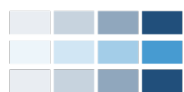


The Special Education Teacher Pipeline in Pennsylvania: Year 2 Report

Roddy Theobald
Equia Aniagyei-Cobbold
Marcy Stein

July 2024

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Longitudinal Data in Education Research



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Pipeline in Pennsylvania:
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Roddy Theobald

American Institutes for Research / CALDER

Equia Aniagyei-Cobbold

American Institutes for Research / CALDER

Marcy Stein

University of Washington Tacoma

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1400 Crystal Drive, 10th Floor, Arlington, VA 22202
202-403-5796 • www.caldercenter.org

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Abstract

This report provides formative data about the implementation of projects associated with the Pennsylvania Bureau of Special Education’s Attract, Prepare, and Retain (APR) efforts during the 2023–24 school year. We surveyed or interviewed students and educators participating in six such projects: Developing Future Special Educators Grants, APR Mentoring Project, Networking and Learning Communities, Learning Institutes, Accelerated Programs for PK–12 Special Education Teacher Certification Grant, and American Sign Language programs. For the first three APR projects, these findings build on data from the first year of project implementation in the 2022–23 school year. And for the latter three projects that were introduced in 2023–24, these data provide early evidence about how participants view their experiences with these projects.

Executive Summary

This report summarizes findings from the second year of a long-term research project on the special education teacher pipeline in Pennsylvania and projects associated with the Pennsylvania Bureau of Special Education’s Attract, Prepare, and Retain (APR) efforts. In this executive summary, we highlight seven key findings from the second year of the project.

Special Education Personnel Attrition in Pennsylvania

Key finding 1. Attrition rates of special education personnel in Pennsylvania have historically been higher than general education personnel across all special education job categories.

In a companion paper to this report (Gilmour et al., 2024), we calculated district attrition rates for different categories of special education personnel in Pennsylvania over the past decade. Attrition rates for *all categories* of special education personnel were higher than general education personnel *in every year of data*, and they have generally been highest for special education administrators and school psychologists.

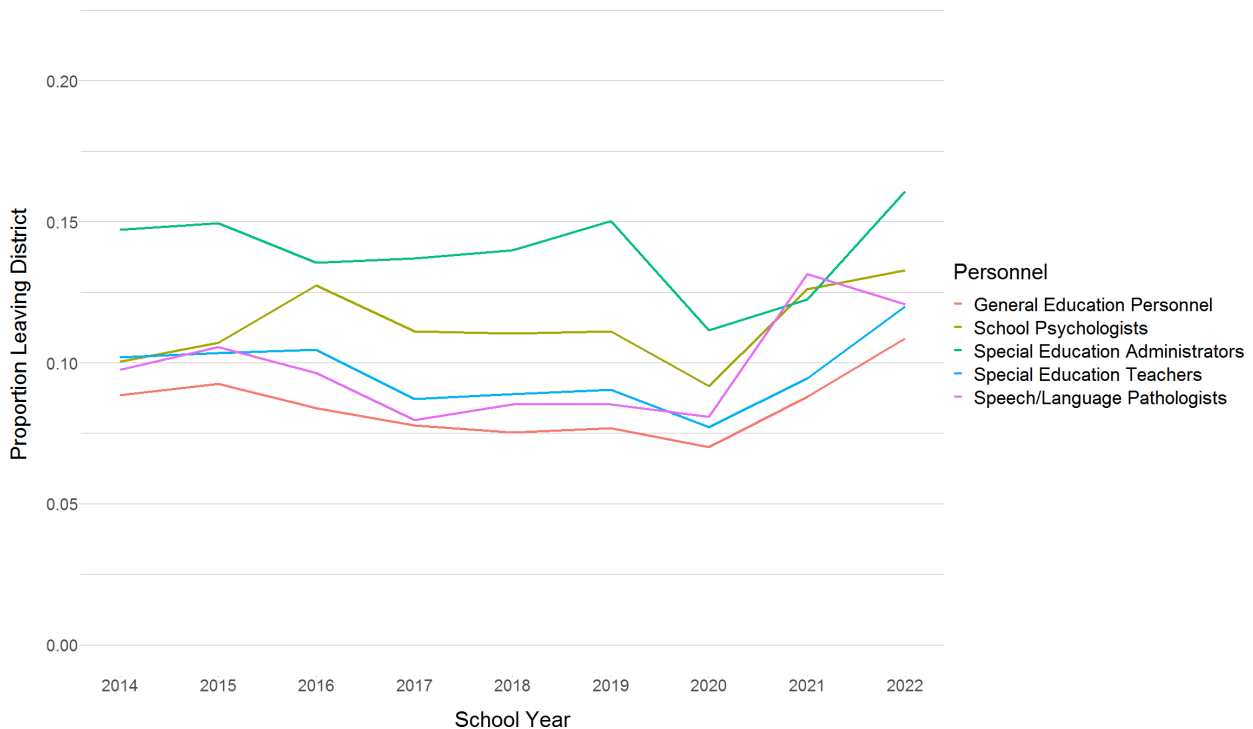


Figure 1.1. District attrition over time for select special education personnel

Key finding 2. Attrition rates of Black special education personnel in Pennsylvania have been higher than for White special education personnel, even controlling for district factors.

In Gilmour et al. (2024), we also show that Black special educators are considerably more likely to leave their districts than White special educators in the state. Although part of this difference can be explained by the fact that Black special educators disproportionately work in districts with higher overall attrition rates, we estimate that over this time period, Black special education personnel were 2.1 percentage points more likely to leave than otherwise observably similar White special education personnel *in the same district*.

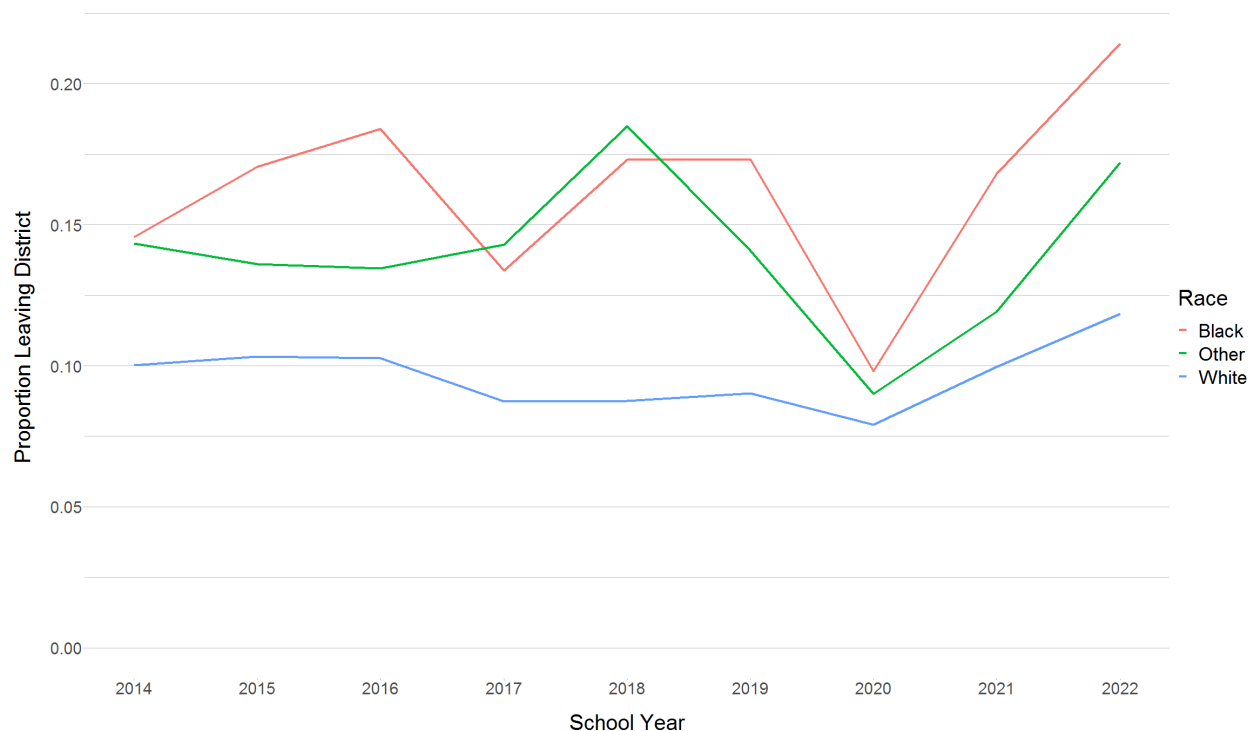


Figure 1.2. District attrition by race over time for all special education personnel

Participant Perceptions of APR Projects

Key finding 3. Consistent with findings from 2022–23, students participating in the Developing Future Special Educators Grant in 2023–24 were more likely to express an interest in a career in special education after their participation than before they enrolled in the program.

We surveyed student participants before and after they participated in programs developed through the Developing Future Special Educators Grant. This grant was intended to

engage secondary/postsecondary students in working with students with disabilities to inspire them to pursue a career as a special educator. Thirty-seven percent of survey respondents reported an interest in pursuing a career in special education after participating in one of these opportunities, compared to 30% of respondents surveyed before participating.

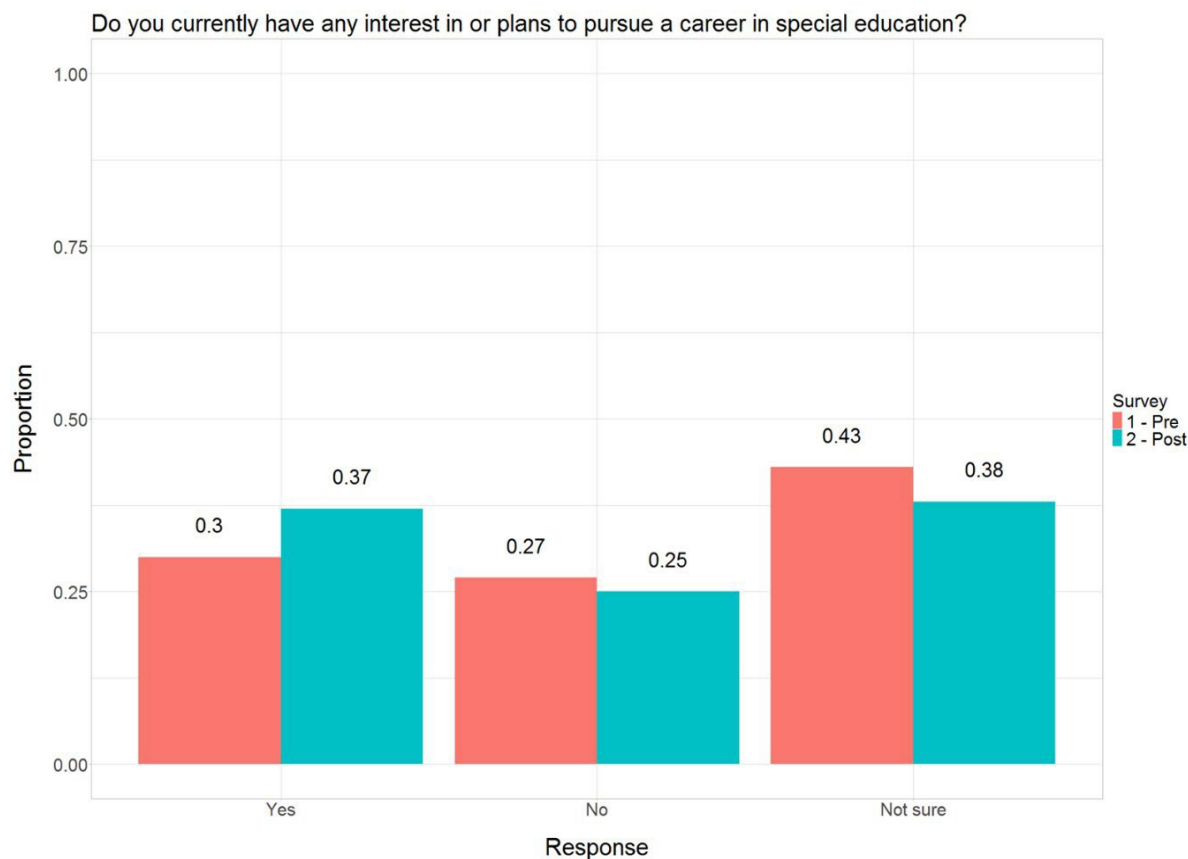


Figure 1.3. Participants’ reported interest in or plans to pursue a career in special education

Key finding 4. Consistent with findings from 2022–23, special educators participating in the APR Mentoring Project in 2023–24 say the program improved mentees’ professional development.

We surveyed mentors and mentees who participated in the APR Mentoring Project for school psychologists, special education administrators, special education teachers, and teachers of the deaf and visually impaired. Of the survey respondents, 95% of mentees and 94% of mentors “agreed” or “strongly agreed” that the program positively impacted the professional development of the mentee.

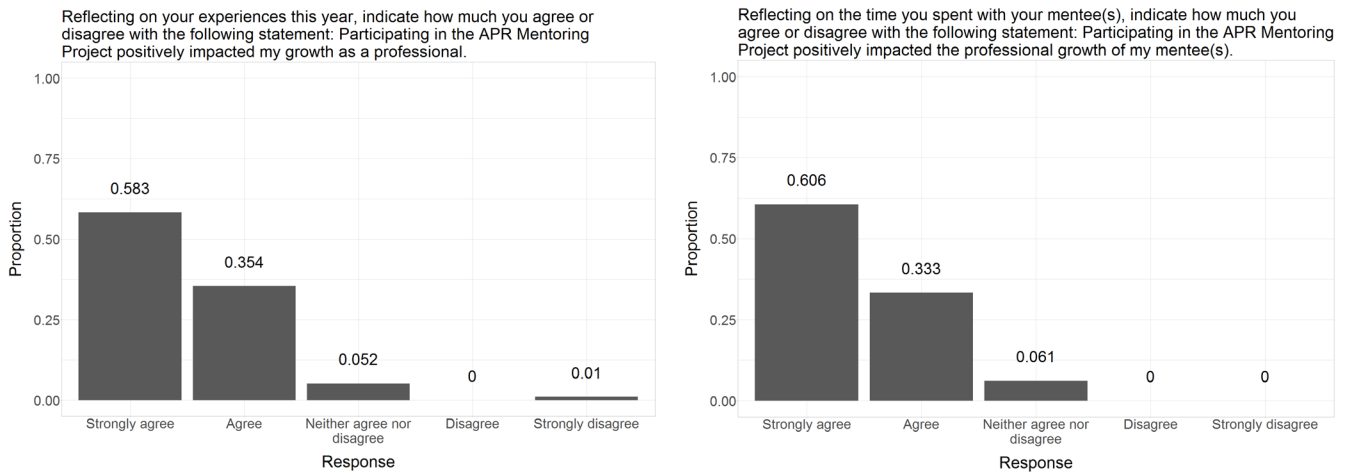


Figure 1.4. Mentees’ (left panel) and mentors’ (right panel) perceptions of program impact

Key finding 5. Most participants in the APR Learning Institutes and Networking and Learning Communities reported that the session they attended was relevant to their needs.

We surveyed participants in APR Learning Institutes and Networking and Learning Communities sessions intended to connect special education personnel across the state. Among survey respondents from these programs, 95% of participants in APR Learning Institutes and 94% of participants in Networking and Learning Communities sessions “agreed” or “strongly agreed” that the session they attended was relevant to their needs.

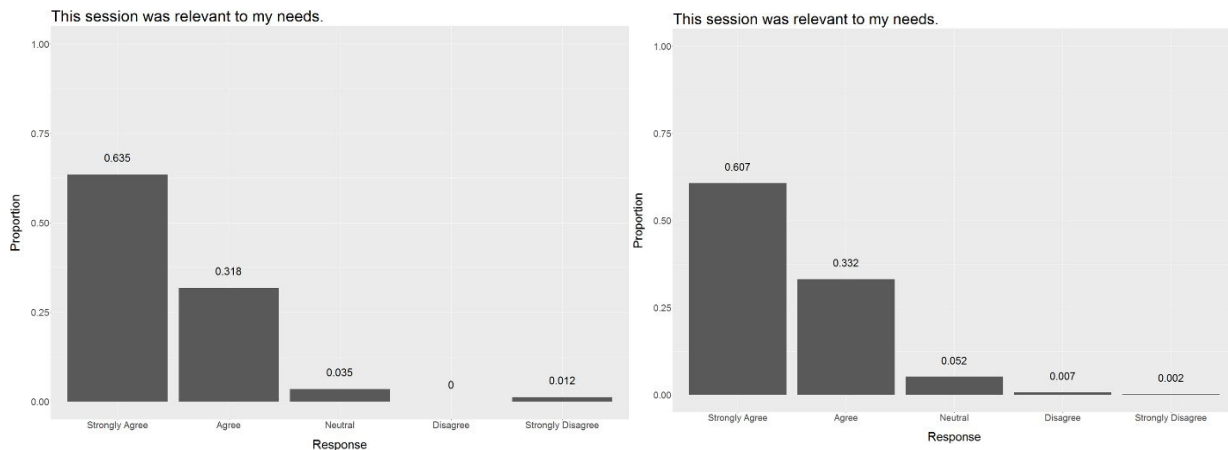


Figure 1.5. APR Learning Institutes (left panel) and APR Networking and Learning Communities (right panel) participant perceptions of session relevance

Key finding 6. Grantees of Accelerated Program for PK–12 Special Education Teacher Certification varied in their program structures and coaching opportunities for candidates.

We collected data on participants in Pennsylvania’s Accelerated Program for PK–12 Special Education Teacher Certification Grant from two sources: fourth-quarter reports submitted to the Pennsylvania Bureau of Special Education, and interviews with grant coordinators at each of the 15 participating institutions of higher education (IHEs). Reporting data showed that more than 200 candidates participated in these programs during the 2023–24 school year. Interviewers noted that the terms *mentor*, *supervisor* and *coach* often were used interchangeably by grant coordinators. As a result, the benefits of mentoring were difficult to determine because mentoring and supervision sometimes were conflated.

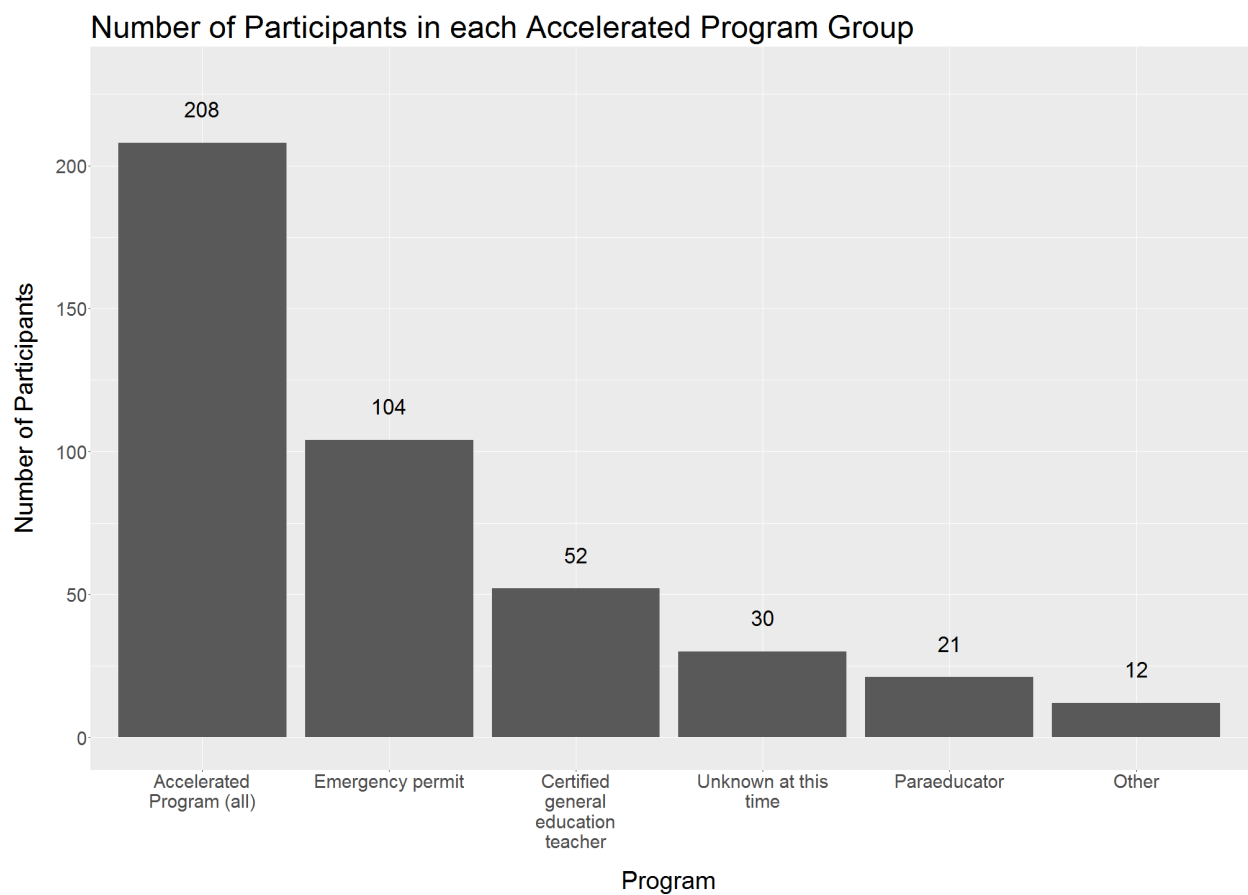


Figure 1.6. Participants in Accelerated Program for PK-12 Special Education Teacher Certification Grant

Key finding 7. Students participating in the World of Learning (WOL) American Sign Language program were less likely to express an interest in using American Sign Language (ASL) in a future career after their participation than before they enrolled in the program.

Finally, we surveyed students who participated in the WOL ASL program in high schools across Pennsylvania. In contrast with the findings for the Developing Future Special Educators Grant survey, students that participated in this program were actually *less likely* to indicate that they plan to use ASL in a future career after participating in the program (18%) than before participating (22%).

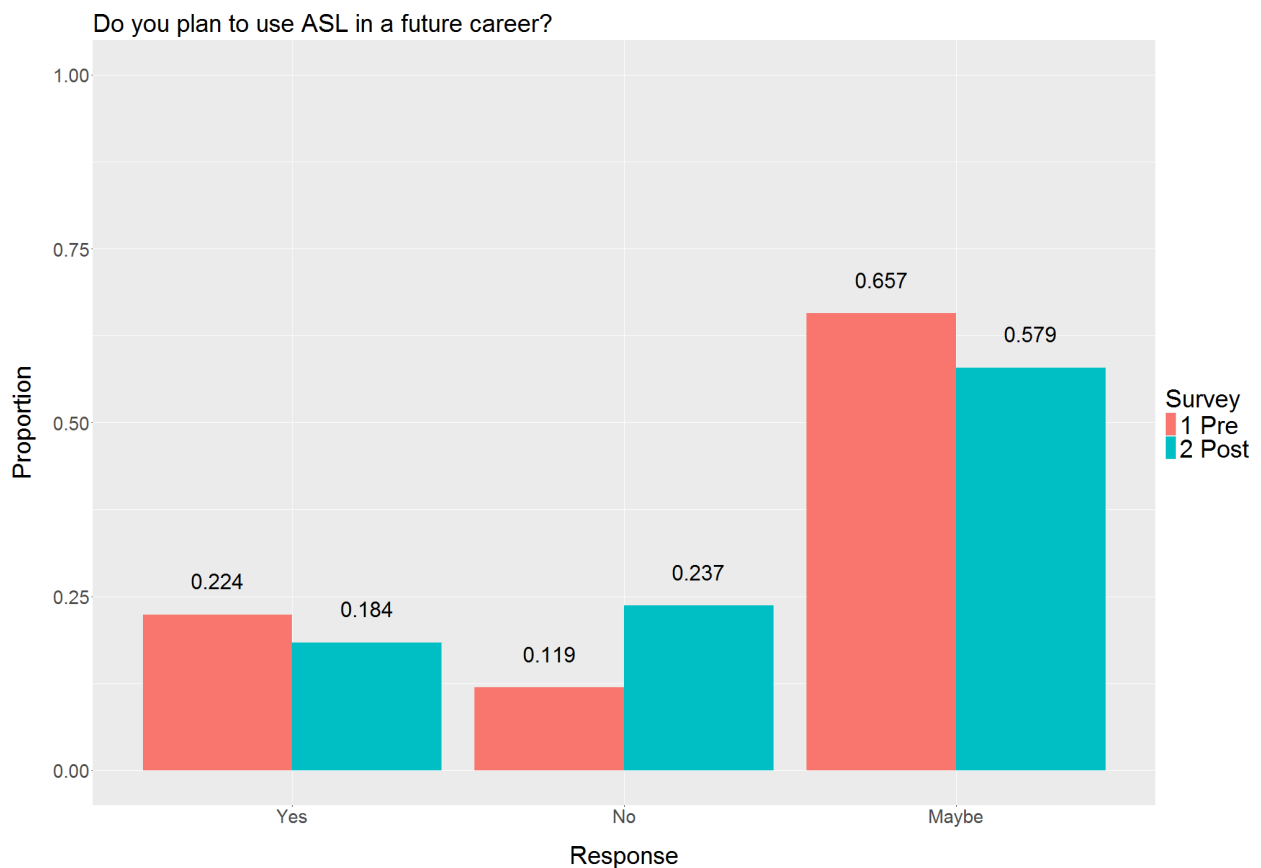


Figure 1.7. Participants' reported plans to use ASL in a future career

Developing Future Special Educators Grant

As described in the Year 1 report (Theobald et al., 2023), the goal of the Developing Future Special Educators Grant is to attract secondary and postsecondary students to pursue careers in special education by providing experiential learning opportunities (ELOs) aligned to special education career pathways. Specifically, grants were awarded to applicants who established or expanded ELOs designed to engage students in authentic ways to support, assist, and/or work with students with disabilities. ELOs also included dual-enrollment courses in special education, field trips to visit colleges, and presentations provided by special education personnel. As in the first year of the project, grantees received professional development and technical assistance. This year's topics were focused on career pathways as a means to instruct and prepare their secondary and postsecondary students on working with students with disabilities.

To provide formative data on participants' perspectives of their experience in these ELOs, we surveyed students both before and after their participation. IRB approval for the surveys was provided by the American Institutes for Research (AIR), and surveys were distributed through grant coordinators at each program. We received survey responses from 754 students before their participation in the program and 515 students after participation. Because we did not collect personally identifiable information about program participants under the terms of our IRB approval, we cannot identify which students may have dropped out of the program before the postsurvey and which students simply did not respond to the postsurvey. That said, an important limitation to the remainder of the formative analysis in this section is that postsurvey respondents may not be representative of all students who participated in these ELOs or who responded to the presurvey.

In the presurvey, we asked students why they participated in the ELO at their school. As shown in Figure 2.1, about 57% of respondents said they participated because the activity was interesting to them, about half reported that they want to find out more about working in special education, about 40% said that someone in the school recommended the program to them, and 17% said they needed the credits for school.

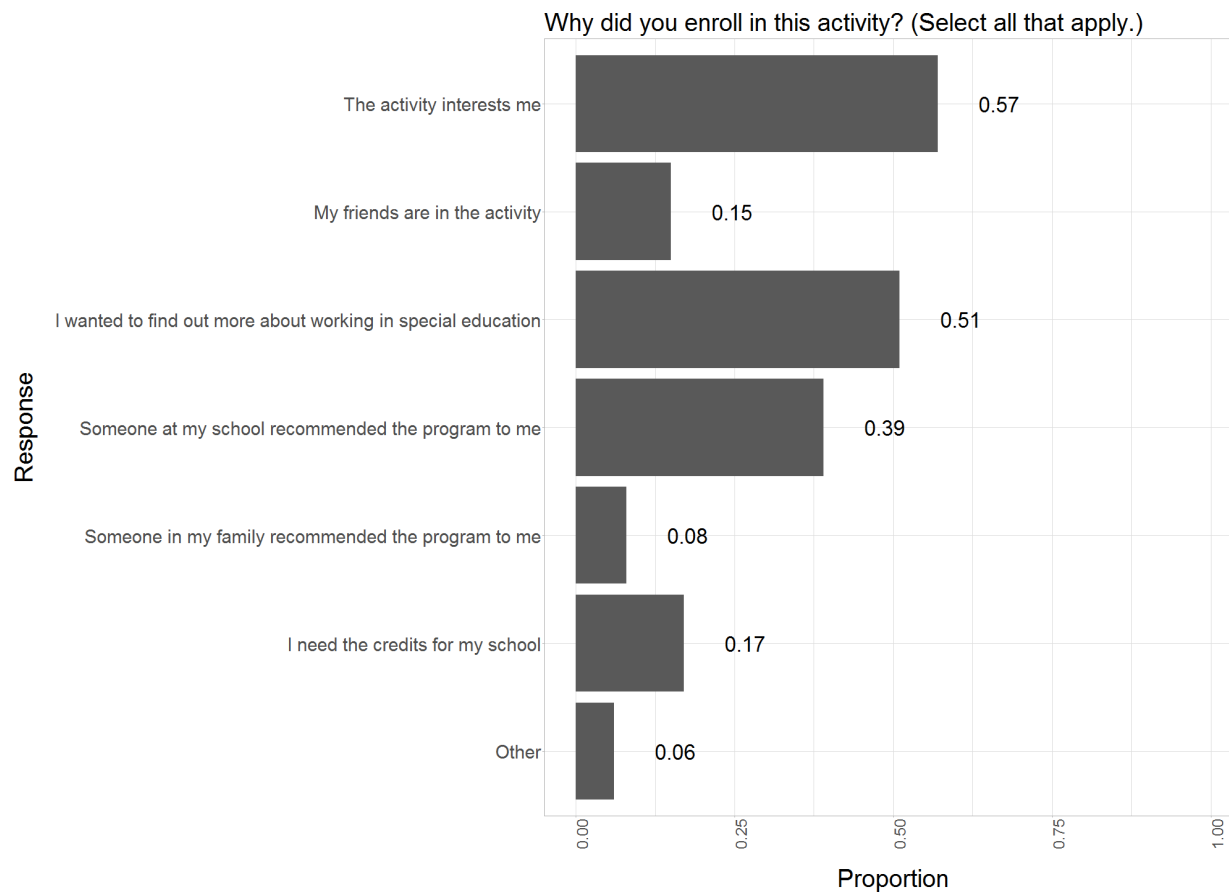


Figure 2.1. Presurvey, reasons for participating in program

We next turn to questions asked of participants before and after participating in the opportunity; for this, we limit the analysis to respondents from programs that implemented a presurvey and postsurvey. As shown in Figure 2.2, 37% of respondents to the postsurvey reported that they were interested in or plan to pursue a career in special education, compared to

30% of respondents to the presurvey. This difference is statistically significant at conventional levels ($p < .05$).

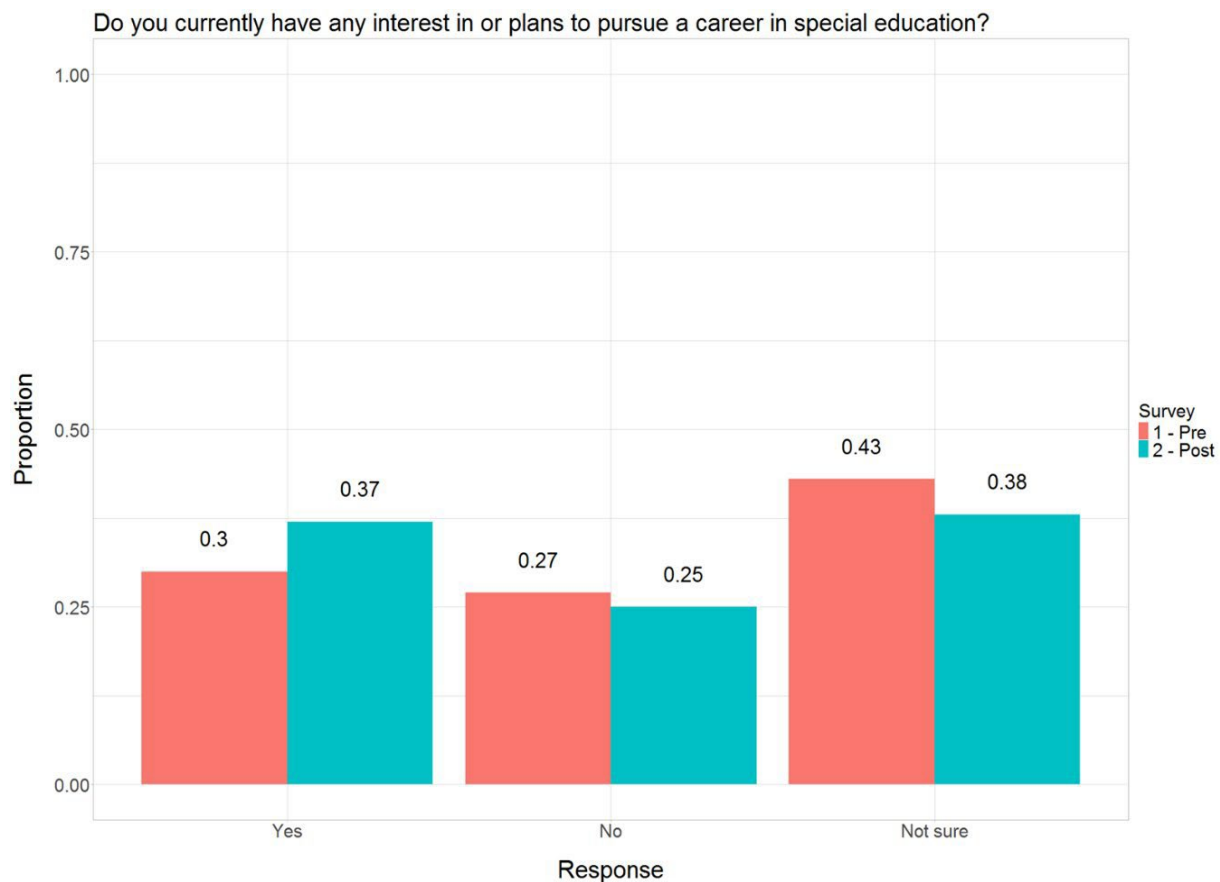


Figure 2.2 Participants’ interest in or plan to pursue a career in special education

Figure 2.3 shows that, when we asked interested respondents about the type of job they were considering, the majority of respondents said they were interested in prekindergarten (PK)–12 special education teaching roles, and we did not see significant differences in role interest between the pre- and postsurveys conditional on overall interest shown in Figure 2.2.

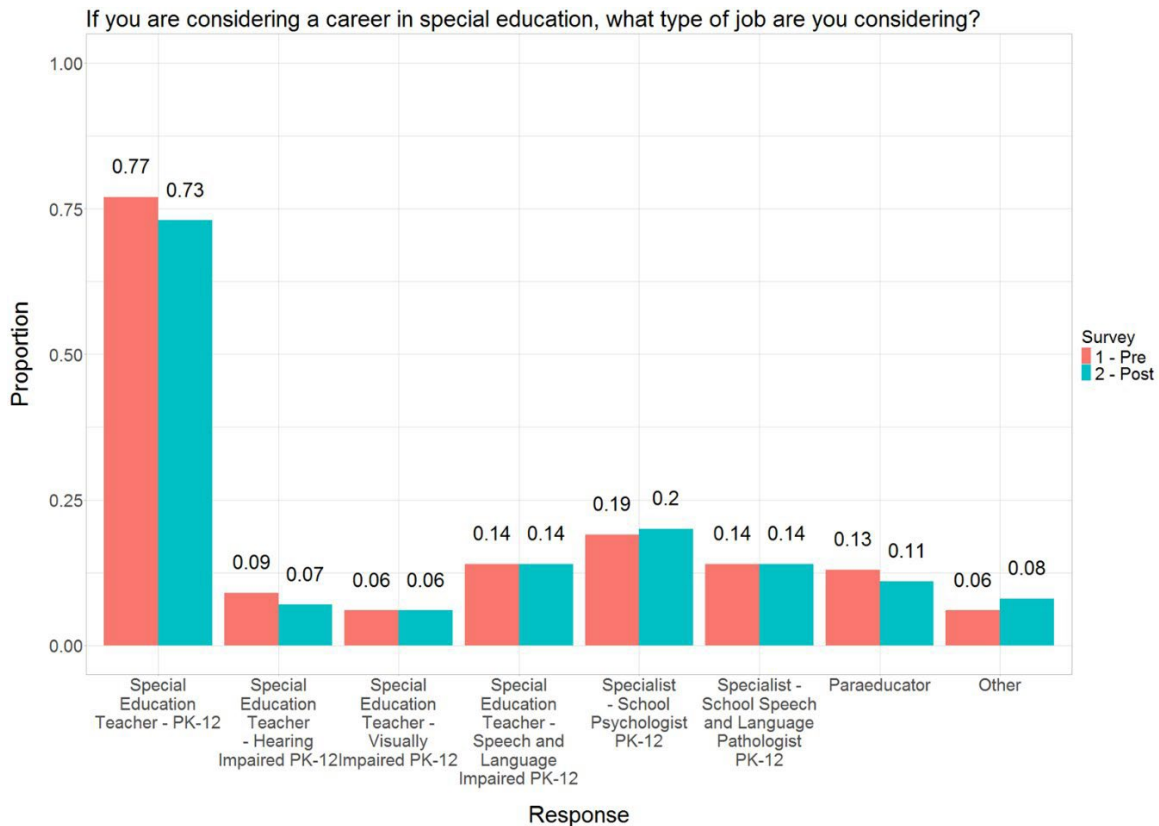


Figure 2.3. Participants’ interest in specific special education roles

We also asked parallel questions on the pre- and postsurveys about participants’ familiarity with terms often used in special education: person-first language, presuming competence, Universal Design for Learning, Free Appropriate Public Education, and Least Restrictive Environment. As shown in Figure 2.4, in all cases a higher proportion of respondents on the postsurvey reported being “extremely familiar” with these terms, and a lower proportion reported being “not at all familiar” with these terms, relative to respondents to the presurvey. All of these differences are statistically significant at conventional levels.

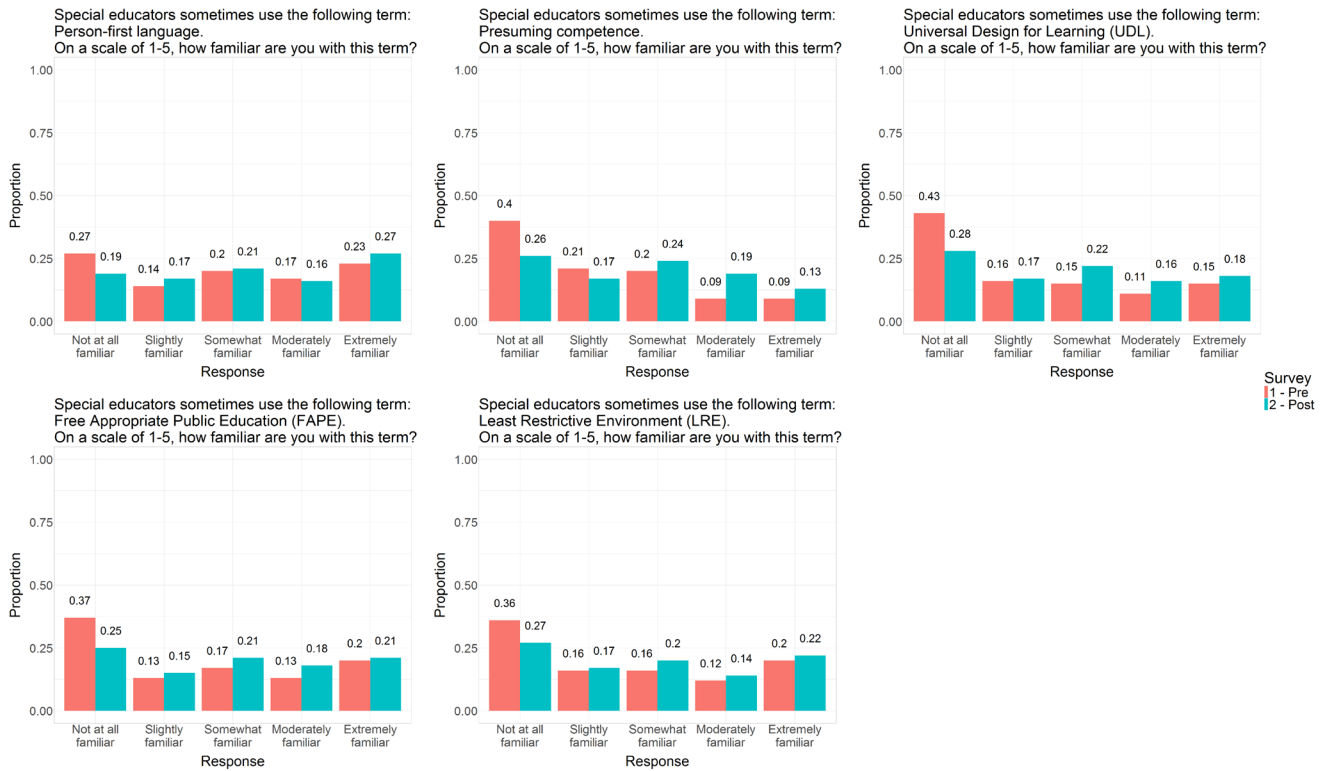


Figure 2.4. Participants’ familiarity with specific terminology

Likewise, we asked three questions of respondents on the pre- and postsurveys about their familiarity with topics related to colleges that prepare students for a career in special education: specific colleges, admissions requirements, and financial aid options. As shown in Figure 2.5, a higher proportion of postsurvey respondents reported being extremely familiar with these options, and a lower proportion reported being “not at all familiar” with these options relative to respondents to the presurvey. As above, all of these differences are statistically significant at conventional levels.

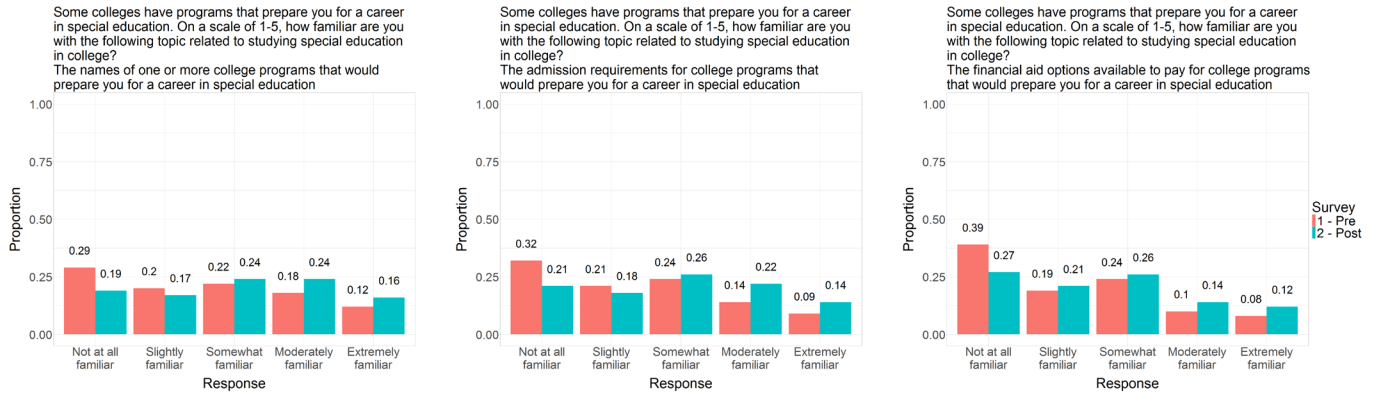


Figure 2.5. Participants’ familiarity with topics related to studying special education in college

We also asked participants about their familiarity with specific special education roles.

As shown in Figure 2.6, a higher proportion of respondents on the postsurvey reported being “extremely familiar” with all seven of these special education teaching roles, and a lower proportion reported being “not at all familiar” with these options relative to respondents to the presurvey. As above, all of these differences are statistically significant at conventional levels.

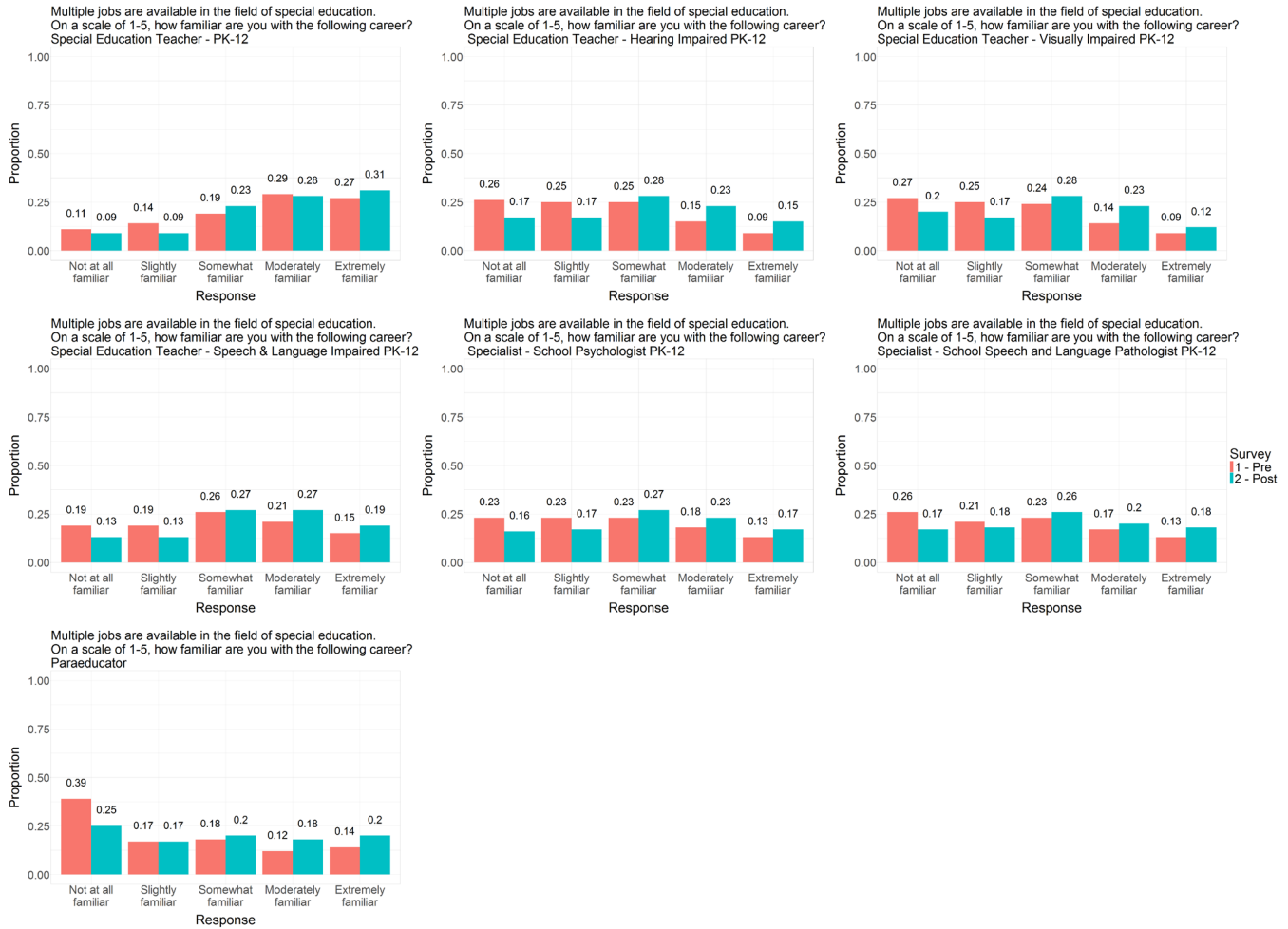


Figure 2.6. Participants’ familiarity with specific special education teaching roles

We also asked a series of questions of postsurvey respondents about their experiences in these ELOs. We first asked about the extent to which three topics—career options, available career pathways and career clusters, and eligibility requirements for admission into educator preparation programs—were discussed during this opportunity. As shown in Figure 2.7, about 35% of postsurvey respondents said career options were discussed “to a great extent,” compared to 29% for available career pathways and career clusters and 24% for eligibility requirements for admission into educator preparation programs. Only 7% to 17% of survey respondents, depending on the topic, said these topics were discussed “not at all” during their ELO.

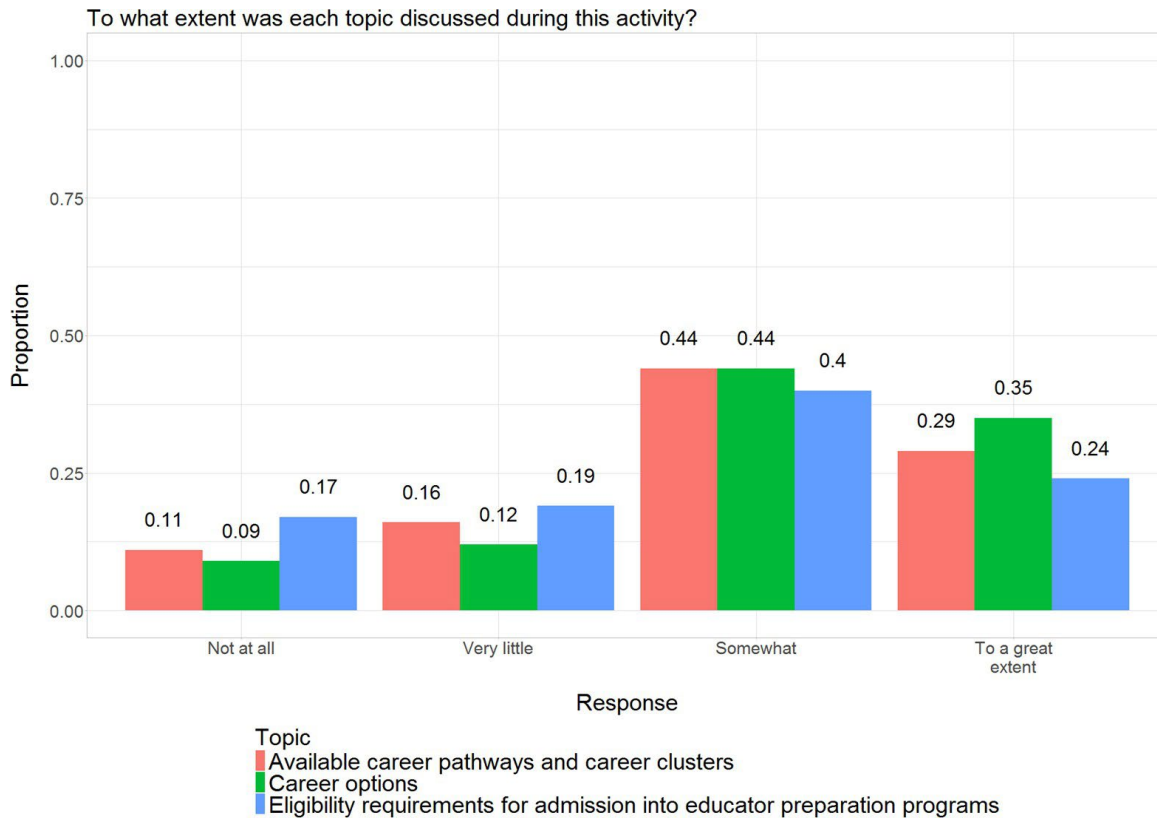


Figure 2.7. Extent to which topics were discussed during activity

Finally, we asked how, if at all, participants’ understanding of these topics improved as a result of this opportunity. As shown in Figure 2.8, more than two thirds of postsurvey respondents reported that their understanding of each topic improved “somewhat” or “to a great extent” as a result of their participation in the ELO, with the greatest reported understanding related to career options and the lowest related to eligibility requirements for admission into educator preparation programs.

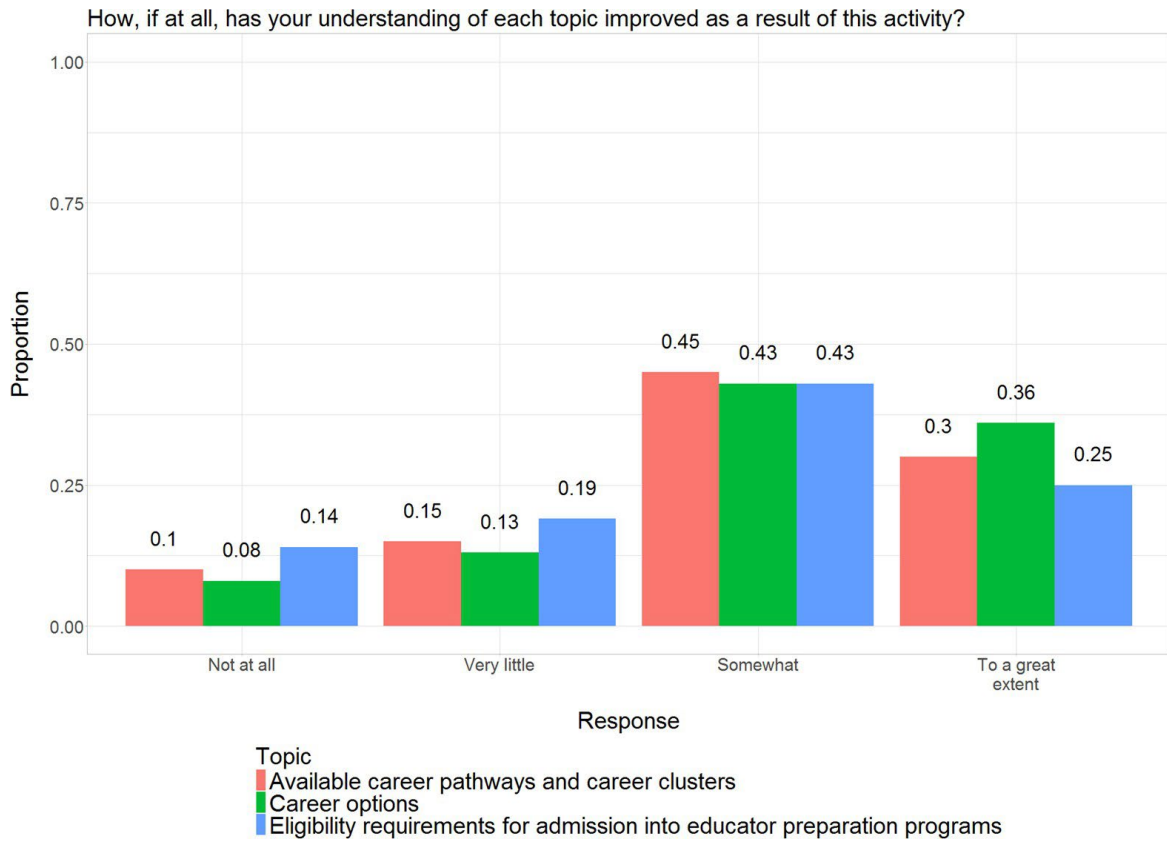


Figure 2.8. Extent to which understanding of topics improved as a result of the activity

APR Mentoring Project

As described in the prior project report (Theobald et al., 2024), the purpose of the APR Mentoring Project is to retain special education personnel and provide additional support to facilitate their growth as professionals. Novice Pennsylvania special education administrators, teachers, school psychologists, and teachers of the deaf and teachers of the visually impaired with 3 or fewer years of experience were matched with mentors who had 5 or more years of experience. The mentors were expected to meet with their mentees for at least 30 minutes once a month to discuss educational practices and processes. Each month, mentors were provided with recommended topics and resources by PaTTAN consultants. Mentors received a stipend at the conclusion of the project.

To collect formative data on mentors' and mentees' perspectives on their experience in the mentoring program, we surveyed mentors and mentees after their participation in the program. IRB approval for the surveys was provided by AIR, and surveys were distributed by PaTTAN staff to participating mentors and mentees. We received survey responses from 91 mentors and 44 mentees who participated in the program. As with the surveys on the Developing Future Special Educators Grant program, we cannot definitively say why response rates were considerably lower for mentees than mentors, but completing the survey was tied to mentor compensation at the conclusion of the program, which likely explains the higher response rate for this group. Regardless, as with our first-year report, this formative analysis comes with the important caveat that the sample of survey respondents, particularly for mentees, may not be representative of all participants in this program.

We begin by summarizing mentors' special education roles. As shown in Figure 3.1, more than 60% of mentors were special education administrators, almost 30% were special education teachers, and slightly more than 10% were school psychologists.

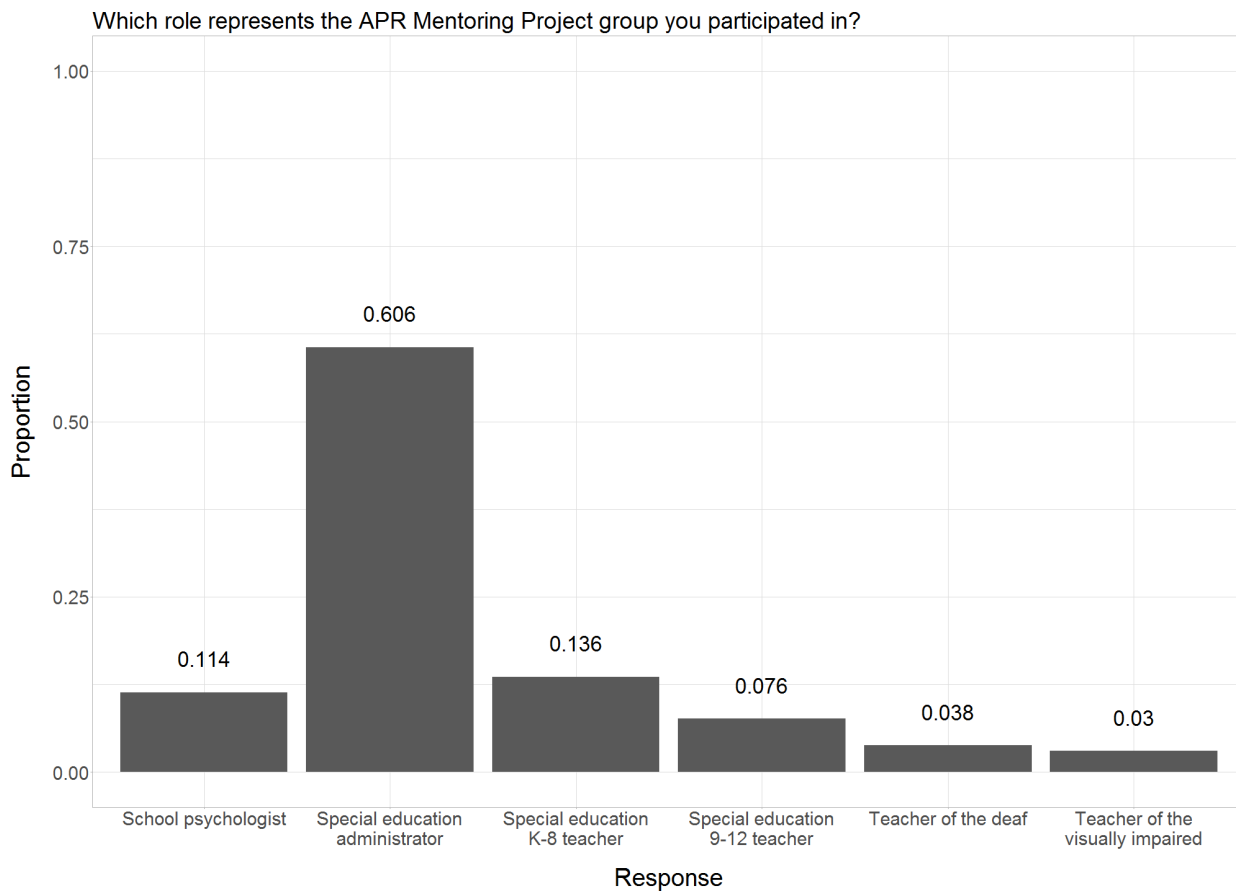


Figure 3.1. Mentor roles

We now summarize the perspectives of mentors about their mentees. As shown in Figure 3.2, 94% of responding mentors reported that they “strongly agreed” or “agreed” that participating in the APR Mentoring Project positively impacted the professional growth of their mentee(s), whereas 84% reported that their mentee’s engagement in the project was “excellent” or “very good.”

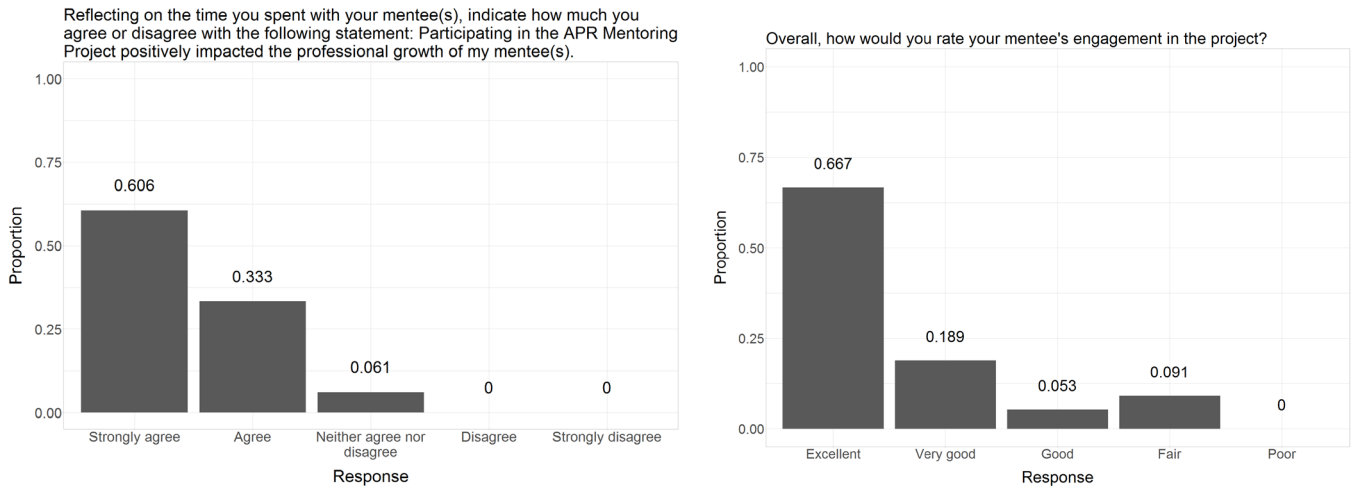


Figure 3.2. Mentors' perspectives on mentees

Finally, when we asked mentors about their perspectives about different parts of the program, only about 15% said they would have benefitted from formal training for the mentoring role, and 44% said they would have benefitted from networking with other mentors. Finally, more than 98% of responding mentors “strongly agreed” or “agreed” that they would like to serve as a mentor again next year, whereas 82% said the amount of time they spent with their mentee(s) this year was “just the right amount.”

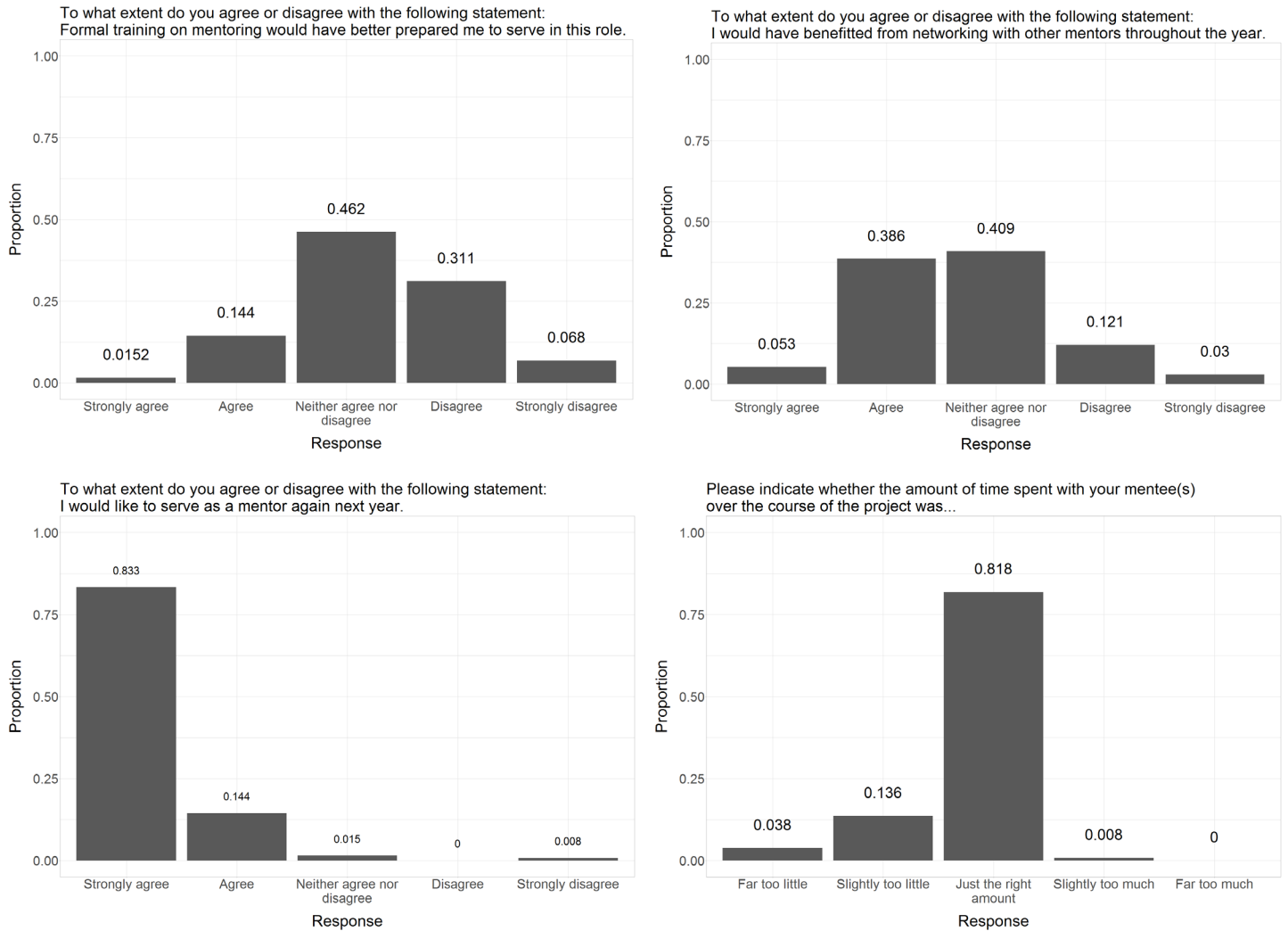


Figure 3.3. Mentors’ perspectives on program

We now turn to the 44 responses to the mentee survey. As shown in Figure 3.4, 96% of mentees “recommend” or “strongly recommend” their mentor to future project participants, 77% “strongly agreed” or “agreed” that they would have benefitted from networking, and 94% reported that they would encourage colleagues to participate in the project next year. 83% of mentees felt that the amount of time they spent with their mentor was “just the right amount,” and 94% of them “strongly agreed” or “agreed” with the statement that participating in the APR Mentoring Program positively impacted their growth as a professional.

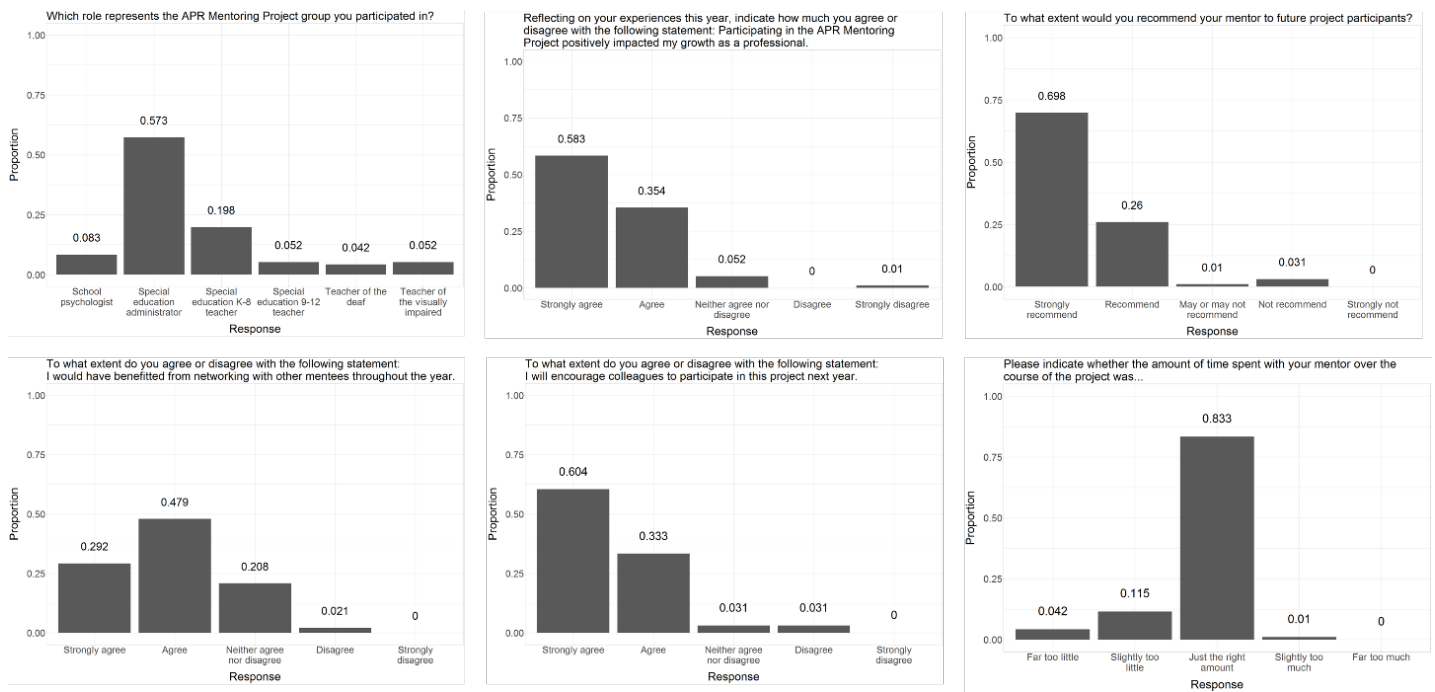


Figure 3.4. Mentees’ perspectives on program

Networking and Learning Communities and Learning Institutes

The purpose of the Networking and Learning Communities, introduced in the 2022–23 school year, is to facilitate opportunities for special educators to engage in conversations with others who share similar job responsibilities as a means of providing ongoing support and receiving professional development. The Learning Institutes, introduced in the 2023–24 school year, are in-person workshops held at regional PA Training and Technical Assistance Network (PaTTAN) offices and Intermediate Unit “satellite locations” designed for role-alike professional development. Workshops for special education teachers, special education administrators, paraprofessionals, transition coordinators, and speech-language pathologists were offered in fall 2023 and spring 2024. The goal of the Learning Institutes was for participants to develop tools and strategies for immediate application.

As with the previous surveys, we distributed surveys to participants in these networking

sessions. IRB approval for the surveys was provided by AIR, and surveys were distributed to participants at the end of each session. We received survey responses from 1,051 participants in Networking and Learning Communities sessions, and 170 participants in Learning Institutes. We do not have access to data on all participants in these sessions, but to the extent that this does not represent all participants, subsequent analyses are limited in that this sample may not be representative of all participants in these sessions.

We begin with basic descriptive information about participants in these networking sessions. As shown in Figure 4.1, about a third of participants in each type of session were special educators, whereas more than 10% of participants in each type of session were education administrators.

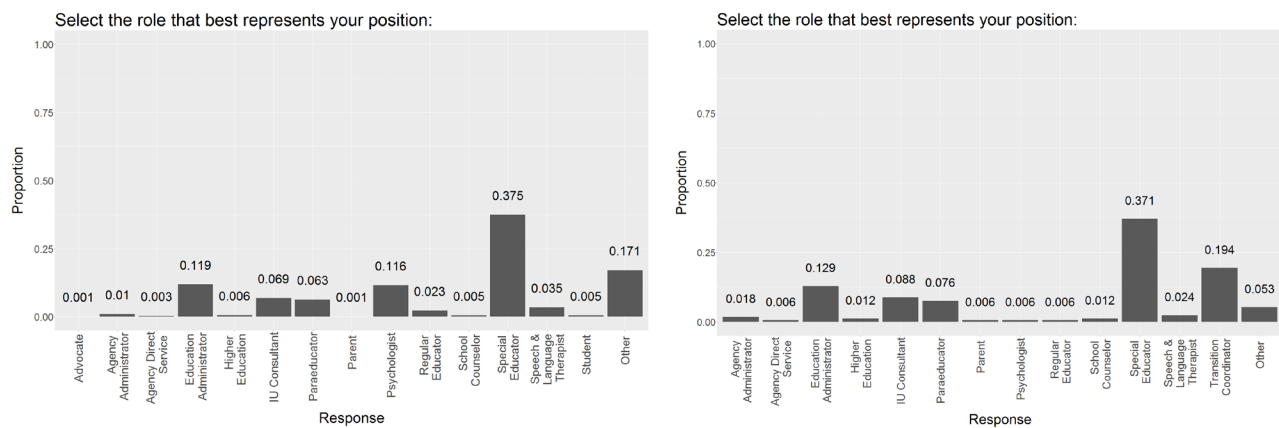


Figure 4.1. Participants’ roles in Networking and Learning Communities (left panel) and Learning Institutes (right panel)

The remainder of the questions on the survey asked participants about their perceptions of the networking session they attended. As shown in Figure 4.2, among survey respondents, the proportion who “strongly agreed” or “agreed” that the session was relevant to their needs was 94%. By the same metric, 90% reported that the session met their expectations, 93% said the information shared will be useful in their work, and 90% said time in the session was well spent. Finally, 90% of respondents reported that the overall quality of the session was “excellent” or “very good,” whereas

88% of respondents said there was an “excellent” or “very good” chance that they would recommend the sessions to a coworker or colleague.

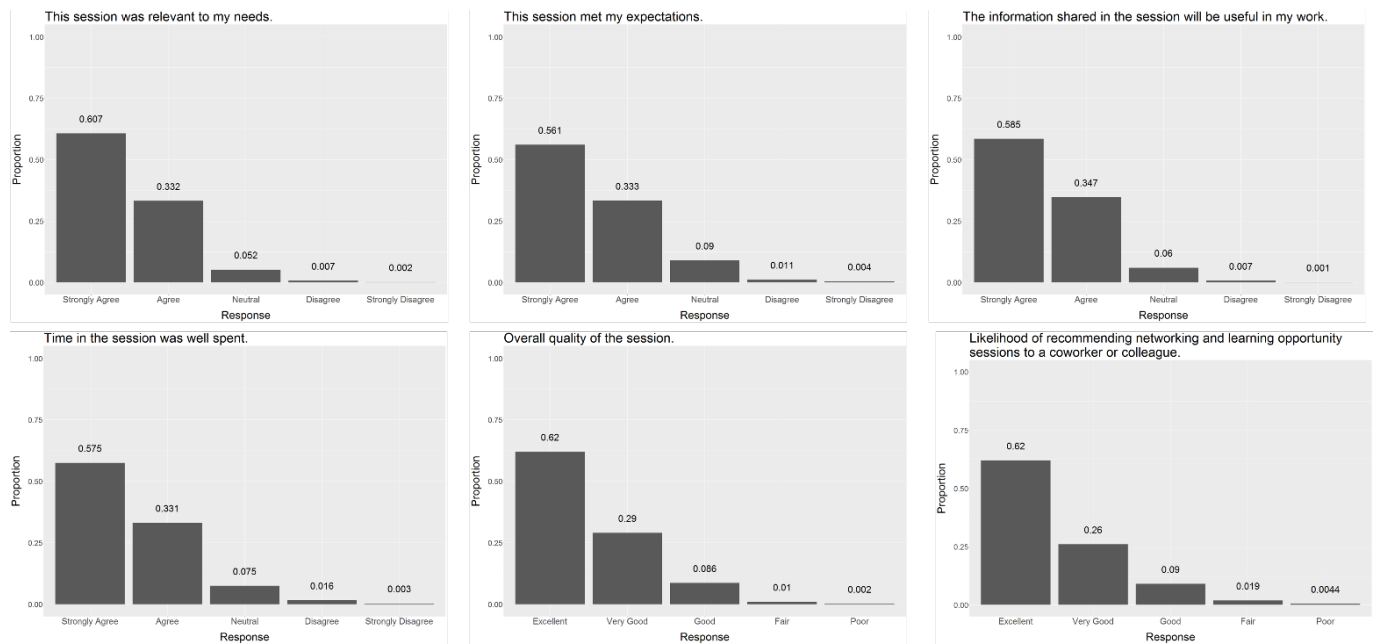


Figure 4.2. Participants’ perceptions of Networking and Learning Communities sessions

We now provide similar information for the Learning Institutes sessions. As shown in Figure 4.3, similarly high proportions of participants found the session was relevant to their needs, met their expectations, will be useful to their work, and was time well spent (i.e., more than 90% “strongly agree” or “agree”). That said, a smaller proportion (85%) rated the overall quality of the session as “excellent” or “very good” and would recommend a Learning Institute to a coworker or colleague.

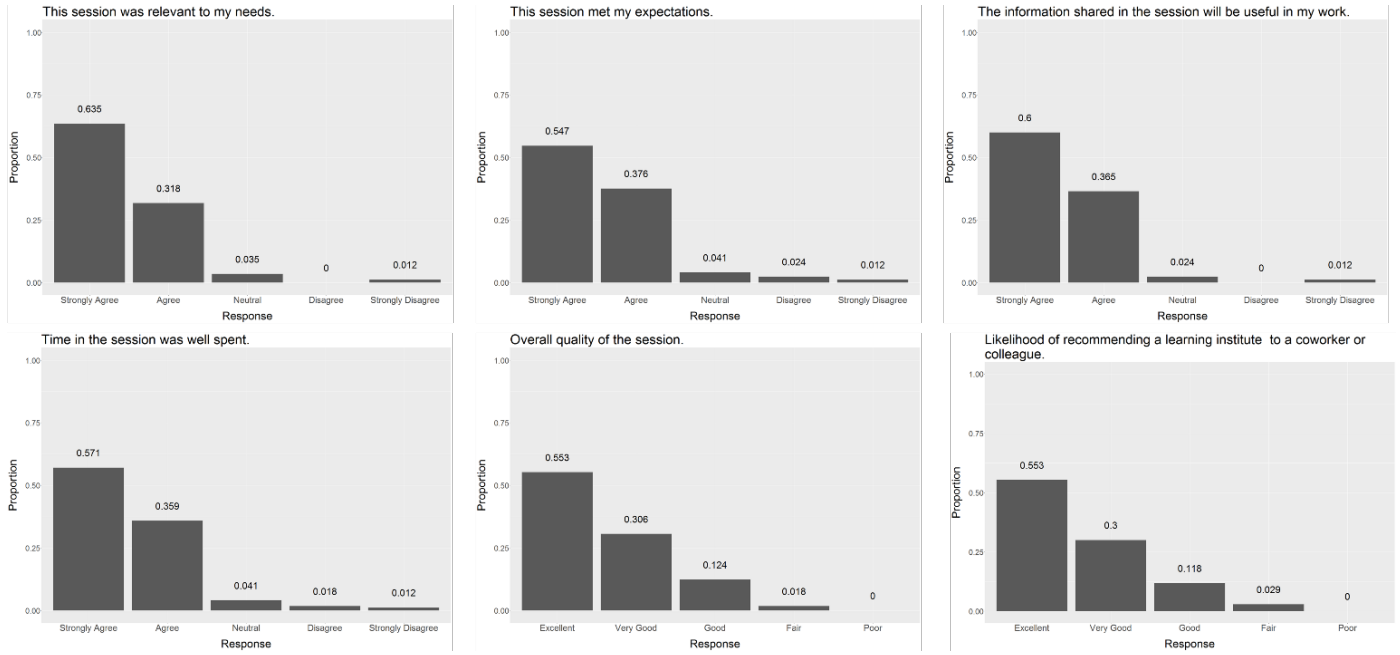


Figure 4.3. Participants' perceptions of Learning Institutes sessions

Accelerated Programs for PK–12 Special Education Teacher Certification Grant

In the 2023–24 school year, Pennsylvania awarded grants to 15 universities to create accelerated programs for individuals interested in obtaining PK–12 special education certification within 18 months through the Accelerated Programs for PK–12 Special Education Teacher Certification Grant. The goal of this grant is to increase the number of certified special educators in Pennsylvania through the completion of an 18-month postbaccalaureate program by December 2024. Fifteen IHEs were required to develop a program that includes mentoring by experienced special educators, summer field experiences, and flexible delivery of courses. IHEs also had to sequence course competencies to prepare individuals for teaching students with disabilities. Participants were required to complete competencies in behavior and classroom management before the 2023–24 school year began. They were required to complete competencies in structured literacy, IEP development and implementation, and special education law in the fall of 2023.

We collected data on these participants from two sources: fourth-quarter reports submitted to the Pennsylvania Bureau of Special Education and interviews with grant coordinators at each of the 15 participating IHEs. As shown in Figure 5.1, reporting data showed that more than 200 candidates participated in these programs during the 2023–24 school year.

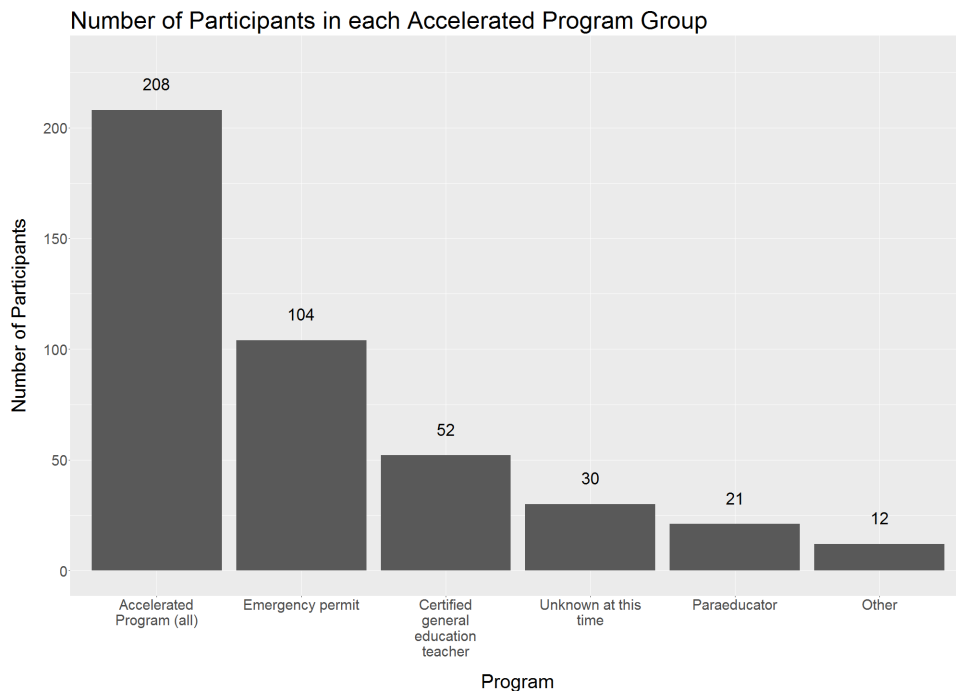


Figure 5.1. Participants in Accelerated Program for PK–12 Special Education Teacher Certification

Five primary themes emerged from the qualitative interviews with grant coordinators. First, coordinators reported that grants went to adapt *existing programs* to expand access and accelerate certification. Second, grant coordinators often stressed that participants were primarily teachers on emergency certificates who are working and need increased support to balance school, job, and home life. Third, grant coordinators emphasized the importance of financial support in recruiting efforts and reported that they often supplemented financial support from districts and Intermediate Units (IUs). Fourth, grant coordinators largely viewed accelerated programs as sustainable moving forward to meet the special education staffing needs of the state. And finally, they reported wide variation in supervision and mentoring across programs.

We performed a formal qualitative analysis aligned with this latter theme to explore variation across programs. In Table 5.1, we summarize information coded from interviews about five constructs: (1) the number of mentors and the ratio and mentors to students; (2) who the

mentors are; (3) information about mentor training; (4) terminology related to mentoring, supervision, and coaching; and (5) the average time students were mentored. Missing cells indicate that the information was not addressed over the course of the interview.

Table 5.1. Summary of IHE data from individual interviews

IHE Grantee	Number of mentors and ratio of mentor/ students	Who are mentors: IHE, IU, LEA	Mentor training —if any	Mentoring versus supervising versus coaching	Average time students were mentored
Commonwealth University— Bloomsburg University	1:1—most likely LEA	University supervisors and district assigned mentors - the university doesn't know much about mentors Mentors communicate only through candidate	Will occur in final stage of student teaching— summer/fall 2024		
East Stroudsburg	Mentors separate from supervisors 1:1 school-based mentors	From schools —not necessarily the same school as student	Surveyed people on gen interest in an orientation session	Mentors and supervisors are different	Mentors at least 3 times face-to- face when everyone is together but can be at other times, too Once a month —at the school; virtually at the university
Eastern University	University supervisors and mentors from the IU prior to student teaching	From the IU —CCIU special ed teachers	CCIU trains mentors through induction program		Once a week to daily, depending on need

IHE Grantee	Number of mentors and ratio of mentor/ students	Who are mentors: IHE, IU, LEA	Mentor training—if any	Mentoring versus supervising versus coaching	Average time students were mentored
Gannon University	Unclear 1:16 for university person	Some university and some site-based University and school- based		University supervisor is the mentor	Once a week virtually with university mentor
Holy Family University	1 mentor for all initial certification students— 1:21	Alumnus who is currently teaching and supervises in his school AND assistant to field placement director of the IHE—and is “mentor”	Yes	Students have mentors and supervisors and cooperating teachers	Unclear Twice-weekly sessions offered with one on Saturday—office hours—virtually
Kutztown University		Mentors are both university faculty (Co-PI) and site-based special ed teachers			
Lehigh University	2 supervisors—4–6 students each 1:5	Mentors are university supervisors University and LEA	Mentors provided orientation and are check-ins with project coordinator		Student teachers are observed once a month—interact more frequently
Lincoln University	1:3–4	3 faculty; onsite mentors in building	Some training from university		Faculty meets monthly—school-based mentors meet as needed and at least monthly
Millersville University	1:1	Faculty members and teachers in the districts (like a	None		Plan was for mentors to visit 3 times per month—but not

IHE Grantee	Number of mentors and ratio of mentor/ students	Who are mentors: IHE, IU, LEA	Mentor training —if any	Mentoring versus supervising versus coaching	Average time students were mentored
		operating teacher)			sure this happened. ce a month virtually
Moravian University	Supervisor load is 1:3 retired administrators and superintendents	Supervisors (university) and mentors at the school	Training through IU		Once a week
Penn State Harrisburg	1:5	Site-based "mentors" and university supervisors (adjunct faculty)	Online training for school-based mentors; university supervisors receive in-person training	Evaluation plays a role in both the "mentor" role and supervisor role.	Once a month
Slippery Rock University	1:4	Site-based—district and/or school and university			A university supervisor for student teaching goes out every other week or as needed
University of Pittsburgh	1:2–5	University staff member and LEA special ed teacher	Mentor is required to have special ed experience		Once every 3 weeks Special education teachers meet with students daily; university meets with them weekly or biweekly
West Chester University	Each student has a mentor given by the districts—the university does		LEA-specific	Students have mentors in the buildings and university supervisors	No details about how often—referred to LEAs—mentioned CCIU for some mentoring

IHE Grantee	Number of mentors and ratio of mentor/ students	Who are mentors: IHE, IU, LEA	Mentor training —if any	Mentoring versus supervising versus coaching	Average time students were mentored
	separate supervision 1:1			iversity, LEA, instructional coaches	
Widener University		Supervisors who are retired principals and teachers—not in special ed University staff member and LEA			Supervisor checks in every week during student teaching—not sure what that means Mentoring virtually—not yet set up

Initial analyses of these data revealed three major observations. First, interviewers noted that the terms, mentor, supervisor and coach were used interchangeably. However, it should be noted that the term supervisor most often applied to IHE personnel tasked with observing and evaluating teacher candidates. The term mentor occasionally was used to refer to university personnel but most frequently applied to educators from the LEA where the teacher candidates were assigned or employed. The term coach appeared but not as frequently as supervisor or mentor. Secondly, the analysis revealed that that the amount of time teacher candidates consulted with their mentors was difficult to determine. Finally, through the interviews, it became apparent that the benefits of mentoring also were difficult to determine because mentoring and supervision were conflated.

World of Learning (WOL) ASL Courses

The final APR project covered in this second-year report is the ASL courses offered to high school students in Pennsylvania through WOL, which got underway in September 2023. This project aims to attract students to the field of special education through participation in American Sign Language Courses. World of Learning Institute at Appalachia Intermediate Unit 8 provided virtual courses in American Sign Language I and American Sign Language II to secondary students from school districts across the commonwealth. Classes were delivered in American Sign Language. Students learned about Deaf culture and how to communicate in a visual language in the classes that were delivered through live, online, and interactive sessions.

Participation in these surveys was relatively modest, with only 38 students responding to the pre- and postsurvey administered to participants. That said, among survey respondents, students that participated in this program were actually *less likely* to indicate that they plan to use ASL in a future career after participating in the program (18%) than before participating (22%). Less than 8% of participants reported on the postsurvey that they have an interest in pursuing a career in special education.

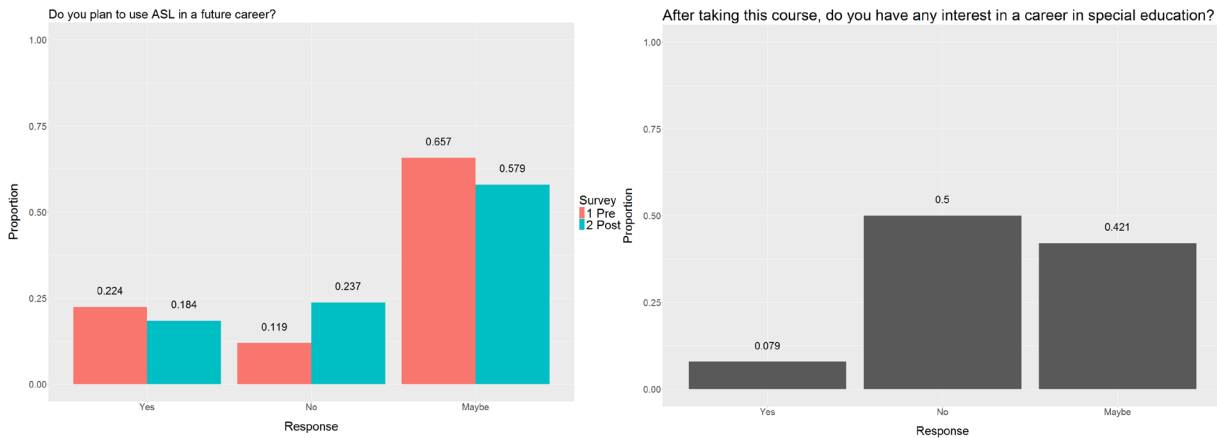


Figure 6.1. Participants' reported future plans

Conclusions and Next Steps

As with the findings from our Year 1 report (Theobald et al., 2023), the findings from this second-year analysis and companion administrative data analysis (Gilmour et al., 2024) underscore the motivations behind Pennsylvania's APR projects: The state needs to attract and retain more special educators of all roles to better serve students with disabilities statewide.

Feedback from participants involved in the Developing Future Special Educators Grant, APR Mentoring Project, and Networking and Learning Communities suggest that, as found in the first year of these projects, these programs continue to be relevant and beneficial to prospective and current special educators. Moreover, data collected from participants in new APR projects (Learning Institutes, Accelerated Programs for PK–12 Special Education Teacher Certification Grant, and American Sign Language programs) suggest that these programs offer promise, but also have room for improvement (e.g., in terms of mentoring for participants in the accelerated programs and generated interest in ASL in a future career for ASL participants). Specifically, regarding recommendations for the design and implementation of the upcoming IHE grant competition, we propose the following:

1. Clearly define the three commonly used terms identified above and clarify the roles and

- responsibilities of each including minimum time requirements and requisite training.
2. Clarify the IHEs eligible to apply for the upcoming grant cycle and the target student population.
 3. Revise the data collection procedures to clearly answer questions of import for APR and more clearly distinguish between participants in different roles.

This report summarizes the work from the second year of a long-term project on the special educator pipeline in Pennsylvania, and several next steps will expand the scope of work and our understanding of the APR initiatives. First, although the administrative data analysis in the companion report (Gilmour et al., 2024) focused exclusively on special educator *retention*, work planned for the next year of this project will leverage newly received data on all traditional and emergency credentials in the state to build on prior work on teacher *production* by Fuller (2022) by focusing specifically on the production of new special educators across years and license types. Likewise, the six APR projects studied in this report will be expanded to include both new cohorts and new categories of special educators, so subsequent analyses of these projects will continue to provide formative data about prospective and current special educators' perspectives about their experiences in these projects. The Bureau of Special Education has also introduced or will introduce additional APR projects—including paraeducator training grants, out-of-state school psychologist stipends, and master's-level speech language pathologist stipends for school-based placements—that will be the focus of future work.

Finally, and as described in the first-year report, the ultimate goal of this research is to examine whether participants in these projects are more or less likely to enter and remain in the state's teaching workforce and, eventually, the extent to which these and other ongoing or emerging APR projects have moved the needle in terms of improving special educator retention and outcomes

for students with disabilities in the state. In the next year, we will be able for the first time to connect data on participants from the first year of APR projects to administrative data on these outcomes, so we will be able to push this initial formative analysis to an outcomes- oriented analysis that evaluates the downstream impacts of these projects on later outcomes.

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