used interview protocols to guide the conversations, we also asked follow-up questions that were triggered by statements made by the EPP representatives.

Site Visits

We conducted seven in-person site visits at EPPs. Site visits took place in three states in the Southwest and the Northeast regions of the country. Four of the site-visit EPPs were selected because we had previously identified them as having had considerable success in attracting and graduating students from underrepresented groups, even though they operated in

PWIs. In particular, these were EPPs that had documented success in increasing the numbers of students from underrepresented groups, in spite of being PWIs. Three other site visits were conducted with EPPs that primarily served students from underrepresented groups, and the focus at these EPPs was on the program's efforts to successfully graduate students from underrepresented groups who had limited resources and/or were first-generation college students. We conducted one of the interviews at an EPP that offered alternative certification to its students, while we conducted the other six at traditional EPPs.

Our initial findings from analyses of the survey were confirmed in many of the phone interviews. In particular, phone interviewees from PWIs commented about the local lack of diversity making it difficult to recruit students from underrepresented groups. However, that was not the case for all EPP representatives, and we reached out to several of them at PWIs for site visits so that we could learn more about the strategies that they believed contributed to their success in attracting students from underrepresented groups to their campuses when PWIs in similar geographic locations were having little or no success.

Data Analysis

Two researchers with experience analyzing both qualitative and quantitative data developed codes and compared interpretations across the various types of data. Data was analyzed using a combination of SPSS, Excel, and NVIVO. A research assistant was also added to the team to create an additional level of verification in code development.

Data analyses were conducted iteratively, beginning with the survey which contains both quantitative and qualitative responses. We worked simultaneously on data analyses, developing counts from the selected-response survey sections and codes from the open-ended responses. While we describe our analyses methods separately for clarity, we discuss our findings as a set, because there was overlap in the timing of data collection and analyses, and we explored most of the same questions in each of the data collection efforts (quantitative and qualitative survey data, phone interviews, and site visits).

Quantitative Analyses Methods

SPSS was used as a platform for the quantitative analysis of survey data. To allow us to examine the responses in a larger context, we also added variables from the Integrated Postsecondary Education Data System, which allowed us to consider geographical location, size of the college, median family income, minority designation (such as HBCU), selectivity, and numerous other factors in our analyses. The survey analyses consisted primarily of establishing counts for each variable, some of which had multiple response options, such as a question about how successful EPP leaders felt they had been in diversifying their programs, for which five levels of success were offered. Open-ended responses were coded and categorized into broad themes, which gave us an overall representation of strategies and challenges. More in-depth coding followed to examine open-ended responses to separate preliminary themes into additional, more specific codes.

Qualitative Analyses Methods

Three ETS researchers were involved in developing and determining a final set of codes for phone interview data, the survey data, and site visit data. NVIVO software was utilized to iteratively code notes from phone interviews. Data from surveys and site visits was coded in Excel (Meyer & Avery, 2008; Ose, 2016). Thematic codes were generated and regenerated at multiple points in the data collection and were initially based on emergent findings from the survey data. These codes were used to inform the questions for both the phone interview and site visit protocols, and results from these data collections were then coded to generate additional themes.

Both qualitative and quantitative methods were used for analyzing the survey responses. For selected response survey questions, we ran frequencies for responses to the questions in order to rank them by most to least frequently chosen. Open-ended responses were analyzed using qualitative data analysis methods to develop an understanding of the challenges EPPs face in increasing diversity at their EPPs, as well as how they are addressing them. We identified common themes that emerged from the survey, phone interviews, and site visits and provide in tables below some examples from the survey data.

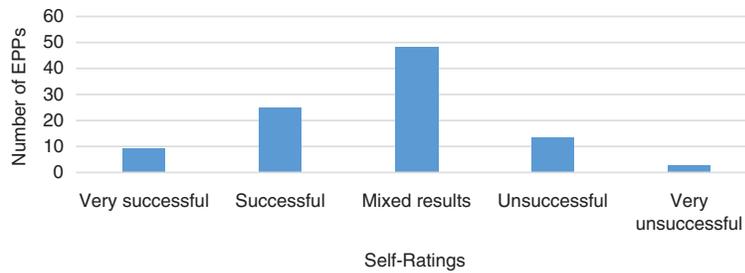


Figure 1 EPPs' ratings on their success in attracting candidates from underrepresented groups interested in teaching.

An advantage of triangulating data collection in this research with surveys, phone interviews, and site visits is that multiple perspectives can be compared. For example, in the survey, phone interviews, and site visits, we asked many of the same questions, particularly questions focused on the challenges faced by EPPs in diversifying their programs and the strategies they had used to address the challenges. Versions of these questions appear in the survey as well as in the phone interview protocols. The site visit protocols were less structured but also focused on issues initially raised in the survey and phone interviews. By triangulating and comparing responses from these sources of data, we were able to verify our understanding of the range of challenges and strategies. The site visits and phone interviews were particularly valuable in that they allowed us to probe more deeply into the challenges faced by EPPs and the strategies they had employed to address them.

Attracting Students From Diverse Backgrounds Into an Educator Preparation Program

Based on the survey and phone interviews, it is clear that many, perhaps most, EPPs would like to increase their student diversity and ensure success for students from underrepresented groups. When asked to rate themselves in terms of their success in this area, most EPPs responding to the survey selected mixed success in these efforts, as shown in Figure 1. However, because we did not define success for survey participants, it is possible that one EPP's success might be another EPP's mixed results.

Further, what we can interpret from Figure 1 and the additional responses to the survey is that most of the EPPs surveyed are thinking about teacher candidate diversity and are actively pursuing ways to increase diversity in their programs. Information from the survey as well as phone interviews and site visit data suggested that EPPs struggle to identify mechanisms that will help them achieve their desired results, particularly when considering geographic location, budget constraints, and other factors that made success more difficult to achieve. We did find that EPPs are taking a hard look at their efforts, trying out new strategies, and determining what works for them. Only one of the survey respondents indicated that they were not actively engaged in recruiting students from underrepresented groups for their EPP. In this report, we triangulate data across three data collection efforts (survey, phone interviews, and site visits) to develop a set of themes that EPPs may want to consider as they pursue strategies to diversity their programs.

Emergent Themes

Through collecting responses that focused on similar themes, it was possible to determine which strategies were most commonly used. Because we did not define the meanings of the five levels of success in the survey, we chose not to attempt to align the data on how EPPs are meeting challenges with the claims made by the EPPs about how successful they have been in attracting, admitting, supporting, and graduating students from underrepresented groups. Thus, rather than suggesting a hierarchy of approaches that should be used for success, we offer our analyses of the data and encourage EPPs to use this information to stimulate their own conversations around diversity and consider how different strategies might benefit their efforts.

Findings and Hypotheses

While our research suggests that some EPPs are, by self-report, successful at attracting, admitting, supporting, and graduating qualified teaching candidates from underrepresented groups (including African American, Hispanic, Latinx, Native

American, candidates with English as a second language [ESL], and first-generation college students), the definition of success may vary among EPPs as noted above. Besides this concern, we found that it was difficult to draw accurate comparisons among programs that are very different across a range of variables, including geographical location, diversity of the areas served, size of the EPP, financial support available to attract diverse students, and the diversity of the faculty and students.

This wide range of EPP variation in the survey data was useful in one regard: We were able to select EPPs for phone interviews that represented different combinations of variables. We were particularly interested in EPPs' success in increasing diversity and their descriptions of how they achieved success because these have been infrequently documented in the research literature. Comparing the research to the challenges and successes reported by EPPs has revealed some specific strategies and emergent hypotheses that could be considered by other EPPs seeking to improve their success in attracting, admitting, supporting, and graduating teachers from underrepresented groups.

In the following sections, we present challenges that were noted in our analyses of the various data sources, as well as possible strategies for addressing those challenges, also collected from the data.

Challenges and Strategies

We have developed several hypotheses related to challenges, which are shown below. Quantitative survey data is reported in tables and then discussed in greater detail, along with open-ended responses from the survey, phone interviews, and site visits. Findings are presented below in order of an EPP's experience with a teacher candidate: attracting, admitting, supporting, and graduating candidates from underrepresented groups. We describe challenges first, followed by strategies. Efforts to attract students and support them make up the bulk of our themes and related hypotheses because we view these as the two most critical challenges faced by EPPs. Without attraction, there are no admissions, and without support, there are fewer students to graduate. The challenges are presented in the following order: attracting, admitting, supporting, and successfully graduating students from underrepresented groups.

Challenge: Attracting Students to the College/University

A survey question we asked was: *What factors do you believe have contributed to any difficulties your college or university has had in attracting or recruiting underrepresented candidates?* The responses were coded and categorized into several themes:

- Lack of support/mentoring
- Lack of recruitment
- Lack of partnerships with and support from K-12 and community colleges
- Lack of diversity at the institution
 - Faculty
 - Students
 - Geographic location, general population near the campus
- Competition from other institutions or from other programs/majors at the same institution
- Potential recruits' lack of knowledge of the program and/or institution
- Absence of role models in the field
- Financial difficulties

Analysis of these survey responses combined with data from our interviews suggest that EPPs see many of these challenges as out of their immediate control. For example, some EPPs seeking to increase diversity among teacher candidates noted that lack of diversity at the institution as a whole has an impact on their efforts to attract students from diverse backgrounds to their program. Geographic location is also described as a barrier—another factor over which they believe that they have no control. Funding for students from underrepresented groups is an issue in not only attracting but supporting students through their years at the EPP. Many students may be dissuaded from applying to college in general because of a perceived financial barrier. Some EPPs noted that resources were important to their efforts to diversify their EPP, but other EPPs stated that they had few financial resources to devote to targeted recruitment efforts.

Strategies: Attracting Students to the College or University

Across the data sources we found a wide range of strategies being tried across institutions, including the use of targeted recruitment services, establishing relationships with local school districts with high diversity, bringing in EPP leadership from underrepresented groups, hiring recruiters of color, and so forth, as we describe in this section.

As we found in some of our site visits, in addition to faculty and leadership of color, targeted recruitment resources can also bring diverse candidates into an EPP. One EPP representative noted during a phone interview that they recently began supporting a faculty member whose responsibilities include teaching one course per semester while the rest of their time was dedicated to recruitment, including visiting local high schools and liaising with the university admissions office. Another predominantly White EPP we visited invested double the budget they had initially planned to hire talented, diverse recruitment staff, which helped the EPP achieve its ambitious diversity benchmarks. Based on our initial data collection and analyses, we hypothesize that if an EPP expects to be successful in recruiting teacher candidates from underrepresented groups, sufficient resources must be made available for the effort, including dedicated recruiters, investment in leadership and faculty of color, and engagement in partnerships with local school districts and community colleges.

Another mechanism EPP respondents noted as helpful in improving recruitment is establishing relationships with local school districts with high diversity. Engagement with local school districts can take many forms and produce various positive outcomes. Survey respondents specifically mentioned ways they are working with local districts, including targeted recruitment and collaborating on grow your own programs in high schools. For example, creating formalized university-school partnerships are often seen as an investment in the local community and may promote student interest in teaching as a career and applying to the local EPP in the future. During a site visit, one dean informed us about multiple efforts to work with districts locally and recruit students interested in teaching, such as involving high school teachers in recruitment efforts, showing videos of former students from the high school talking about why they went into teaching, and presenting to high school groups for students of color.

For the university, a teaching academy program can create a pipeline for future teacher candidates from diverse backgrounds who have been pretrained for success in the EPP. During one phone interview, an example was given of a high school teaching academy in its second year. It boasted a 90% minority student rate, which was similar to the high school's overall diversity. If these students remain in the teaching academy track throughout high school, graduate, and go on to enroll in the EPP—having already earned college credits through their participation in the program and having been taught by both high school teachers and college professors as part of the academy—this should increase the numbers of students from diverse background entering into and eventually graduating from the EPP.

Given that students from underrepresented groups may be unaware of financial aid options available to them, it is not surprising that many institutions are focusing on how they provide information to students about financial support opportunities. Thirty-one EPPs included financial aid or assistance in their responses to our open-ended survey question, “When you have had success in recruiting students from underrepresented groups to your EPP and supporting them through graduation and initial licensure, what factors appear to have made the most difference?” These responses included providing direct financial aid but also general assistance for students in planning a workable financial strategy. One EPP that we visited created opportunities for underrepresented students to receive a stipend for working as researchers within the EPP. From determining research questions to conducting the research, analyzing data, and writing a paper, students worked as a team, guided by faculty and EPP leadership.

A key task of the EPP is to identify appropriate scholarships, grants, and funding opportunities and then to ensure that students who qualify for such support receive it. Rather than simply providing prospective students with information, links, or paperwork, working closely with them to complete and submit necessary documentation is a more effective strategy to ensure that students obtain financial aid. According to a recent study, “students need proactive help to navigate the aid system, not just more information” (Scott-Clayton, 2015, p. 8).

After considering our data, we hypothesize that specific, targeted education about the financial commitments for college and the various pathways to funding one's education (including scholarships, grants, loans, and loan forgiveness programs for teachers) are key to helping diverse candidates understand their options and see teaching as a potential career.

One of the survey questions asked EPP representatives to indicate what types of efforts were in place at their EPP for attracting students from underrepresented groups. Table 1 shows the results in rank order, with most common to least common strategies for attracting students from underrepresented groups to the EPP.

Table 1 Strategies for Attracting Students From Underrepresented Groups

Question: What types of efforts [to attract students from underrepresented groups] are currently in place?	Percentage
Open houses for incoming freshmen	79.1
Information sessions at local high schools	68.2
Targeted academic advising for students interested in teaching to prepare them to enter EPP	65.5
Introductory or exploratory course to familiarize students with education majors	48.2
Community based outreach (civic groups, churches, etc.)	36.4
“Teacher academies” at local high schools for students interested in teaching	32.7
Other	31.8
Summer programs for high school students interested in teaching	16.4
Summer program for students on your campus to attract potential candidates to teaching	12.7

Notes. $N = 107$. EPP = educator preparation program.

From Table 1, we find that nearly four out of five EPP respondents reported open houses as a strategy. The next two most common strategies were information sessions at local high schools and targeted academic advising for students interested in teaching to prepare them to enter the EPP. These targeted strategies are primarily focused on recruiting students locally who would be most likely to attend their hometown college or university.

From the survey data, we find that most EPPs rely on more traditional strategies. However, the open-ended responses for this question provide greater details on specific strategies that in some cases went beyond geography, and in other cases capitalized on partnering with local institutions:

- A program that includes housing and tuition for males of color
- A collaborative partnership among a university, four school districts, and four community colleges to create opportunities for students interested in teaching (includes scholarship opportunities, financial support, personalized academic advising, core/education courses with seamless transferability, tutoring, mentoring, job shadowing, field trips, seminars, training for job fairs and interviews, assistance in finding employment in home district)
- Mentorship for local 7th-12th graders
- Transfer agreements with local 2-year colleges and online teacher preparation program to attract students from rural areas of state
- Content-specific scholarships (math & science)
- Targeted scholarships for bilingual and ESL certification students
- Initiative to recruit and retain Hispanic/Latinx students in EPP

Another approach to attracting students from underrepresented groups was described in some of the phone interviews and site visits: teacher academies. These academies typically start in middle or high school. Some of them may be a partnership between a local EPP and one high school, while others may involve multiple schools. One of the site visit EPP leaders stated their reason for supporting a teacher academy: “[We believe] that if you can get the kids on campus, get them familiarized, comfortable, like this isn’t such a scary place and ‘I can navigate this; I can do this,’ it makes a huge difference.” Some of the EPPs also had agreements with high schools serving underrepresented students to give participating students college credit for taking elective courses at high school relevant to entering the teaching major. They felt this gave the students a head start on course work as well as an incentive to pursue the teaching major.

One theme identified from the survey data and some phone interviews was that lack of diversity in the community/geographical area where the EPP was located hampered EPPs’ efforts to recruit students from underrepresented groups. However, multiple respondents, including three of the site visit respondents, described how they addressed this problem: bring in leadership and/or recruiters from underrepresented groups to develop strategies that work and lead efforts to recruit students. The EPP leaders we talked with that were themselves from underrepresented groups felt that being leaders of color gave them a significant edge in attracting students from underrepresented groups. As one African American EPP leader at a school that reported being very successful in recruiting students from underrepresented groups said, “It helps that we look like them.” In addition, their development of innovative strategies and programs, as well as support from their universities, were noted to be important factors in these leaders’ success in recruitment. Thus, while the geographic challenge is real and seemingly insurmountable for some EPPs, other EPPs have succeeded through strategic hiring decisions within the EPP. However, both institutional commitment and resources are factors in these hiring

decisions, which may prove to be challenging for many EPPs. Overall, more than one third of the EPPs responding to the survey reported that a lack of diversity at the college or university and/or the geographic location and population nearby contributed to the difficulty in attracting candidates from underrepresented groups. However, as noted above, EPP leadership and/or recruiters of color may contribute to EPP's success in diversifying their programs, even in geographic areas that are mostly White and in predominantly White institutions. All but one of the seven EPPs we visited had leadership and/or recruiters who were themselves from underrepresented groups.

As part of recruitment efforts, some EPPs noted the importance of getting potential teacher candidates into diverse schools to observe experienced teachers of color in action, helping stimulate their interest in entering the EPP. Furthermore, such experiences may help potential candidates “see themselves as teachers” as several survey respondents noted and help these candidates persevere when challenges arise. In some states, these field experiences occur before a student is admitted to the EPP. In our survey responses, 10 EPPs specifically noted that early field experiences were important to recruitment into the EPP.

As described above, our survey data and several of our phone interviews reveal that a number of predominantly White EPPs cite their current student and faculty demographics as the reason it is nearly impossible to attract students of color. Interestingly, during a phone interview, a representative from a predominantly White EPP discussed their thinking about diversity in terms of socioeconomic status, religious affiliation, and gender instead of race. This way of categorizing students allowed the representative to discuss successes in terms of efforts they were making to provide scholarships and attract more males to the EPP. Racial diversity was thought to be unachievable due to the homogeneity of the current faculty and students, and therefore diversity was redefined to exclude race but encompass other scarce attributes.

Another strategy for attracting students from underrepresented groups to campuses that are predominantly White is to create multiple, sustained opportunities for the students to socialize with other students from underrepresented groups and build a community of support within the program. In one large university, an official university student group for students of color was created, and as an officially sanctioned student group, it receives funding from the university. The funds have been used to bring in speakers of color who are educators. Many of these guests are well-known speakers, including teachers of the year and book authors. Moreover, these guest speakers may inspire other students from underrepresented groups who had not considered teaching careers to further explore the teaching profession. They also provide an opportunity for EPP faculty, students in the EPP, and prospective students in the campus at large to interact and make connections.

One of our site visits included an opportunity to learn about a program the EPP put into place to recruit and support African American male students who are interested in teaching careers. In an effort to diversify the EPP by race as well as gender, the dean of the EPP held a meeting with EPP faculty and discussed prioritizing the recruitment and support of African male students. The dean assigned an African American male faculty member to get the program started. The faculty member stated, “It was great to hear that a university was actually looking to create a pipeline program that would start off with recruiting a cohort and then retaining them all the way through postgraduation, making sure that they connect with the mentor sources we have in place and the employment opportunities that the mentors help identify.” He pointed out that it was not just about recruiting the young men, but “... taking them from their high school connection through college and then beyond.”

Challenge: Admitting Applicants From Underrepresented Groups to the Educator Preparation Program

Phone interviews, surveys, and site visits revealed a number of perceived barriers to admitting students to the EPP. Included in these barriers are concerns that students had difficulties passing required entrance tests, did not successfully complete all the required courses, or did not have a high enough grade point average. Thus, even though their college or university may have been successful in increasing the diversity on campus, there was still the problem of admitting diverse students into the EPP. One of the survey questions asked EPPs to elaborate on this challenge. The most commonly selected responses focus on students' preparedness for the tests and course work required to enter the EPP. Note that survey completers were able to select multiple responses, as shown in Table 2.

The open-ended responses revealed more specifics about why EPPs had difficulties in attracting and admitting candidates from underrepresented groups.

- Many of our students from underrepresented groups struggle to balance family, work, and school.
- Even though scholarships are available, applicants do not think they can manage the tuition.

Table 2 Admitting Applicants From Underrepresented Groups

Question: In what ways have your efforts been less than successful in attracting student applicants, especially applicants from underrepresented groups, who are accepted to your EPP?	Percentage
Students have difficulty passing one or more components of the academic skills tests required for entry into the program	66.9
Students applying have deficiency in core academic skills (reading, writing, mathematics)	51.6
Other	34.7
Students have difficulty in general education course prior to applying to the EPP	29.8

Notes. $N = 126$. EPP = educator preparation program.

- Costs; family pressures to choose other careers; number of underrepresented currently in the program (students don't want to be one out of 30).
- No proactive admissions recruitment for underrepresented groups for teaching.
- Students lack financial resources for all the tests required, also some are homeless, have transportation issues, or have other problems that are barriers to completion.
- Multiple responsibilities and commuter status impact a traditional college experience.

EPPs discussed collecting and evaluating a variety of data for admission purposes, such as SAT[®] and ACT scores; GPA (high school and college); teaching experience, if any; results from state/national merit exams; current major; interest surveys; class rank; writing sample; letters of recommendation; involvement in high school; community and church activities; whether they like kids and do volunteer work/tutoring in schools; oral interview; and TOEFL[®] scores. Research has demonstrated that students of color have more difficulty passing basic skills exams commonly used as part of the requirements for admission to an EPP (Gitomer, Brown, & Bonett, 2011). Research also suggests that students of color who are unsuccessful in passing the entrance test the first time are less likely to retake the exam (Buzick, Collier, & Lockwood, 2017), meaning they will likely never enter the EPP. This suggests that it is important to establish that students have the requisite knowledge and skills needed to pass the test *before* they take an entry exam the first time.

For some EPPs, a limited pool of applicants means that virtually all students who apply are accepted. A phone interview with a college serving mostly Native American students noted that they accept all students that apply. This presents a particular challenge for the EPP because rather than enrolling students whose qualifications substantially exceed their admissions requirements as colleges with an abundance of applicants can do, they enroll *all* students who meet their requirements, with a larger range of skills and abilities, as well as educational deficits, that must be determined and then addressed. For this college, considerable efforts and resources go into basic skills courses, test preparation, and tutorials.

For those states that use basic skills tests as mentioned above, state-determined cut scores may present a challenge for admitting some students who would otherwise be potentially strong teacher candidates. States can make their own determination about cut scores, which are the scores students must achieve in order to pass the test and gain admittance to an EPP. States that are concerned that their current teaching force may not have adequate knowledge for teaching may set higher cut scores, resulting in a lower number of students who qualify for admission to the EPP. For other states, students do not have to take a basic skills test if they have a sufficiently high score on the ACT or SAT.

Strategies: Admitting Applicants From Underrepresented Groups to the Educator Preparation Program

As described above, EPPs struggled with solutions for some of the perceived challenges in admitting the students. However, some potential solutions which have been described in the survey as well as in phone interviews and site visits focused on providing individual support, mentoring, and financial assistance. Several EPPs reported using a cohort model to encourage students to help each other and work collaboratively to overcome their individual challenges. Some of the challenges related to lack of financial resources, and several EPPs discussed seeking and obtaining targeted funding to provide financial assistance for students from underrepresented groups who would otherwise have not been able to enter the program or would have struggled financially.

To improve passing rates on admission exams, proactive measures such as boot camps for subjects determined to be particularly challenging as well as tutoring, online courses, and test-taking strategies have all been mentioned by survey respondents. EPPs may have to prioritize finding the resources to provide preparation courses and material, tutoring, and incentives for students to prepare for the examinations. In fact, one school incentivized attendance at study sessions by paying students' testing fees if they attended all sessions.

Based on our analyses, we hypothesize that as students seek admission to the program, EPPs should proactively identify potential roadblocks, such as academic performance that may provide information on students' performance on entrance exams, to identify ways to intervene early and increase students' opportunities for success.

Challenge: Supporting Students From Underrepresented Groups in the Educator Preparation Program

There are a number of challenges described by the EPP representatives when discussing how to support students from underrepresented groups. For example, in predominantly White universities, students from underrepresented groups entering an EPP may find few other students that look like them and/or share their background, thus creating a feeling of a missing community. In addition, students may find that the EPP faculty and staff is all or mostly White, which can hinder a sense of belonging to the program and also raise questions about mentorship. Students may struggle financially and not be aware of all available resources they can access. Students may also have concerns about succeeding in their courses and preparing for licensure tests and may feel that they have no one to help guide them through the process.

A key challenge in recruiting students from underrepresented groups was having relatively small numbers of students from underrepresented groups in their programs. At one site visit, the dean stated that students reported that they were sometimes the only person of color in the room when they attended classes. From the data we collected, we found that EPPs noticed that students from underrepresented groups may feel isolated and that they may have difficulties in navigating the college environment, especially in colleges or universities with few students of color. An intentional effort to recruit a cohort of students of color made a difference in students' comfort levels and feelings of belonging, as we noted in three schools that focused on recruiting and supporting multiple students of color. The challenge for the EPP staff and faculty is to find strategies and solutions that will promote the success of students in the program and that may begin with developing a clear understanding of what the students need and how EPP staff, faculty, and other students can help ensure that students from underrepresented groups receive targeted, personal support that addresses their specific needs. Fortunately, the participants in our research had a range of strategies that they have found helpful in supporting diverse teacher candidates.

Strategies: Supporting Students From Underrepresented Groups in the Educator Preparation Program

Over the course of our data analyses, we determined that there are a variety of external and societal forces that EPPs believe are impacting the attraction, admission, support, and graduation of teacher candidates. Some EPPs have identified specific barriers that students from underrepresented groups experience and have found ways to help students get past them. We asked survey respondents the following open-ended question: "When you have had success in recruiting students from underrepresented groups to your EPP and supporting them through graduation and initial licensure, what factors appear to have made the most difference?" The top five categories that EPPs believe made the most difference, in terms of number of responses were:

- Personal relationships (with advisors, faculty, and other students)
- Individualized, one-on-one, personal support for academics and other aspects of life
- Identifying student weaknesses and provide support in-class and through tutorials
- Financial support: scholarships, financial aid, jobs, and assistantships
- Mentoring, individual attention, and personal touch

At three of the EPPs we visited, a cohort model had been implemented that gave students from underrepresented groups opportunities to support each other academically and socially. More advanced students of color in the program were asked to welcome new students of from underrepresented group into the program, offering them advice and encouragement in the beginning and listening to their concerns and celebrating their successes as they progressed in the program.

EPPs also discussed efforts they had made in promoting opportunities to meet with faculty and staff of color. One EPP described a program they had implemented that created a mentorship program for young men of color in the EPP, matching male principals of color in local K-12 schools with teacher candidates from the EPP program.

Respondents from surveys, phone interviews, and site visits reported that personal touch (frequent contact and attention) was a strategy they believed helped keep students from underrepresented groups on track. One EPP recruiter stated, "We have numbers, cell phones and we follow them on social media and we check and make sure that they are doing what they are supposed to, and we see them frequently."

Proactive advising, and in some cases intrusive advising, were also mentioned as means of supporting students from underrepresented groups. Intrusive advising (Glennen, 1976) is focused on advising the student proactively, rather than waiting for a question to arise or a crisis to develop. According to Museus and Ravello (2010), proactive academic advisors play a key role in the success of students from underrepresented groups. One of the site visit respondents stated that intrusive advising was key to the success of underrepresented teaching candidates in their predominantly White institution in a geographic area with very little diversity.

An example of proactive advising was described by one of the site visit faculty members we interviewed. He noted that the African American male students that he supervised in the EPP were mentored by other faculty and staff. “So whenever I get a flag about attendance or a missing assignment, I will make contact with both the student as well as their mentor so that they can have a conversation about what can we do, what can we assist the student with.” By this means, students were less likely to fall through the cracks and get too far behind to catch up.

Monthly group support was also provided to students from underrepresented groups at one PWI we visited. One faculty member commented, “The monthly meetings are an additional support where all of us [faculty, mentors, and students] get together. We have an identified topic and we try to get ahead of the curve and talk about some challenges that we know exist for them and then create some solutions on how to overcome those challenges when you are on a campus where you might be a small minority.”

Financial supports were also mentioned by many EPP representatives as being critically important for ensuring that students were admitted to and completed the program. Support might take the form of scholarships offered by the EPP to all students or to students from underrepresented groups. In addition, some states provide general grants for teachers or targeted grants for teachers of color. Assistantships were also mentioned as a means of helping students complete their programs.

Students from underrepresented groups may arrive at the EPP with significant challenges, as we have discussed above. To better plan for their successful graduation, it would be sensible for EPPs to begin gathering data on students—including admissions data, entrance examination scores, and semester GPAs—from the very beginning. This will enable the EPP to identify needs and allocate resources to ensure a good start and collect additional data along the way to spot potential problems and develop strategies to address them. In short, collecting, examining and learning from data gathering about students are integral components of supporting students and helping them progress through the EPP successfully. In addition, planning for financial support is an important step in ensuring that they will be able to complete the program.

Challenge/Strategies: Successfully Graduating Students From Underrepresented Groups

One example from a survey respondent indicated that the College Student Inventory (CSI) is administered to all freshmen for early identification of students’ needs, and then success plans are created for first year students. Thus, all students have an opportunity to benefit from targeted support at this college. Additionally, one EPP designated as an HSI and AANAPISI noted the use of predictive analytics to determine at-risk students. From this data analysis, they have worked on resequencing their coursework to better align with students’ needs and added creative programming to address the needs of students from urban and rural backgrounds. Another EPP representative from a large public university discussed efforts to be proactive by building in multiple checkpoints within the program and informal assessments with advisors to identify and target students in need of additional support. They also discussed their efforts to help students see what’s coming ahead in their coursework and upcoming licensure examinations and how their professors worked to explicitly link course materials with examination expectations.

Planning financial support for student teaching is another component of ensuring students are able to graduate with their teaching certification on time. One EPP advisor noted that when she first started at the EPP, faculty were advising students not to work during student teaching. However, she recognized that students may not have the financial resources to refrain from working nights or weekends during their placement. She stated that as a person of color and an advisor, part of her role was to advocate for students from underrepresented groups and break things down for them to promote their success when others in the university may be less knowledgeable about the hardships and challenges the students face in completing their certification.

While a less systematic effort, an EPP that identified as unsuccessful overall noted that as part of their plan to increase the successful recruitment and support of diverse teaching candidates, they were finding success in a celebrations and concerns protocol for starting their department meetings. This protocol allowed professors to discuss students candidly

in the presence of other staff such as advisors who are also in contact with the students. Otherwise unconnected concerns about students could then be tracked and appropriate follow-up planned and implemented, resulting in increased support of students.

Nearly half of survey respondents (49%) noted that caring advisors and face-to-face contact with students were important in identifying students in need of support and improving overall retention and successful completion of the program. Respondents indicated that improving retention can be achieved in a variety of ways, including structured mentoring opportunities, one-on-one counseling, cohort models, small class sizes, and targeted communication efforts between faculty and advising staff. Respondents felt that professors need to have ongoing interactions and conversations with advisors about their experiences with students in their classes so that issues that arise in class do not get lost in the semester-to-semester transition. Further, respondents felt that advisors and mentors need to have frequent, consistent communication with their students to ensure early identification of potential issues or roadblocks. In addition, advisors and mentors may need to reach out directly to program leads within the college (i.e., financial aid, school's writing center, test prep coordinator) regarding various needs their students might have. Some EPPs are achieving this through community groups for students, which in some cases are targeted to ethnic groups and in other cases are more general, such as the Future Educators of America club (FEA). In other cases, it is more about the personal touch, as described by a faculty member at one EPP we visited that practices intrusive advising, who stated, "We follow them, check in with them, and make sure they know they have a support system." In other words, the goal is to catch struggling students before they become discouraged, rather than when they are already looking for the exit.

One school representative noted during a phone interview that their success in creating a cohort of male teacher candidates from diverse backgrounds resided in the school's commitment to support the group. To help ensure the success of this cohort, the school leadership provided resources for scholarships, advising, professional development, community service events, group meetings, and campus support services. While these young men may pursue different education specialties, they form a bond during their frequent cohort meetings, which helps ensure that any needs that arise are identified and met quickly.

Another EPP uncovered a challenge faced by a sizable community of Muslim women: They were unable to make the trip to the college campus for classes due to family constraints and thus were not entering the program. In response, the EPP brought the program to them by opening a satellite early childhood program at a local community college to help prospective teachers from this community obtain their bachelor's degrees.

We hypothesize that systematic data gathering and analysis of student capabilities, challenges, and ongoing performance is essential to providing early intervention and additional supports that help target students before they fail and predict who might need additional study support before attempting a licensure examination. Also, systematic social supports are essential for ensuring that students feel a sense of belonging and are comfortable tapping into various resources when in need of help during their time in the EPP.

A Model for Programmatic Change

In order for EPPs to create change based on an understanding of the specific strengths and needs of their program, we suggest an individualized logic model to guide their efforts. Figure 2 illustrates the path EPPs might take in developing such a plan.

Gather and Examine Data

Creating and sustaining change begins with a concerted effort to examine an EPP's own program data, interview past and current students and faculty, and take time to explore what the data show. An early step for an EPP in this process is to identify, gather, and examine all data that might illuminate specific contextual nuances unique to the institution. For example, if an EPP is focused on improving recruitment of students from underrepresented groups, they might begin by surveying current students in their program. In addition, EPPs might consider interviewing students from underrepresented groups about the factors that contribute to their decision to pursue teaching or go into some other field of study.

Identify Intended Outcomes

From the data analysis, the EPP needs to evaluate its strengths and weaknesses throughout the phases of the teacher candidates' experience with the EPP, which include how they were attracted to the EPP, supports and challenges they

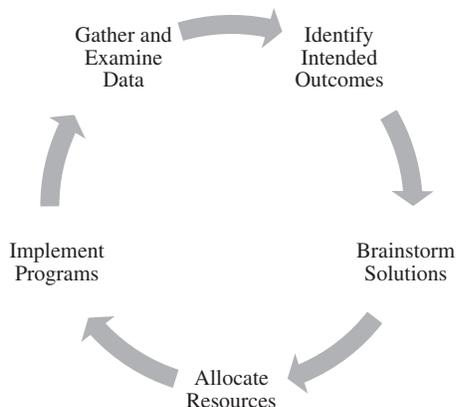


Figure 2 Model of path for understanding strengths and needs of educator preparation programs.

experienced in obtaining admittance, ways in which they were supported throughout their time as a student, and their success in graduating with a degree in teacher education (including the length of time from admission to credential). For each weakness that is identified, EPPs can develop targeted short- and long-term outcome goals as well as determine ways in which data will be collected and measured to evaluate progress toward intended outcomes. Some examples of targeted outcomes include increasing enrollment of diverse students, graduating more students, shortening the time from admission to credential, and increasing the passing rates on teacher licensure tests.

Brainstorm Solutions

Based on the data gathered and analyzed and the outcomes proposed for each weakness that was previously identified, we suggest that EPPs consider whether strategies and solutions implemented at other EPPs would work for their own institution, perhaps concentrating on one or more phases of the teacher candidate experience with the EPP. Additionally, we recommend the utilization of various EPP stakeholders (including students and teacher candidates from underrepresented groups) as sources of solutions. Further, some strategies highlighted in this paper or other sources that note links between the challenges and the intended outcomes should be considered as possible solutions.

Allocate Resources

Once appropriate solutions are identified, EPPs should determine what resources are needed and how to secure such resources. Resources might be monetary, including internal or external grants or reallocated funds, or might focus on hiring new staff, developing support mechanisms for success on basic skills and licensure tests, and altering job responsibilities.

Implement Programs

As programs are developed and implemented, new data should be generated and examined, and progress toward short- and long-term outcome goals should be examined periodically. Some EPPs were able to reflect on programs that were not having an impact, and this reflection helped free up resources for programs that might have a greater impact or determine ways to alter course to create the intended outcome.

Continual Examination

The model proposed here is intended for implementation at any time with continual data collection and analysis and with no fixed start or end point. Interim goals can be established to ensure that success is regularly evaluated. Ideally, additional data should be gathered continually, as it's important to determine whether data points for each new strategy are associated with improvement for the identified weaknesses. By creating a cycle of continual data, solutions, and outcomes examination, we believe EPPs will improve their ability to increase student diversity in the program and graduate these students as future teachers.

Future Research

In the coming years, it is likely that more EPPs will seek to diversify their pool of teacher candidates to meet accreditation standards; therefore, there will be more opportunities to understand the complexities and nuances of how EPPs make decisions about and implement these efforts. We recommend more research focused on exploring the perspective of the teacher candidates themselves to find out what they identify as the most difficult roadblocks to overcome and efforts by their programs that were most helpful in moving them toward graduation and certification. Additionally, research is warranted on examining the practices of alternative certification programs that tend to graduate highly diverse cohorts of teachers.

Potential for future research includes testing each of the above hypotheses through targeted research studies with both qualitative and quantitative methods, conducted by external researchers as well as EPP leadership teams. For example, an EPP could survey its students and staff to rate faculty members based on attributes of personal touch (e.g., caring advisor, face-to-face contact, proactive in keeping students on track) and then investigate whether faculty who are rated higher have students who persist and stay in the field of teaching. Longitudinal research could prove useful in tracking EPPs' implementation of programs and progress over time. In addition, research examining the decision-making process EPPs undertake when determining which programs to implement could also be beneficial to the field.

Discussion and Conclusions

Ultimately, there is no one size fits all solution to increasing the diversity in EPPs. We have sought to document many of the common challenges and varied solutions that EPPs have reported, but we found that there are few metrics to support what works in terms of attracting, admitting, supporting, and graduating students from underrepresented groups. What we notice from our research is that solutions across EPPs are highly contextualized responses to specific concerns and perceived roadblocks, such as geographic location, and characteristics of the university and EPP leadership such as priorities, motivation, and financial capacity to support recruitment efforts and provide funding for students in need. Missing is the documentation from the EPPs that would be helpful in determining what challenges they face and what strategies have been tried, and what results followed from the strategies. As researchers, we look for supporting evidence, and triangulation of the multiple streams of data (survey, phone interviews, and site visits) provided a sense of the challenges faced and strategies employed to meet them. But when we asked EPPs in phone interviews and site visits what data they collected so that they would know what strategies were working, we found little effort to quantify and document their efforts, whether successful or not.

It is important to recognize the limitations of the data upon which our findings are based. When we initially formulated and disseminated the survey, we intended it to be a mechanism to collect self-reported information that would help us understand EPP's challenges in recruiting, admitting, supporting and graduating students from underrepresented groups, and how they addressed those challenges. While we attempted to recruit as many states as possible, the survey focused on states and EPPs that had an interest in the topic. With slightly more than half of the states responding to the survey, we do not have the full range of possible responses to analyze. Further, while one or more EPPs in 29 states participated, we received no responses from EPPs in 21 states.

While our initial intention in collecting data was to share the information with states and EPPs, the growing interest in the survey results led us to conclude that additional data should be gathered through phone interviews and site visits, focused on survey participants but also including EPPs who had not participated in the survey. The goal was to expand and clarify what we learned from the survey through the additional conversations with EPP leaderships. Additional limitations of the data are detailed below.

1. In many cases, EPP leaders self-selected to participate in the surveys, phone interviews, and site visits. However, in other cases, states sent the survey link directly to all EPPs in the state and asked them to complete the survey, then followed up with EPPs to ensure they completed the surveys. This may have resulted in their feeling obligated to complete it, which might or might not have impacted their responses.
2. In both the survey and phone interviews, information is self-reported by a single person in EPP leadership, and other leaders within the EPP may hold different views of the strategies and challenges, depending on their roles and access to information. However, the advantage of conducting site visits included having an opportunity to hear multiple perspectives from people in different roles within the EPP.

3. A caveat to our report is that some survey responses are incomplete because not all EPPs provided responses to every open-ended question. For example, 27 of the 139 respondents did not provide responses to the question, “When you have had success in recruiting students from underrepresented groups to your EPP and supporting them through graduation and initial licensure, what factors appear to have made the most difference? (please list the 2–3 most important factors).” Thus, our findings do not include all survey participants’ perspectives in the open-ended responses. It is possible that those that did respond may be different in some ways from those that did not.
4. Finally, EPPs may have different understandings of success in diversifying their EPPs. Options of “very successful, successful, mixed results, unsuccessful, very unsuccessful” were given without offering survey takers an interpretation of the terms, leaving the meanings of these broad categories open to the personal interpretations of individual survey respondents. It is highly likely that one respondent’s “very successful” might be another respondent’s “successful,” and one respondent’s “mixed results” might be another respondent’s “unsuccessful,” and so forth. This absence of definitions makes it impractical to compare EPPs on their responses to that question, particularly because differences in local contexts and even geography likely play a role in how EPPs approach recruitment and how they evaluate their own success. For example, an EPP in a predominantly White, rural area may see recruitment of students from underrepresented groups as a greater challenge than an EPP in an urban location with a more diverse local population. Thus, while we present the breakdown of how many EPPs selected each of the five categories, we do not attempt to connect self-reported success with other variables within the data. Instead, data is presented without regard to how the EPPs categorized themselves along the success continuum we provided in the survey.

References

- American Association of Colleges for Teacher Education. (2013). *The changing teacher preparation profession: A report from AACTE's professional education data system (PEDS)*. Retrieved from https://secure.aacte.org/apps/rl/res_get.php?fid=145
- Bireda, S., & Chait, R. (2011). *Increasing teacher diversity: Strategies to improve the teacher workforce*. Washington, DC: Center for American Progress.
- Buzick, H., Collier, Z., & Lockwood, J. R. (2017, April). *Bridging racial divides in the educator workforce using large-scale assessment data from prospective teachers*. Paper presented at the annual meeting of the American Educational Research Association, San Antonio, TX.
- Carver-Thomas, D. (2018). *Diversifying the teaching profession: How to recruit and retain teachers of color*. Retrieved from the Learning Policy Institute website: <https://learningpolicyinstitute.org/product/diversifying-teaching-profession-report>
- Cherng, H.-Y. S., & Halpin, P. F. (2016). The importance of minority teachers: Student perceptions of minority versus White teachers. *Educational Researcher*, 45, 407–420. <https://doi.org/10.3102%2F0013189X16671718>
- Council for Accreditation of Educator Preparation. (2013). *CAEP accreditation standards*. Retrieved from <http://caepnet.org/standards/introduction>
- Dee, T. S. (2004). Teachers, race, and student achievement in a randomized experiment. *Review of Economics and Statistics*, 86, 195–210. <https://doi.org/10.1162/003465304323023750>
- Egalite, A. J., Kisida, B., & Winters, M. A. (2015). Representation in the classroom: The effect of own-race teachers on student achievement. *Economics of Education Review*, 45, 44–52. <https://doi.org/10.1016/j.econedurev.2015.01.007>
- Gershenson, S., Hart, C., Lindsay, C., & Papageorge, N. W. (2017). *The long-run impacts of same-race teachers* (IZA DP No. 10630). Bonn, Germany: IZA Institute of Labor Economics.
- Gitomer, D. H., Brown, T. L., & Bonett, J. (2011). Useful signal or unnecessary obstacle? The role of basic skills tests in teacher preparation. *Journal of Teacher Education*, 62, 431–445. <https://doi.org/10.1177%2F0022487111412785>
- Glennen, R. E. (1976). Intrusive college counseling. *The School Counselor*, 24(1), 48–50.
- Green, S. L., & Martin, D. (2018). Playing the game: Recruiting Black males in teaching. *Multicultural Learning and Teaching*, 13(1), 1–14. <https://doi.org/10.1515/mlt-2017-0005>
- Grissom, J. A., Rodriguez, L. A., & Kern, E. C. (2017). Teacher and principal diversity and the representation of students of color in gifted programs: Evidence from national data. *The Elementary School Journal*, 117(3), 396–422. <https://doi.org/10.1086/690274>
- Lindsay, C. A., & Hart, C. M. D. (2017). Exposure to same-race teachers and student disciplinary outcomes for Black students in North Carolina. *Educational Evaluation and Policy Analysis*, 39, 485–510. <https://doi.org/10.3102%2F0162373717693109>
- Mathison, S. (1988). Why triangulate? *Educational Researcher*, 17(2), 13–17. <https://doi.org/10.3102%2F0013189X017002013>
- Meyer, D. Z., & Avery, L. M. (2008). Excel as a qualitative data analysis tool. *Field Methods*, 21, 91–112. <https://doi.org/10.1177%2F1525822X08323985>
- Museus, S. D., & Ravello, J. N. (2010). Characteristics of academic advising that contribute to racial and ethnic minority student success at predominantly White institutions. *NACADA Journal*, 30(1), 47–58. <https://doi.org/10.12930/0271-9517-30.1.47>

- National Center for Education Statistics. (2017). *The condition of education 2017: Educational attainment of young adults*. Retrieved from https://nces.ed.gov/programs/coe/indicator_caa.asp
- Ose, S. O. (2016). Using Excel and Word to structure qualitative data. *Journal of Applied Social Science*, 10, 147–162. <https://doi.org/10.1177%2F1936724416664948>
- Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (6th ed.). Maidenhead, England: Open University Press.
- Saldaña, J. (2015). *The coding manual for qualitative researchers* (3rd ed.). Thousand Oaks, CA: SAGE.
- Scott-Clayton, J. (2015). The role of financial aid in promoting college access and success: Research evidence and proposals for reform. *Journal of Student Financial Aid*, 45(3), 7–22.
- Taie, S., & Goldring, R. (2017). *Characteristics of public elementary and secondary school teachers in the United States: Results from the 2015–16 National Teacher and Principal Survey. First look* (NCES 2017-070). Washington, DC: National Center for Education Statistics.
- U.S. Department of Education. (2016). *The state of racial diversity in the educator workforce*. Retrieved from <http://www2.ed.gov/rschstat/eval/highered/racial-diversity/state-racial-diversity-workforce.pdf>

Appendix A

Survey

Exploring Programs to Attract and Support Diverse Cohorts of Teachers

The lack of diversity in the nation’s teaching force is in part due to the lack of diversity in college students attracted to teaching majors and successfully completing teacher preparation programs. Colleges and universities must attack this issue head-on every day as they attempt to recruit, admit, and support teacher candidates from underrepresented groups—teacher candidates of color, English language learners and first-generation college students. Educational Testing Service, in keeping with our mission to “... support education and professional development for all people worldwide,” is seeking to identify efforts by educator preparation programs (EPPs) in colleges and universities to recruit, admit, and support teacher candidates from underrepresented groups. Our hope is to identify existing programs and to help disseminate information to other EPPs that are working to address the issue of diversity and the pipeline of future high-quality teachers. The following survey asks you about efforts at your institution to recruit, admit, and support teacher candidates, particularly candidates from underrepresented groups. Some of the questions are open-ended and many allow you to write in innovative programs your institution may have implemented. We want to collect information on as wide a range of programs as possible. The information you provide will not be attached to the name of your institution when reporting the results. We do ask you to consider possibly providing additional details later as we build case studies of some of the programs or interventions. Thank you for taking 20–30 minutes to complete this survey to help us disseminate information on the many efforts colleges and universities are undertaking to increase the diversity of the teacher pipeline.

1. What is the name of your college or university?

2. In general, how successful has your college or university been in attracting or recruiting candidates from underrepresented groups interested in teaching (“underrepresented groups” includes teacher candidates of color, English language learners, and first-generation college students)?

- Very successful
- Successful
- Mixed results
- Unsuccessful
- Very unsuccessful

3. What factors do you believe have contributed to any difficulties your college or university has had in attracting or recruiting underrepresented candidates?

4. Does your college or university have outreach efforts to attract or recruit teacher candidates from underrepresented groups?

- Yes
 No

5. If Question 4 is “Yes,” what types of efforts are currently in place? (select all that apply)

- Community-based outreach (civic groups, churches, etc.)
 Information sessions at local high schools
 “Teacher academies” at local high schools for students interested in teaching
 Summer programs for high school students interested in teaching
 Open houses for incoming freshmen
 Introductory or exploratory course to familiarize students with education majors
 Targeted academic advising for students interested in teaching to prepare them to enter your EPP
 Summer programs for students on your campus to attract potential candidates to teaching
 Other— Please describe: _____*

6. If Question 4 is “Yes,” how successful have these efforts been in producing students who go on to apply to your EPP?

- Very successful
 Successful
 Mixed results
 Unsuccessful
 Very unsuccessful

7. In what ways have your efforts been less than successful in attracting student applicants, especially applicants from underrepresented groups, who are accepted to your EPP? (select all that apply)

- Students applying have deficiency in core academic skills (reading, writing, mathematics)
 Students have difficulty in general education courses prior to applying to the EPP
 Students have difficulty passing one or more component of the *Praxis*[®] Core test or the academic skills test used at your college or university
 Other— Please describe: _____*

8. Does your college or university examine available data on incoming freshmen who indicate they are interested in a degree in education to predict if they will (a) be admitted to the EPP and (b) graduate from the EPP?

- Yes
 No

9. If Question 8 is “Yes,” can you describe the data used to predict future success?

10. Do you offer academic assistance to students interested in education majors to meet the requirements set for the Praxis Core test or the academic skills test used at your college or university?

- Yes
 No

11. If Question 10 is “Yes,” how do you identify students in need of academic assistance? (select all that apply)

- Poor entrance or placement scores when they enter the college or university
 Poor grades in general education courses prior to applying to the EPP
 Not passing one or more component of the Praxis Core test or the academic skills test used at your college or university
 Other— Please describe: _____*

12. If Question 10 is “Yes,” what types of academic assistance do you offer? (select all that apply)

Guidance and access to online test prep materials

Diagnostic testing to identify strengths and weaknesses

Credit-bearing courses in core subjects (reading, writing, or mathematics) to prepare for the Praxis Core test or the academic skills test used at your college or university

Test preparation courses for the Praxis Core test or the academic skills test used at your college or university

Study groups organized by the EPP

Other — Please describe: _____*

13. For students having difficulty passing a particular component of the Praxis Core test or the academic skills test used at your college or university, is individual or group tutoring available?

Yes, individual tutoring is available

Yes, group tutoring is available

Yes, both individual and group tutoring is available

No, tutoring is not available

14. Institutions are developing a range of creative strategies for recruiting and supporting students from underrepresented groups through graduation and initial teacher licensure. Please briefly describe any strategies that your institution has been trying out that appear promising.

15. When you have had success in recruiting students from underrepresented groups to your EPP and supporting them through graduation and initial licensure, what factors appear to have made the most difference? (please list the 2–3 most important factors)

16. ETS is seeking to collaborate with EPPs that are developing and implementing programs and interventions to attract, admit, and support teacher candidates from underrepresented groups. Would you be interested in working with ETS to document and disseminate information on existing programs and interventions?

Yes

No

17. If Question 16 is “Yes,” what is your name and current title?

18. If Question 16 is “Yes,” what would be the best email address to reach you?

Thank You!

Thank you for taking our survey. Your response is very important to us.

Appendix B

States in Which at Least One Educator Preparation Program Responded to Survey

Arkansas
California
Connecticut
Delaware
Florida
Hawaii
Illinois
Kentucky
Massachusetts
Maryland
Michigan
Missouri
Mississippi
North Carolina
North Dakota
New Jersey
New Mexico
Nevada
Oregon
Pennsylvania
South Carolina
South Dakota
Tennessee
Texas
Virginia
Vermont
Wisconsin
West Virginia

Appendix C

Descriptive Data for Survey Participants

Descriptive data	Frequency	Percentage
Census region		
Northeast	32	23.0
Midwest	14	10.1
South	84	60.4
West	9	6.5
Total	139	100.0
Sector		
Public, 4-year or above	69	49.6
Private not-for-profit, 4-year or above	67	48.2
Public, 2-year	3	2.2
Total	139	100.0
Locale (consolidated)		
City	74	53.2
Suburb	33	23.7
Town	27	19.4
Rural	5	3.6
Total	139	100.0
Carnegie (consolidated)		
Information not available	4	2.9
Doctoral/research universities	35	25.2
Masters colleges and universities	62	44.6
Baccalaureate colleges	28	20.1
Associate colleges	3	2.2
Theological seminaries and other specialized faith-related institutions	4	2.9
Other separate health profession schools	1	0.7
Tribal colleges	2	1.4
Total	139	100.0
Institution size		
Under 1,000	14	10.1
1,000 – 4,999	56	40.3
5,000 – 9,999	26	18.7
10,000 – 19,999	16	11.5
20,000 and above	27	19.4
Total	139	100.0
Minority status		
Non-Minority-Serving Institutions	111	79.9
Minority-Serving Institutions	28	20.1
Total	139	100.0
Minority status type		
None	111	79.9
Asian American and Native American Pacific Islander-Serving Institutions	3	2.2
Asian American Native American Pacific Islander-/Hispanic-Serving Institutions	1	0.7
Historically Black Colleges and Universities	8	5.8
Hispanic-Serving Institutions	11	7.9
Native American-Serving Nontribal Institutions	1	0.7
Predominantly Black Institutions	2	1.4
Tribal Colleges and Universities	2	1.4
Total	139	100.0
Barron's selectivity		
Most competitive	6	4.3
Highly competitive	6	4.3
Very competitive	23	16.5
Competitive	54	38.8
Less competitive	25	18.0
Noncompetitive	3	2.2
Not included	22	15.8
Total	139	100.0

Appendix D

Successful or Very Successful Educator Preparation Program Phone Interview Protocol

Time Estimate: 45–60 minutes

Section 1—Introduction (3 minutes)

Thank you so much for your agreement to participate in our study today. This call is not being audio-recorded, but I am taking typed notes as we speak about your responses. Is that OK with you?

As you know, the overall goal of this study is to collect information from EPP programs such as yours about your success in attracting, retaining, and graduating diverse teacher education candidates. Today's interview will take no more than 1 hour. We appreciate your expertise and we are excited to hear your thoughts today.

If at any time you have any questions or want to discontinue your participation, please let me know. And also just a reminder as stated in your consent form that we will not name the participating programs in our reports and will protect the anonymity of respondents.

Last (date/month/find this in column B of survey) you completed an online survey from ETS that asked some basic questions about the success of your teacher preparation programs in attracting and graduating diverse teacher candidates, and today I'd like to ask you some follow-up questions to find out more about the programs at your school.

Section 2 (25 minutes)

1. I'd like to start today by hearing about your teacher preparation programs/department. What can you tell me about your program that I wouldn't necessarily read on your website?
2. In the survey, you noted that your programs have been successful in attracting, recruiting, and retaining candidates from diverse ethnic backgrounds who are interested in teaching. You noted ____, ____, and ____ (fill in from survey) as some of the ways your program finds success. Can you tell me about those efforts?
 - a. Probe: Make sure they describe all efforts they noted in the online survey. Use probes for each effort such as:
 - How do you define success for this effort?
 - Can you tell me more about that?
 - What does that look like?
 - What motivated that effort to be implemented? When was it implemented?
 - Who leads that effort on campus?
 - Who sustains it during the semester?
 - How is this effort funded?
 - How have these efforts changed over time, and why have they changed?
 - Why do you think that effort contributes to your students' successes?
3. Is there anything else your school does that you would attribute this success to that wasn't captured on the survey?
4. In terms of teacher certification areas, are there any for which the programs you just mentioned are more successful than others? To what do you attribute this?
 - a. Probe: math and science/STEM areas
5. Can you tell me about the particular experiences of a recent minority student in your program who was able to find success by taking advantage of opportunities provided by the university? (Programs, mentoring, organizations/student groups, strategies, etc.)
 - a. Probe: What were their specific challenges and how did these programs help them overcome them?
6. Now that I know more about a minority student who has had success, can you think of students who were less successful and some of the reasons why?

Section 3—Questions About Successful Strategies (20 minutes)

Other research studies tell us that there are various hurdles to overcome in order to become a teacher, and these are especially difficult for candidates of color. We've found in the research and from other EPPs some common strategies that work, so I want to ask you about those specifically as they might exist in your program. (Note: Some of their responses to the questions below might overlap with their responses to Question 3 above.)

7. What role do personal relationships with advisors, faculty, or other students play in the success of your diverse candidates?
 - a. Probe: Can you tell me about a student success story that jumps out in your mind?
8. Do you provide individualized, one-on-one support for academics and other aspects of campus life for your students? If yes, can you tell me about that?
9. Are there any mentoring programs, individualized attention, or other types of personal touches that your programs offer to students to help them be successful throughout their programs?
 - a. Probe: How are students identified for such attention (i.e., Are they earmarked based on test scores or GPA, or do they have to seek it out?)
10. At what points in your program do you identify student weaknesses/where they are struggling? Do you provide in-class support or tutorials to help them be successful? If yes, what does it look like?
11. What kinds of financial support do you provide through your programs, such as scholarships, financial aid, jobs, assistantships, etc.?
 - a. Probe: A big hurdle for economically diverse candidates can be their semesters of student teaching, when they're unable to work as many hours at a paying job because of their teaching commitments. Do you do anything unique to support students during this period?
12. What was the catalyst for change that led to these programs? How many years have these changes been implemented, and what kinds of improvements have you noted? What type of evidence are you using to support this success?
13. What do you identify as some challenges your students face while in your programs?
14. Where along the pathway to teacher certification do you see the greatest difficulty or hurdle for your students?
15. If funding was not an issue, what types of programs do you see a need for that would add to the success of diverse teacher candidates in your programs?

Section 4—Closing

That's all the questions I have for you today. Do you have any questions for me?

As I said, your responses will remain anonymous and your name and the name of your college/university will never be shared. Would it be OK to contact you again if we need any clarity or have any questions?

Thank you for your time today! Goodbye.

Appendix E

Mixed or Unsuccessful Phone Interview Protocol

Time Estimate: 45–60 minutes

Section 1—Introduction (3 minutes)

Thank you so much for your agreement to participate in our study today. This call is not being audio-recorded, but I am taking typed notes as we speak about your responses. Is that OK with you?

As you know, the overall goal of this study is to collect information from EPP programs such as yours about your efforts in attracting, retaining, and graduating diverse teacher education candidates. Today's interview will take no more than 1 hour. We appreciate your expertise and we are excited to hear your thoughts today.

If at any time you have any questions or want to discontinue your participation, please let me know. And also just a reminder as stated in your consent form that we will not name the participating programs in our reports and will protect the anonymity of respondents.

Last (date/month/find this in column B of survey) you completed an online survey from ETS that asked some basic questions about the success of your teacher preparation programs in attracting and graduating diverse teacher candidates, and today I'd like to ask you some follow-up questions to find out more about the programs at your school.

Section 2 (25 minutes)

1. I'd like to start today by hearing about your teacher preparation programs/department. What can you tell me about your program that I wouldn't necessarily read on your website?
2. In the survey, you noted that your programs have (been unsuccessful/had mixed results) in attracting, recruiting, and retaining candidates from diverse ethnic backgrounds who are interested in teaching. Before we get into the specifics of your programming, can you tell me what you mean by (unsuccessful/mixed results)? (i.e., What led you to check that box in the survey?)
3. You noted ____, ____, and ____ (fill in from survey) as some of the ways your program has made an effort to help diverse students. Can you tell me about those efforts?
 - a. Probe: Make sure they describe all efforts they noted in the online survey. Use probes for each effort such as:
 - How do you define the lack of success for this effort?
 - Can you tell me more about that?
 - What does that look like?
 - What motivated that effort to be implemented? When was it implemented?
 - Who leads that effort on campus?
 - Who sustains it during the semester?
 - How is this effort funded?
 - How have these efforts changed over time, and why have they changed?
 - Why do you think that effort wasn't successful/had mixed results?
4. Is there anything else your school does toward efforts to diversity that wasn't captured on the survey?
5. In terms of teacher certification areas, are there any for which the programs you just mentioned are more successful than others? To what do you attribute this?
 - a. Probe: math and science/STEM areas
6. Can you tell me about the particular experiences of a recent minority student in your program who was able to find success by taking advantage opportunities provided by the university? (Programs, mentoring, organizations/student groups, strategies, etc.)
 - a. Probe: What were their specific challenges and how did these programs help them overcome them?

7. Now that I know more about a minority student who has had success, can you think of students who were less successful and some of the reasons why?

Section 3—Questions About Successful Strategies (20 minutes)

Other research studies tell us that there are various hurdles to overcome in order to become a teacher, and these are especially difficult for candidates of color. We've found in the research and from other EPPs some common strategies that work, so I want to ask you about those specifically as they might exist in your program. (Note: Some of their responses to the questions below might overlap with their responses to Question 4 above.)

8. What role do personal relationships with advisors, faculty, or other students play for your diverse candidates?
 - a. Probe: Can you tell me about a student success story that jumps out in your mind?
9. Do you provide individualized, one-on-one support for academics and other aspects of campus life for your students? If yes, can you tell me about that?
10. Are there any mentoring programs, individualized attention, or other types of personal touches that your programs offer to students to help them be successful throughout their programs?
 - a. Probe: How are students identified for such attention (i.e.: Are they earmarked based on test scores or GPA, or do they have to seek it out?)
11. At what points in your program do you identify student weaknesses/where they are struggling? Do you provide in-class support or tutorials to help them be successful? If yes, what does it look like?
12. What kinds of financial support do you provide through your programs, such as scholarships, financial aid, jobs, assistantships, etc.?
 - a. Probe: A big hurdle for economically diverse candidates can be their semesters of student teaching, when they're unable to work as many hours at a paying job because of their teaching commitments. Do you do anything unique to support students during this period?
13. What was the catalyst for change that led to these programs? How many years have these changes been implemented, and what kinds of improvements have you noted? What type of evidence are you using to support this success? Have the programs been more/less successful over time? Why do you think that is?
14. What do you identify as some challenges your students face while in your programs?
15. Where along the pathway to teacher certification do you see the greatest difficulty or hurdle for your students?
16. If funding was not an issue, what types of programs do you see a need for that would add to the success of diverse teacher candidates in your programs?

Section 4—Closing

That's all the questions I have for you today. Do you have any questions for me?

As I said, your responses will remain anonymous and your name and the name of your college/university will never be shared. Would it be ok to contact you again if we need any clarity or have any questions?

Thank you for your time today! Goodbye.

Appendix F

Site Visit Topics by Participant

Topics for In-Person Site Visit Interviews/Focus Groups—Teacher Diversity Study

Interviews may be conducted one-on-one or with small groups of participants from one or more groups as noted below. If a phone interview has already been conducted with the EPP, site-specific information will help with determining the specific topics. Other relevant details collected from university websites may also contribute to determining areas of focus.

Educator Preparation Program Leadership and Faculty

- Practices/outreach efforts used to inform prospective students about teaching careers and activities/offers to attract them to the program
- Ways that students are identified as interested in teaching (i.e., student mentions they might be interested in teaching to their academic/guidance counselor)
- How students are supported to ensure retention in the program and successful completion

Student Advisors/Faculty Mentors

- What role they play in recruiting, retaining, supporting and graduating diverse teaching candidates, and why they are in that role
- Hurdles they notice underrepresented students facing

Future Teachers' Club Member/Leader

- Experience in the EPP program
- Why they're in the group/how they came into a leadership role/what they get from participating
- Work they do as part of the club
- Other EPP/campus programs they participate in
- Their experience from HS to college—specific hurdles they've overcome, if any, and what factors helped them overcome the hurdles
- Experience with faculty mentors/student advisors on campus or taking advantage of other identified support services

Faculty in Educator Preparation Program Hard-to-Pass Subject Areas Related to Core (Math)

- Challenges noticed in general and with underrepresented groups
- Strategies used to provide targeted support to struggling students from underrepresented groups
- Test preparation courses/tutors/other support

Educator Preparation Program Data Coordinator

- Current and historic data on acceptance/pass rates on Praxis Core
- Current and historic data on enrollment by race/ethnicity in EPP
- Current and historic data on graduation rates of underrepresented students
- Any data collected related to implementation of specific programs designed to recruit, retain, support, or graduate underrepresented teaching candidates

Examples of Coded Sample Responses for Selected Survey Questions

Question: What factors do you believe have contributed to any difficulties your college or university has had in attracting or recruiting underrepresented candidates?

Code	Survey response
Financial: Lack of funds, no financial assistance, high tuition	<ul style="list-style-type: none"> • Insufficient financial support for students entering teaching. • Lack of scholarships for students from underrepresented groups.
Lack of interest in teaching (pay, prestige, other options)	<ul style="list-style-type: none"> • Terrible press regarding teaching as a career with constant focus on “getting bad teachers out”; terrible pay in relation to the amount of education it takes to be a teacher. • Students who come from underrepresented groups who attend our private institution with high tuition costs often look for majors and programs that will lead to a more lucrative profession/career.
Difficulty passing tests/meeting requirements	<ul style="list-style-type: none"> • Difficulty second language learners and underrepresented minorities have in passing the (required test), which is based on a Eurocentric content world view. • Teacher licensure tests may present entry barrier to teaching for underrepresented students.
Lack of support/mentoring	<ul style="list-style-type: none"> • Lack of support services within the School of Ed. for academically challenged candidates. • Support services, more full-time equivalents needed for advising.
Lack of recruitment	<ul style="list-style-type: none"> • Lack of recruitment resources due to budget cuts. • Noneffective admissions recruiting.
Lack of partnerships with K-12 and community colleges	<ul style="list-style-type: none"> • Less collaboration with school districts with diverse students than we might want to have • Access to candidates at community colleges has been difficult.
Lack of diversity at the institution (faculty)	<ul style="list-style-type: none"> • Low number of faculty from underrepresented groups • Not enough minority faculty represented in the department and in general not all faculty members are intentionally recruiting underrepresented candidates.
Lack of diversity at the institution (students)	<ul style="list-style-type: none"> • The makeup of the general population makes it difficult, as the pool of diverse candidates is already small.
Lack of diversity at the institution (geographic location/local population)	<ul style="list-style-type: none"> • Our service area is not diverse in population. • We are located in a rural community in a rural region with few underrepresented groups.
Marketing	<ul style="list-style-type: none"> • College travel budget, program visibility. • Competition, location.
Lack of knowledge of the program/institution	<ul style="list-style-type: none"> • Lack of knowledge by students/parents that our university exists, that it is affordable and accessible; not a diverse campus. • Lack of knowledge of the program.
Absence of role models in the field of education	<ul style="list-style-type: none"> • Students of color don’t see themselves in a teaching career because they themselves have not had good experiences in school nor have they identified with teachers that look like them. • Absence of role models in the field (i.e., few teachers of color); minorities not encouraged to be teachers.

Question: Institutions are developing a range of creative strategies for recruiting and supporting students from underrepresented groups through graduation and initial teacher licensure. Please briefly describe any strategies that your institution has been trying out that appear promising.

Code	Survey response
Strategies for recruiting students from diverse backgrounds	<ul style="list-style-type: none"> • Faculty hosts a conference every semester for middle school and high school students from diverse backgrounds. • Through the Teacher Academy Program, students interested in education and teaching are identified during 8th grade; program work is through a collaboration relationship between the university and a local high school.
Instructional support strategies	<ul style="list-style-type: none"> • We have individual students who have succeeded in taking the test work with another peer who hasn't. We are also in the process of putting study materials and resources on an online platform for easy access. • We have a student tutoring center where students can go and get assistance from both peer tutors and professional tutors.
Advising, mentoring, other support	<ul style="list-style-type: none"> • Conscientious advising to students to keep up GPA, achieve academic success in courses, have timelines to take tests, monitor grades, etc. • Directly supporting individuals through the application and financial aid process, providing info regarding scholarships available.
Targeted learning & support communities	<ul style="list-style-type: none"> • We provide support for a student-led group. We have renewed our focus on mentoring and have hired academic advisors from underrepresented groups. We have started a mentoring group that includes current teacher education students, faculty, staff, and community educators; we provide more support for teacher licensure testing. • We have a student organization for teacher candidates who are from underrepresented groups and interested in teaching. This organization provides an opportunity for candidates to network with each other and to receive support from the faculty advisor who promotes professional development and success in the university classroom.
Grow your own pipeline programs	<ul style="list-style-type: none"> • Instituted a new scholarship intended to attract underrepresented students; and intentional pipeline projects with urban counties • Customized grow your own teacher pipeline strategies with various school districts around our university
Financial assistance	<ul style="list-style-type: none"> • We have developed partnerships with several charter schools with first generation students. These students have opportunities to visit the campus and have lots of help in terms of getting information on finances. • Scholarships and other financial aid opportunities such as the bilingual education scholarship, the TEACH grant, department and college scholarships from donations, etc.

Suggested citation

Goe, L., & Roth, A. (2019). *Diversifying the teacher workforce: Evidence from surveys, phone interviews, and site visits with educator preparation programs* (Research Report No. RR-19-38). Princeton, NJ: Educational Testing Service. <https://doi.org/10.1002/ets2.12274>

Action Editor: Heather Buzick

Reviewers: Jamie Mikeska and Richard Tannenbaum

ETS and the ETS logo are registered trademarks of Educational Testing Service (ETS). All other trademarks are property of their respective owners.

Find other ETS-published reports by searching the ETS ReSEARCHER database at <http://search.ets.org/researcher/>