THE STATE OF EARLY CHILDHOOD HIGHER EDUCATION IN **New York State**

TECHNICAL REPORT

December 2015

By Center for the Study of Child Care Employment with Child Trends

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The Center for the Study of Child Care Employment (CSCCE) was founded in 1999 to focus on achieving comprehensive public investments which enable and reward the early childhood workforce to deliver high-quality care and education for all children. To achieve this goal, CSCCE conducts cutting-edge research and proposes policy solutions aimed at improving how our nation prepares, supports, and rewards the early care and education workforce to ensure young children's optimal development.

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The views presented in this report are those of the primary authors only and do not reflect the opinions of the report's funders.

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TABLE OF CONTENTS

The State of Early Childhood Higher Education in New York State, Technical Report

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LIST OF TABLES & FIGURES

CHAPTER 1: Introduction

CHAPTER 2: Early Childhood Higher Education Programs

CHAPTER 3: Early Childhood Higher Education Faculty

APPENDIX

CHAPTER 1: INTRODUCTION

Teacher preparation in the field of early childhood education (ECE) has historically included a variety of higher education degree programs, in various child-related disciplines, all of which have been considered more or less acceptable courses of study for prospective teachers and administrators (Maxwell, Lim, & Early, 2006; Whitebook et al., 2012). In contrast, programs to prepare teachers and administrators to work with older children reflect far greater uniformity and stringency related to specific preparation standards and certification requirements. In recent years, however, rising expectations about the knowledge and skills that early childhood practitioners need in order to work effectively with young children from birth through the early elementary grades, along with the introduction of new ECE programs and standards, have led many to question whether the current wide array of ECE-related degree programs can be assumed to produce equivalent results.

In contrast to many states, New York has long recognized the specific knowledge base that practitioners need in order to teach young children successfully, from birth through the early elementary grades, and in 2004, it implemented the Early Childhood Education (Birth to Grade 2) Teacher Certification for educators working in public schools. To be eligible for ECE Certification, students are required to have a bachelor's degree from a New York State Registered Program – Early Childhood Education (Birth to Grade 2), defined as an education program that has been approved in advance by the New York State Education Department as containing the studies required for certification as a New York State educator. If students already have a bachelor's degree in a subject outside of education or teacher preparation, they are required to complete a graduate level-approved teacher education program. Teachers certified to work with children in older grades, who are interested in obtaining an Early Childhood Education Certification, are required to complete the Early Childhood Content Core Coursework. The state has also established the Students with Disabilities, Birth to Grade 2 certification, which requires completion of a New York State Registered Degree Program – Students with Disabilities, Birth to Grade 2. These certifications allow teachers to work in Pre-Kindergarten through 2nd grade classrooms in the public schools.[1]

Requirements for educators of children from birth to five, however, vary depending on settings. Early childhood educators teaching in the state's Universal Pre-Kindergarten (UPK) program in the public schools are required to be certified. UPK educators teaching in community-based organizations, contracted by a school district to provide UPK services, must also be certified or have a bachelor's degree and a written plan to obtain the certification within three years of employment or by June 30, 2017, whichever is later. Certification is also required for educational directors and teachers serving preschool-age children in New York City's licensed child care centers (with some alternative qualifications).

[1] Primary school teachers who do not teach preschool can attain the Childhood License to teach Grades 1-6.

Other sectors of the early childhood education workforce are not required to have a bachelor's degree or certification, although staff requirements intersect with the higher education system. These include teachers serving children from birth to five in child care centers outside of New York City, as well as infant/toddler teachers in the City. These teachers are required to have either an associate degree in early childhood, child development, or a related field; or a Child Development Associate (CDA) credential; or nine college credits in early childhood, child development or a related field, with a plan leading to a CDA credential. For family child care home providers, however, there are no educational requirements at the college level.

In addition, New York has launched a quality rating and improvement system known as QUALITYstarsNY. Two of the four sections of standards focus on the workforce by supporting increased qualifications and experience of staff, and developing greater management and leadership capacity for participating sites. Both categories of standards involve additional higher education. Funding to support the cost of tuition as well as mentoring and coaching is made available through Child Care and Development Block Grant quality improvement dollars.

The New York State Early Childhood Advisory Council (ECAC) serves the Governor and is charged with ensuring that all of New York's young children are healthy, learning, and thriving in families that are supported by a full complement of services and resources essential for successful development. The council's Workforce Work Group is dedicated to the development of those adults who work in a range of programs to realize this vision. Teacher preparation, the Birth to Grade 2 Certification, and leadership development are strong components of the Workforce Work Group's charge.

To gain a clearer picture of early childhood-related offerings throughout the state's higher education system, and to explore some specific issues related to the state's teacher preparation system, the ECAC with its partner members, New York Early Childhood Professional Development Institute and the New York State Association for the Education of Young Children engaged the Center for the Study of Child Care Employment (CSCCE) at the University of California, Berkeley, to conduct the Early Childhood Higher Education Inventory (Kipnis, Ryan, Austin, Whitebook, & Sakai, 2012). The Inventory is designed to describe variations in program content, age-group focus, student field-based learning, and faculty characteristics in early childhood degree programs offered within a state.

In addition, a series of questions developed for the Inventory focuses specifically on the issues of early mathematics and family engagement, with particular attention to program content and faculty attitudes. While the link between young children's math competency and later school success has been demonstrated in recent research, there is concern among some math experts that institutions of higher education are not adequately preparing teachers of young children to assess or facilitate children's mathematical understanding and skills (Ryan, Whitebook, & Cassidy, 2014). Additionally, given research evidence that family involvement in children's learning at home and at school contributes to school success (Dearing & Tang, 2010; Reynolds & Shlafer, 2010), we were interested in learning the extent to which ECE higher education programs are addressing the topic of family engagement.

CSCCE collaborated with Child Trends, Inc. on sample development, data collection and analysis, and report development. The Inventory was implemented in New York State during the 2014-2015 academic year. This Technical Report presents detailed findings collected by implementing the Inventory's mapping, program, and faculty modules (Kipnis et al., 2012).

METHODOLOGY

Mapping Module

Through an extensive document review, the Mapping Module identifies a state's early childhood higher education programs by collecting information on each college or university, the departments in which programs are housed, degrees and certificates offered, and characteristics of the students attending the programs.

In the fall of 2014, the ECAC provided CSCCE with a list of New York State colleges and universities that offered early childhood degree programs.

For each college and university identified, CSCCE conducted an extensive web search to identify:

- Early childhood degree offerings;
- Departments in which early childhood degree programs were housed;
- Early childhood certificates and other programs offered; and
- Additional contact information for the dean or program coordinator.

A letter from the ECAC was then emailed to each contact, introducing CSCCE and Child Trends, describing the purpose of the Inventory and its importance to the early care and education community. The letter also identified the Inventory's funding source as the Heising-Simons Foundation. We then attempted to contact, via telephone, the identified deans or program coordinators (herein referred to as program leads) to verify the information gathered through our web searches. Institutions that were determined not to offer an early childhood degree were excluded from the sample (e.g., an identified program was found to focus on developmental psychology, but with no mention of early education or of preparing students to work as classroom teachers).

New York State's population of early childhood higher education programs

Through this process, we identified a robust population of public and private institutions of higher education in New York State. Appendix Tables A1-1 and A1-2 display the early childhood degrees offered by these institutions.

Ninety-two institutions of higher education in New York State were identified as offering a total of 243 early childhood degree programs. Among these were:

- 27 public community colleges and one public college/university offering:
  - 44 early childhood associate degree programs.
- 64 colleges and universities (39 private and 25 public) offering:
  - 58 bachelor's degrees;

- 141 master's degrees; and
- 4 doctoral degree programs in early childhood.

Slightly more than one-half (54 percent) of community colleges offered only one associate degree program, 39 percent offered two degree programs, and eight percent offered three or four degree programs. Approximately two-thirds (65 percent) of colleges and universities that offered a bachelor's degree program offered only one such program, one-third (33 percent) offered two programs, and just one institution (three percent) offered six programs. By contrast, 41 percent of colleges and universities that offered a master's degree program offered between three and seven such programs. Less than one-third offered one (27 percent) or two degree programs (31 percent).

Program Module

Using an online survey tool completed by each degree program's lead, this module collects information on program content and age-group focus; connections to state standards; accreditation; methods of student assessment; types, sequencing, duration, and supervision of clinical experiences; student support; and challenges currently faced by the institution.

Sample Development, Participation, and Response Rate

During the telephone call with program leads, CSCCE and Child Trends identified the appropriate person to respond to the Program Module of the Inventory. We then asked the appropriate respondent whether s/he was willing to participate. Of the 92 institutions of higher education offering early childhood degree programs, 80 (87 percent) agreed to participate in the Inventory. This included 89 percent of the community colleges (n=25) and 85 percent of the public and private colleges and universities offering bachelor's and graduate degrees (n=55). (See **Table 1.1**.)

Response Rate

Table 1.1
Population of Institutions of Higher Education (IHE) in New York Offering Early Childhood Education Degrees[1]

Program Type	Number of IHE Identified as Offering ECE Degree[1]	Number of IHE Agreeing to Participate in the Inventory	Number/Percentage of IHE that Completed at Least One Survey	
			Number	Percentage
Associate	28	25	22	88%
Bachelor's	40	34	23	68%
Master's	50	42	36	86%
Doctoral	3	2	2	100%

[1]Duplicated count, as colleges and universities may offer multiple program types.

Institutions offering early childhood degree programs at multiple levels (e.g., bachelor's and master's degrees) were asked to complete separate surveys for programs at different degree levels. For those institutions offering more than one degree program at the same level (e.g., a bachelor's degree in early childhood education and another in early childhood special education), a member of our research team engaged in a phone conversation with the identified program representative prior to sending the online survey, to determine whether they would be asked to complete more than one survey for different degree programs at the same level. This determination was based on the level of variation among these different degree programs (e.g., some differed only with respect to elective courses). We emailed only one program survey to institutions that offered a dual degree in Childhood (Grade 1 – Grade 6) and Early Childhood (Birth to Grade 2), and asked respondents to focus their answers on the early childhood component of the degree.

A total of 155 program surveys were emailed to the degree programs: 32 to associate, 38 to bachelor's, 83 to master's, and two to doctoral degree programs. The final sample consisted of 27 associate, 29 bachelor's, 58 master's, and two doctoral degree program surveys. The response rates were as follows for each degree level: associate degree programs, 84 percent; bachelor's degree programs, 76 percent; master's degree programs, 70 percent; and doctoral degree programs, 100 percent. (See **Table 1.2**.)

Table 1.2
Response Rate for the Program Module of the New York Early Childhood Higher Education Inventory

Program Type	Number of Degrees Offered by IHE in Sample[1]	Number of Program Modules Administered[2]	Program Module Response Rate	
			Number[3]	Percentage
Associate	41	32	27	84%
Bachelor's	50	38	29	76%
Master's	106	83	58	70%
Doctoral	2	2	2	100%

[1] This includes only institutions that agreed to participate in the Inventory. In addition, as many institutions had multiple degrees with multiple contacts, this only includes the degrees that the institutions agreed to include in the Inventory. *S*ee Table 1.1.
[2] For those institutions offering more than one degree program at the same level (e.g., multiple bachelor's degrees), a member of our research team engaged in a phone conversation with the identified program representative to determine whether one or more program modules would be sent to them to complete. As a result, some institutions were sent one program module to be completed for multiple degree programs at the same level.
[3] During the data analysis phase, nine records were deleted from the sample because respondents completed fewer than five survey questions. One record was deleted because it was a duplicate, and one record was deleted because it was not an eligible degree program.

Data Collection

A link to the Program Module was emailed to all respondents using SurveyMonkey, an online survey software program. The Program Module was open for respondents for approximately 45 days during the spring 2015 semester. Respondents received up to six reminder emails and telephone calls during the data collection period.

Program Content of Degree Programs

The Program Module for degree programs included closed-ended questions focusing on the following topics:

- Goals of the early childhood degree program related to training students for specific job roles and early childhood settings.
- Program content and age-group focus. Respondents were asked to indicate whether topics within the following categories were required in order for students to complete the degree program. For each topic, the respondent was also asked to indicate whether coursework focused on infants and toddlers (birth through two years), preschoolers (three through four years), or children in grades K-2 or higher.
    - Child Development and Learning
    - Teaching Diverse Child Populations
    - Teaching and Curriculum

    - Teaching Skills in Early Childhood Settings
    - Family and Community
    - Development of Children's Mathematical Understanding
    - Teaching Math Skills to Children
    - Early Childhood Administration and Leadership (asked if offered, not required).
- Coursework alignment with state and national ECE standards, and degree program articulation
- Impact of the Universal Pre-Kindergarten program on degree program enrollment
- Strategies to assess student competencies
- Clinical experiences for students, i.e., student teaching and/or practicum experiences:
    - Timing and duration
    - Age-group focus (infant, preschool, early elementary)
    - Supervision: who supervises, criteria for selecting cooperating teachers at the site, resources for cooperating teachers
    - Field sites: criteria for selection
    - Differences in experiences for pre-service and experienced teachers
- Student population
    - Target: Pre-service teachers and/or experienced teachers
    - Number of students enrolled, and number attaining degrees
    - Available student services
- Challenges facing the degree program.

Data Analysis

Using SPSS (Statistical Package for the Social Sciences 22), Child Trends computed frequencies for all questions, by program degree level or type (associate, bachelor's, master's, doctoral). Data are reported by program level or type, rather than aggregated, as the preponderance of master's degree programs would skew the findings.

Faculty Module

Using an online survey tool completed by all faculty members teaching in a given degree program, the Faculty Module collects information on faculty employment status, teaching experience and expertise, professional development experiences and needs, and past experience within the early childhood field.

Sample Development, Participation, and Response Rate

During the telephone conversations with the program lead described above, we requested a list of names and email addresses for all full- and part-time/adjunct faculty members teaching in the early care and education program. Twenty-four of the twenty-eight associate degree programs (86 percent) that agreed to participate sent us either complete or partial faculty lists, as did 50 of the 65 participating four-year colleges and universities (77

percent). If the dean or coordinator also taught in the early childhood program, he or she was included in the Faculty Module sample.

A total of 499 surveys were emailed to individual faculty members, resulting in an eligible sample of 131 community college and 368 bachelor's, master's and/or doctoral degree faculty members. The final sample consisted of the 74 community college faculty members and 194 bachelor's, master's and/or doctoral degree faculty members who responded to the Faculty Module. The response rate for community college faculty was 55 percent, and for bachelor's and graduate degree faculty, 51 percent. (See **Table 1.3**.) While we cannot assume that findings from this module are representative of all early childhood teacher educators in the state, as documented in the Narrative Report, findings from the Faculty Module concerning course content topics covered and age-group focus were consistent with those from the Program Module.

Table 1.3
Response Rate for the Faculty Module of the New York Early Childhood Higher Education Inventory

Faculty Type	Number of Faculty Modules Administered[1]	Number of Faculty Responses[2]	Faculty Module Response Rate
Associate Degree Faculty	131	74	56%
Bachelor's and Graduate Degree Faculty[3]	368	194	53%
TOTAL	499	268	54%

[1]This number is adjusted for email bounces, and reflects the eligible sample from the faculty list supplied by program leads.
[2]During the data analysis process, 19 records were deleted because respondents answered fewer than 10 survey questions.
[3]Faculty may teach at one or more degree levels.

Data Collection

Each faculty member received a letter from the ECAC introducing CSCCE and Child Trends, describing the Inventory and encouraging participation. A link to the Faculty Module was emailed to all faculty identified for the sample using SurveyMonkey. The Faculty Module was open for approximately 45 days during the spring 2015 semester. Respondents received up to six reminder emails during the data collection period.

Faculty Module Content: All Degree Types

The Faculty Module included closed-ended questions focusing on the following topics:

- Current employment
  - Faculty status
  - Primary responsibility
  - Number of courses taught in a typical year
  - Number of students advised in a typical year
  - Primary teaching focus
  - Age-group expertise
- Current teaching expertise. Respondents were asked to indicate whether, within the past two years, they had taught topics within the following categories. For each topic, respondents were also asked to indicate whether the coursework focused on infants and toddlers, preschoolers, and/or children in grades K-2 or higher.
  - Child Development and Learning
  - Teaching Diverse Child Populations
  - Teaching and Curriculum
  - Teaching Skills in Early Childhood Settings
  - Family and Community
  - Development of Children's Mathematical Understanding
  - Teaching Math Skills to Children
  - Early Childhood Administration and Leadership (asked if offered, not required).
- Integration of *The Core Body of Knowledge: New York State's Core Competencies for Early Childhood Educators* into courses.
- Professional development and experience in the early childhood field
  - Professional development experiences in the past three years
  - Professional roles in the past 10 years
  - Additional professional development that would be helpful
- Resources that would be helpful to the degree program
- Demographics and educational background
  - Highest level of education
  - Credits in early childhood/child development
  - Gender
  - Race/ethnicity
  - Age
  - Language capacity

Data Analysis

Using SPSS (Statistical Package for the Social Sciences 22), we computed frequencies for all questions, for each degree program (associate, bachelor's, master's, doctoral). If faculty members reported that they taught in more than one degree program at their institution, they were included in the analysis for each degree program in which they taught.

CHAPTER 2: EARLY CHILDHOOD HIGHER EDUCATION DEGREE PROGRAMS

Primary Goals of New York Early Childhood Degree Programs

The Inventory asked program deans/coordinators to select the primary goal of their degree programs. The options included:

- To prepare students for teaching and/or administrative roles ONLY for children birth to five – before they enter kindergarten.
- To prepare students for teaching and/or administrative roles in early childhood or early childhood/childhood settings – defined as birth to grade 2 or birth to grade 6.
- To prepare students for the roles of early interventionists or early childhood special educators.
- To prepare students for multiple roles involving young children, working in many types of settings.
- To prepare students for a career as a researcher or a college-level faculty member.

(See **Figure 2.1**.)

- Over one-half of associate degree programs reported that their primary goal was "to prepare students to work in multiple roles involving young children, working in many types of settings," and nearly one-third reported that their primary goal was to "prepare students for teaching and/or administrative roles in early childhood or early childhood/childhood settings."

  ⇒ Only 15 percent of associate degree programs reported any other goals.

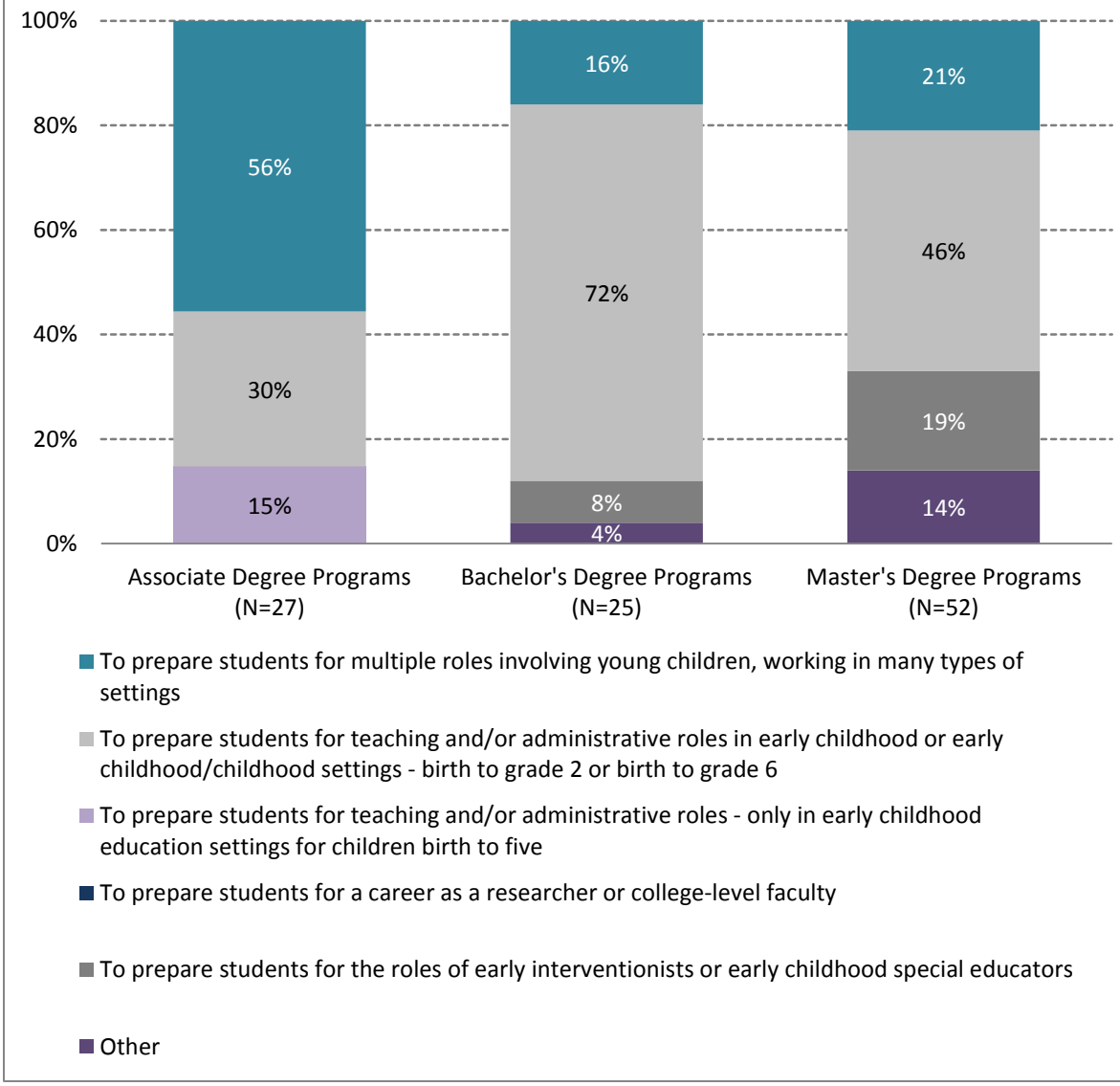
- Almost three-quarters of bachelor's degree programs reported that their primary goal was to "prepare students for teaching and/or administrative roles in early childhood or early childhood/childhood settings."

  ⇒ Less than one-third percent of bachelor's degree programs reported any other goals.

- Slightly less than one-half of master's degree programs also reported that their primary goal was to "prepare students for teaching and/or administrative roles in early childhood or early childhood/childhood settings."

  ⇒ Approximately one-fifth of master's degree programs reported that their primary goal was to "prepare students for multiple roles involving young children" or to "prepare students for the roles of early interventionists or early childhood special education teachers."

Figure 2.1: Primary Goals of New York Early Childhood Higher Education Degree Programs, by Program



Students Served in New York Early Childhood Degree Programs

The Inventory asked program leads a series of questions about the students in their programs.

Program leads were first asked to indicate their target student population. The options included:

- Adults already working in early childhood settings;
- Pre-service students; and
- A mix of both groups.

They were then asked to estimate the number of students registered in the degree program, and the number of degrees conferred during the 2013-2014 academic year.

Finally, program leads were asked to indicate which student services, if any, were offered to students in the degree program. These included three general categories of services:

- Counseling support, such as academic and financial aid counseling;
- Access support, such as classes in convenient locations and at convenient times (e.g., evenings, weekends); and
- Skills support, such as academic tutoring and assistance with technology.

If the service was offered, respondents were asked to indicate whether the service was offered specifically to students in the degree program, and/or to the student body as a whole.

Targeted Student Population (See **Figure 2.2**)

- Associate and master's degree programs were more likely than bachelor's degree programs to report targeting both groups of students: pre-service students and those already working in the early childhood field.

  ⇒ Almost three-quarters of associate degree and master's degree programs reported targeting both groups of students.

  ⇒ Approximately 44 percent of bachelor's degree programs reported targeting both groups of students.

- Bachelor's degree programs were the most likely of the degree programs to report exclusively targeting pre-service students. Nearly 50 percent did so, compared to less than 20 percent of associate and less than 15 percent of master's degree programs.

- Less than 10 percent of degree programs at all levels reported exclusively targeting adults already working in early childhood settings.

Number of Students and Degrees Conferred (See **Figures 2.3** and **2.4**)

- Degree programs reported a wide range in the numbers of students enrolled in their programs (from one to more than 100), and in the number of degrees conferred (from one to more than 100) in the 2013-2014 academic year.

- Associate degree programs were the most likely of the degree programs to report enrolling more than 100 students. Twenty-seven percent of associate degree programs did so, compared to approximately 19 percent of bachelor's and 14 percent of master's degree programs.

  ⇒ Master's degree programs were the most likely of the degree programs to report enrolling 25 or fewer students. About one-half of master's degree programs did so, compared to approximately one-quarter of associate and bachelor's degree programs.
  ⇒ Bachelor's degree programs were the most likely of the degree programs to report enrolling between 26-50 students. Thirty-eight percent of bachelor's degree programs did so, compared to approximately one-quarter of associate and master's degree programs.

Student Services (See **Figures 2.5, 2.6, and 2.7**)

- Degree programs reported that students were offered a variety of services to help them access their education and to succeed in their educational careers. These included three general categories of service: counseling support, such as academic and financial aid counseling; access support, such as classes in convenient locations and at convenient times (e.g., evenings, weekends); and skills support, such as academic tutoring and assistance with technology.

- There was some variation among degree programs in counseling support:

  ⇒ Almost all degree programs offered financial aid and academic counseling support.
  ⇒ Associate degree programs (35 percent) were less likely to report offering cohort programs, in which small groups of students move through their degree programs together, than were bachelor's (59 percent) or master's (79 percent) degree programs.

- There was some variation among degree programs in access support:

  ⇒ Associate degree programs were the most likely to report offering classes off campus in community-based settings. Sixty percent did so, compared to 39 percent of bachelor's and 45 percent of master's degree programs.
  ⇒ Bachelor's degree programs were less likely to offer alternative work schedules for working adults (e.g., evenings, weekend classes). Thirty-nine percent did so, compared to 92 percent of associate and 86 percent of master's degree programs.

- There was some variation among degree programs in skills support:

  ⇒ Master's programs were less likely to offer academic tutoring in subject areas other than reading/writing. Sixty-two percent of master's degree programs offered academic tutoring in math, compared to 100 percent of the associate and bachelor's degree programs.

- There was some variation in whether student services were offered to all students in the college or university or were targeted specifically to students in the early childhood degree program.

  ⇒ Academic tutoring, financial aid counseling, and academic assistance for students who are English language learners were generally reported as offered to all students. Less than one-quarter of degree programs offered these services tailored specially to students in the early childhood degree program.
  ⇒ Three-quarters of master's, 60 percent of bachelor's, and 35 percent of associate degree programs reported offering cohort models to students. Most of these degree programs (42 percent master's, 54 percent bachelor's, 63 percent associate) tailored the cohort model to students in their early childhood programs.
  ⇒ Almost all degree programs offered academic counseling to students. About one-third of degree programs tailored this service to students in the early childhood degree program.
  ⇒ Although not all programs reported offering students classes located off-campus in community locations, one-half of bachelor's, one-third of master's, and one-quarter of associate degree programs that did offer this service tailored off-campus classes to students in the early childhood degree programs.

Figure 2.2: Target Student Populations of New York Early Childhood Higher Education Degree Programs, by Program

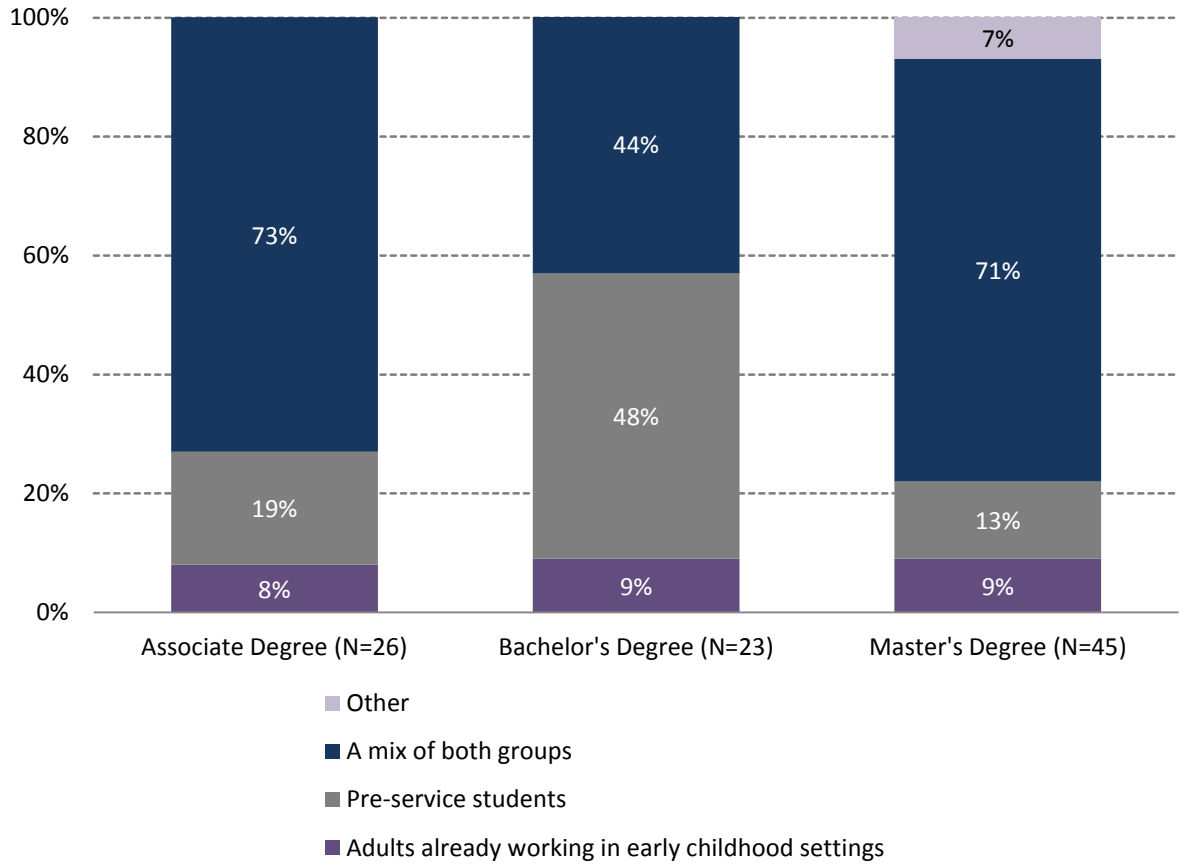


Figure 2.3: Number of Students Enrolled in New York Early Childhood Higher Education Degree Programs in the 2013-2014 Academic Year, by Program

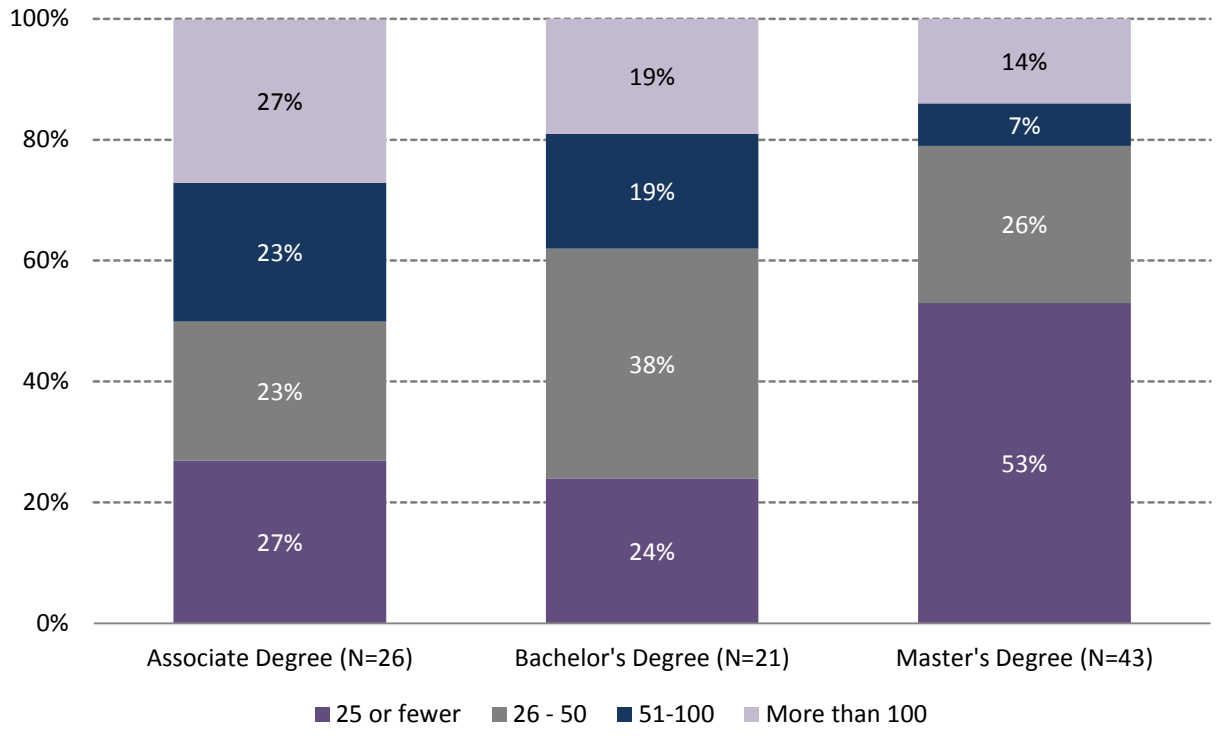


Figure 2.4: Number of Degrees Conferred in New York Early Childhood Higher Education Degree Programs in the 2013-2014 Academic Year, by Program

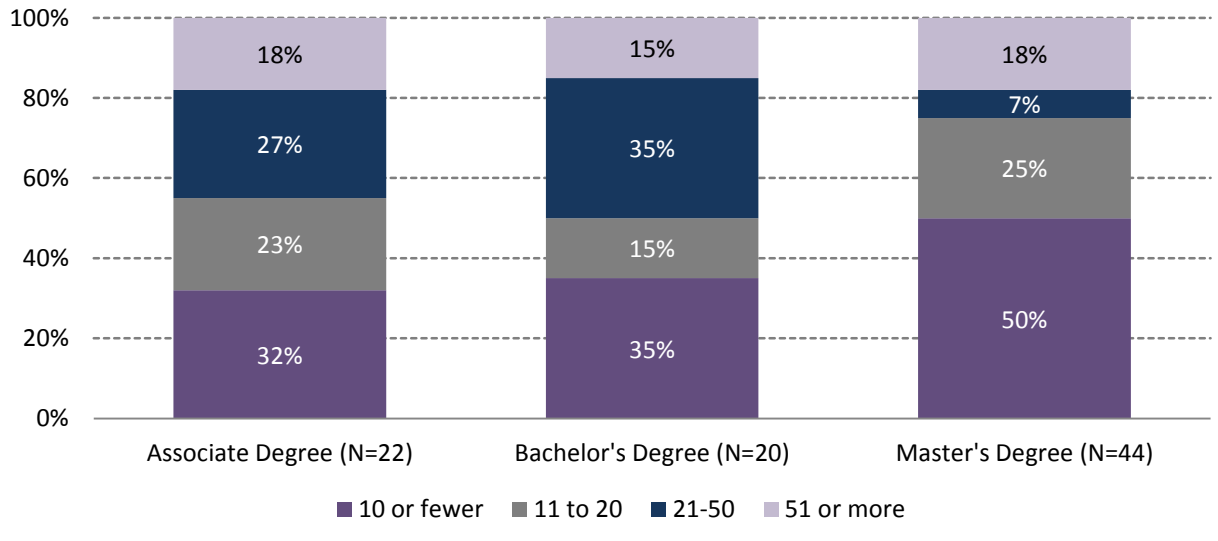


Figure 2.5: Services Offered to Students in New York Early Childhood Higher Education Degree Programs: Counseling Support, by Program

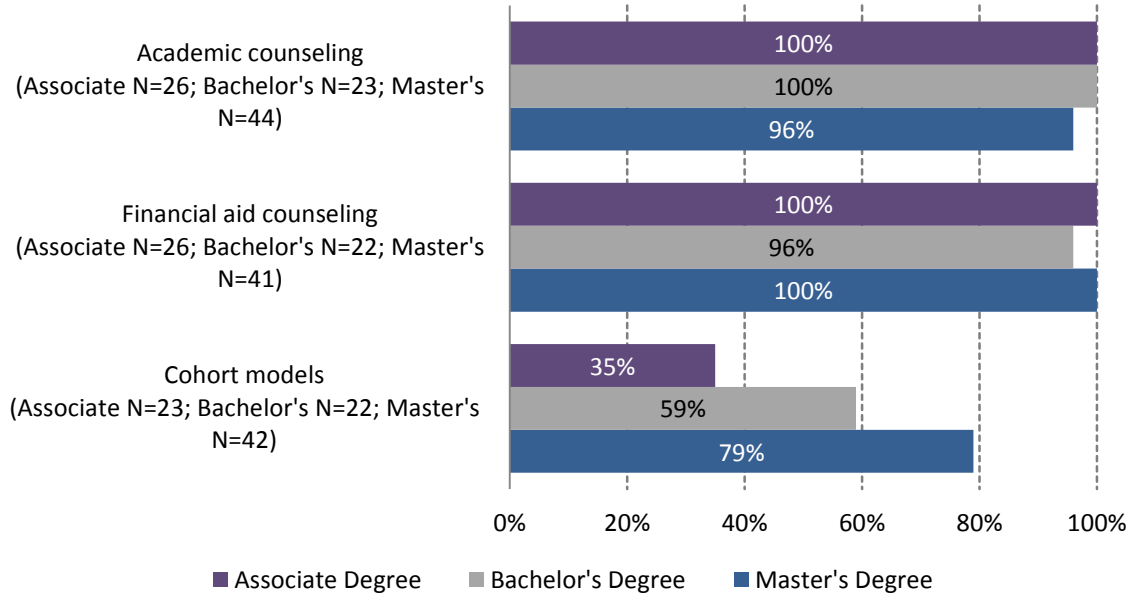


Figure 2.6: Services Offered to Students in New York Early Childhood Higher Education Degree Programs: Access Support, by Program

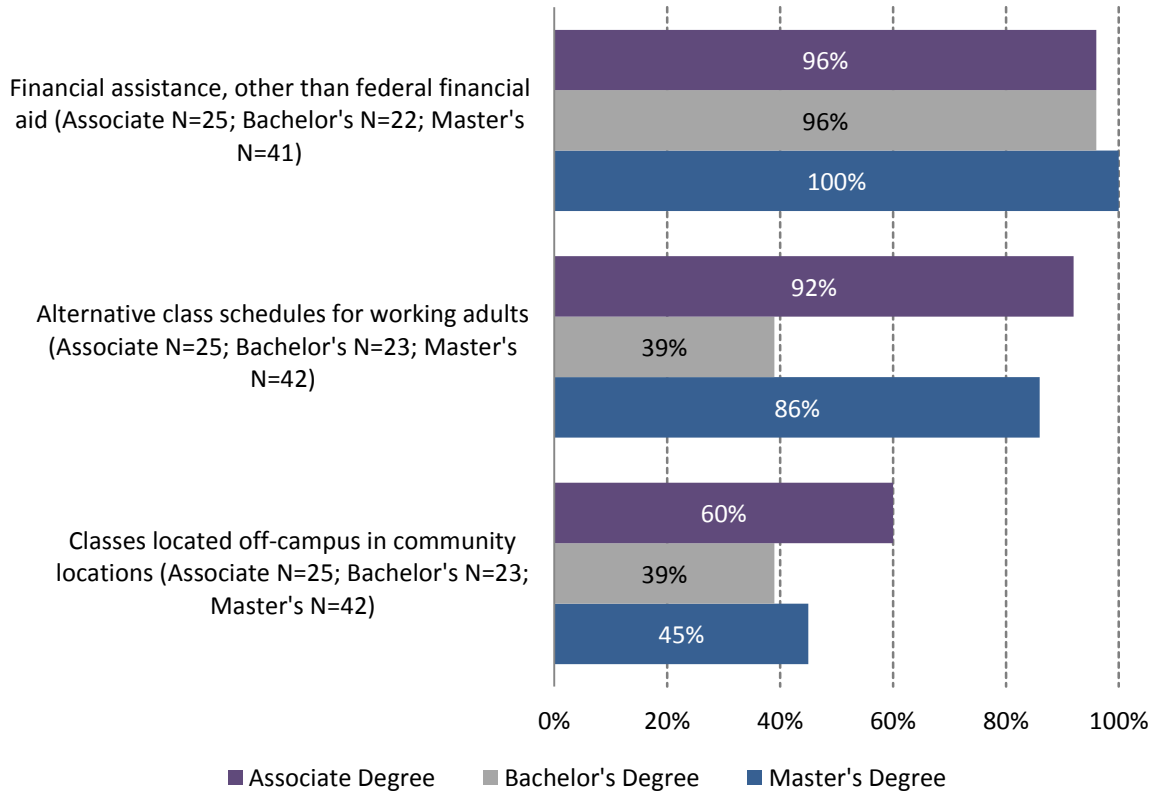
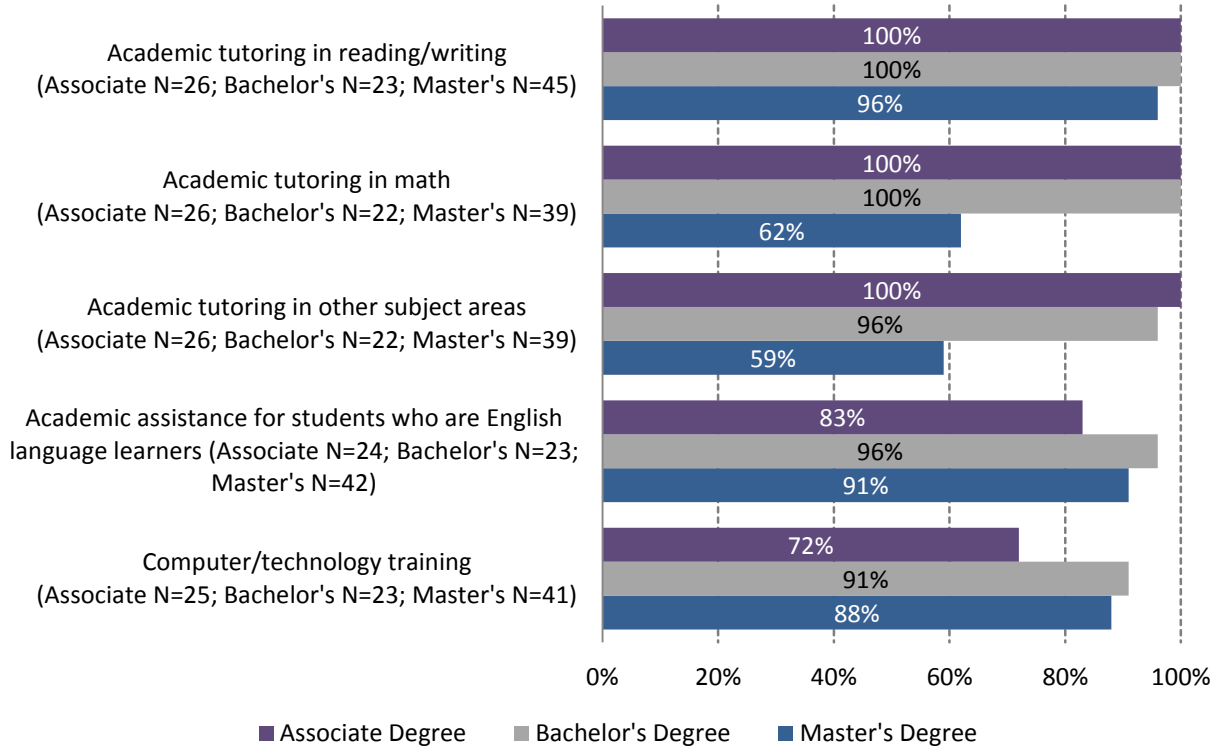


Figure 2.7: Student Services Offered in New York Early Childhood Higher Education Degree Programs: Skills Support, by Program



Content and Age-Group Focus of New York Early Childhood Degree Programs

The Inventory asked deans/coordinators to identify the topics required for the degree. Topics were categorized into broad content areas:

1. Child Development and Learning
2. Teaching Diverse Child Populations
3. Teaching and Curriculum
4. Teaching Skills in Early Childhood Settings
5. Early Childhood Administration and Leadership (offered, not required)
- Supervision and operations
- Organization/systems
6. Family Engagement[1]
7. Early Mathematics[1]
- Development of young children's mathematical understanding
- Teaching math skills to young children

Respondents were then asked to specify the age-group focus of the required topics. The three age groups were:

1. Infants and toddlers (birth to 2 years)
2. Preschool (3 and/or 4 years)
3. Kindergarten through 2nd grade or higher

[1]Findings related to family engagement and early mathematics are reported in Chapter 5.

- *Child Development and Learning:* Ninety percent or more of degree programs at all levels reported requiring each of the seven "child development and learning" topics listed in the Inventory, with two exceptions. (See **Figure 2.8** and **Appendix Table A2-1**.)

  ⇒ Sixty-five percent of associate and 84 percent of bachelor's degree programs reported requiring the topic "development of dual language learners."
  ⇒ Eight-eight percent of master's degree programs reported requiring the topic "development of children's scientific understanding."

- *Teaching Diverse Child Populations:* Three-quarters or more of degree programs at all levels reported requiring each of the five "teaching diverse child populations" topics, with one exception. (See **Figure 2.9** and **Appendix Table A2-2**.)

⇒ Sixty-eight percent of associate degree programs required "teaching children who are dual language learners."

- *Teaching and Curriculum*: Degree programs varied in their requirements related to the nine "teaching and curriculum" content areas. (See **Figure 2.10** and **Appendix Table A2-3**.)

  ⇒ More than 80 percent of associate and bachelor's degree programs reported requiring each of the nine topics listed in the Inventory.

  ⇒ More than 80 percent of master's degree programs reported requiring seven of the nine topics. The two topics required by less than three-quarters of master's degree programs were:
  - Teaching art to children (65 percent); and
  - Supporting and extending children's physical skills (74 percent).

- *Teaching Skills in Early Childhood Settings:* Nearly 90 percent or more of degree programs at all levels reported requiring each of the three "teaching skills in early childhood settings" listed in the Inventory. (See **Figure 2.11** and **Appendix Table A2-4**.)

- *Early Childhood Administration and Leadership:* Overall, a smaller percentage of degree programs at all levels reported offering coursework related to "early childhood administration and leadership" than the content area described above. Master's degree programs were less likely to offer these courses than were other degree programs.

  ⇒ The only topics offered by more than one-half of all degree programs (see **Figure 2.12**) were:
  - Assessment and documentation to inform teaching and learning;
  - Assessment and documentation to inform program quality;
  - Building relationships with other teachers and/or early childhood professionals;
  - Guiding practitioners in implementing curriculum and appropriate teaching strategies; and
  - The early childhood system and public policy.

Age-Group Focus (See **Appendix Tables A2-1** through **A2-4**)

- Overall, associate degree programs were less likely to report focusing their coursework on topics for children in kindergarten through 2nd grade or higher, compared to bachelor's and master's degree programs.

- Child Development and Learning topics varied by degree program, age group, and topic:

  ⇒ Associate and bachelor's degree programs were less likely to report focusing coursework on the "development of dual language learners" for infants and toddlers.

  ⇒ Bachelor's and master's degree programs were less likely to report focusing coursework on "development of children's scientific understandings" for infants and toddlers.

- Teaching and curriculum topics varied by age group and topic:

  ⇒ All degree programs were less likely to report focusing their coursework on teaching science, math, and social studies for infants and toddlers.

  ⇒ Bachelor's degree programs were less likely to focus on all listed teaching and curriculum topics for children ages 3 and 4 years than were associate and master's degree programs.

- Associate degree programs were less likely to report focusing coursework on observation, assessment and documentation to inform teaching in early childhood settings for infants and toddlers than were bachelor's and master's programs.

*The following figures display the percentages of degree programs requiring various topics for students to attain their degree. See **Appendix Tables A2-1** through **A2-4** for the age-group focus of each topic.*

Figure 2.8: Coursework on Child Development and Learning Required in New York Early Childhood Higher Education Degree Programs, by Program

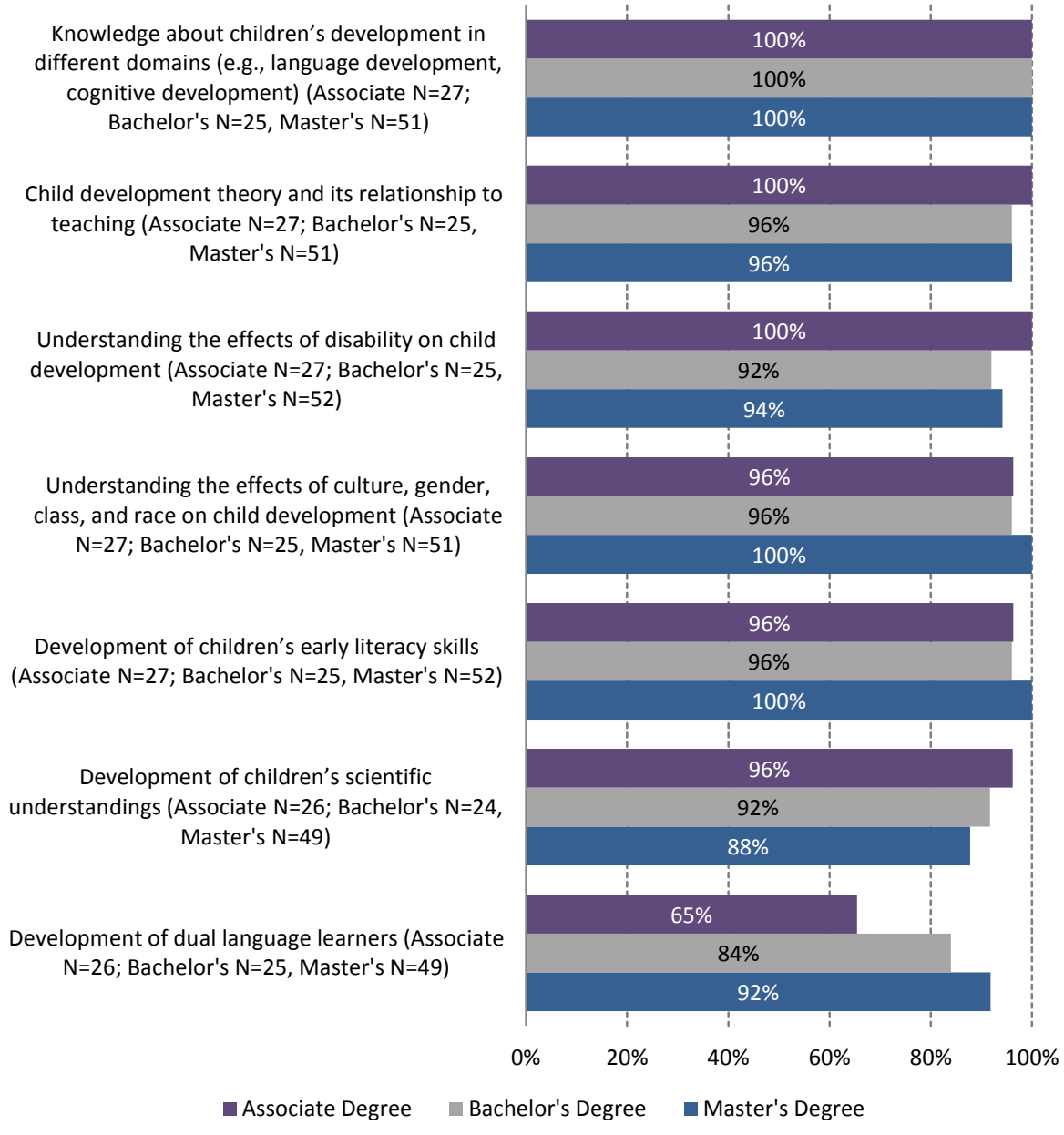


Figure 2.9: Coursework on Teaching Diverse Child Populations Required in New York Early Childhood Higher Education Degree Programs, by Program

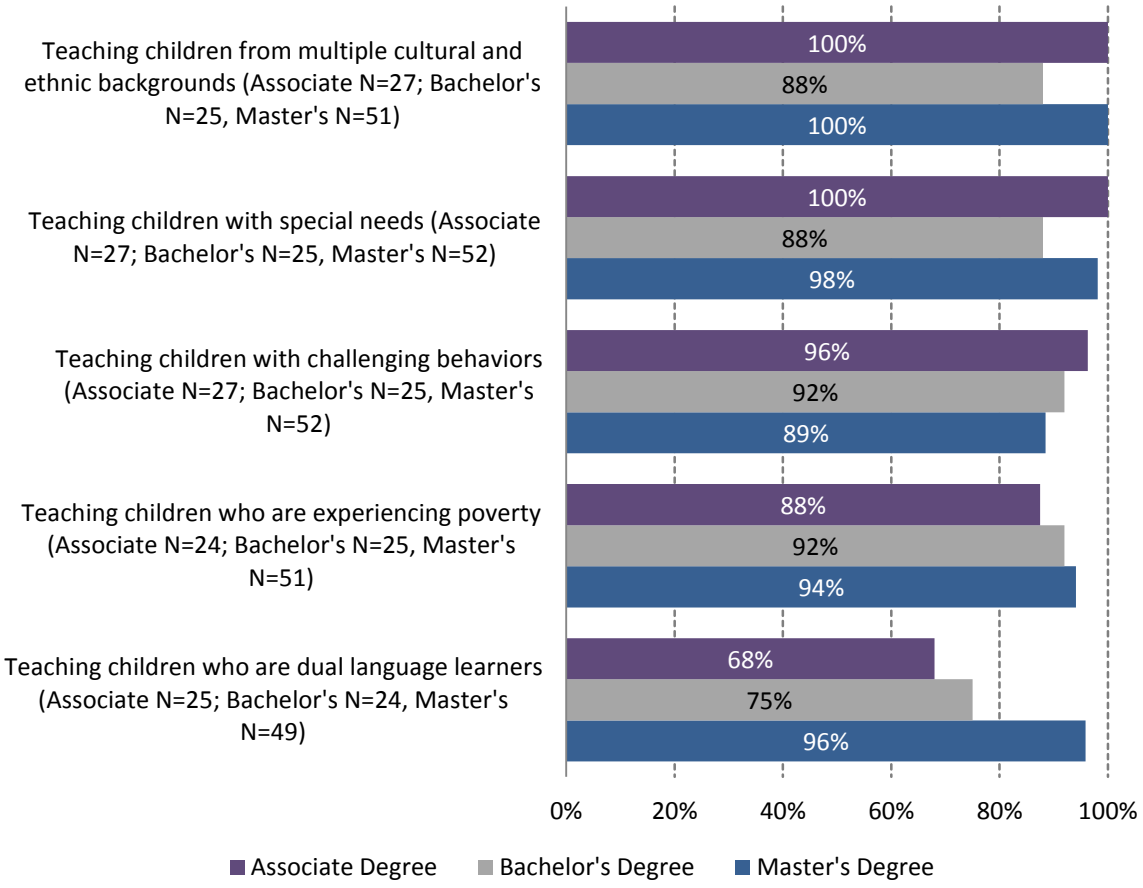


Figure 2.10: Coursework on Teaching and Curriculum Required in New York Early Childhood Higher Education Degree Programs, by Program

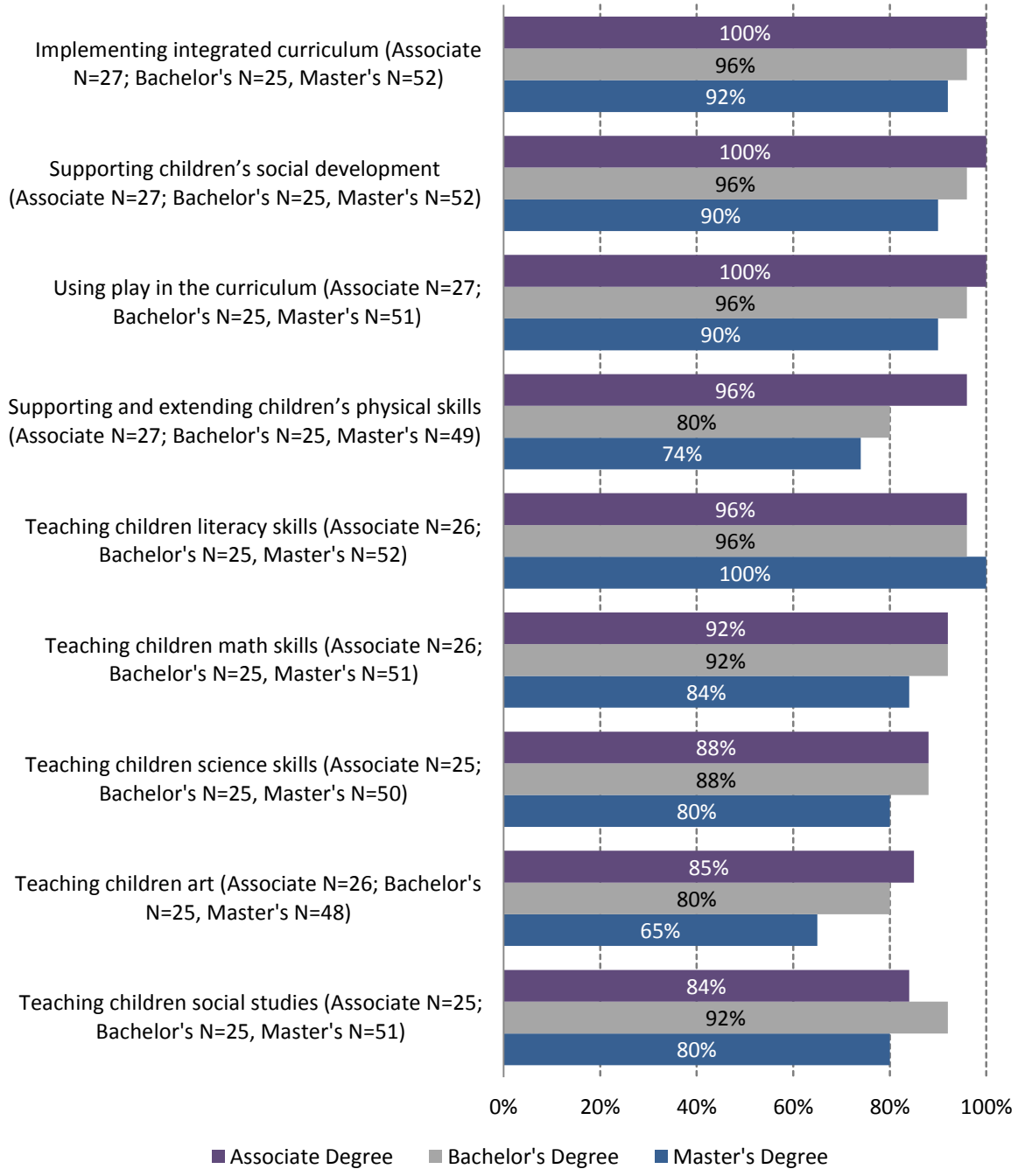


Figure 2.11: Coursework on Teaching Skills in Early Childhood Settings Required in New York Early Childhood Higher Education Degree Programs, by Program

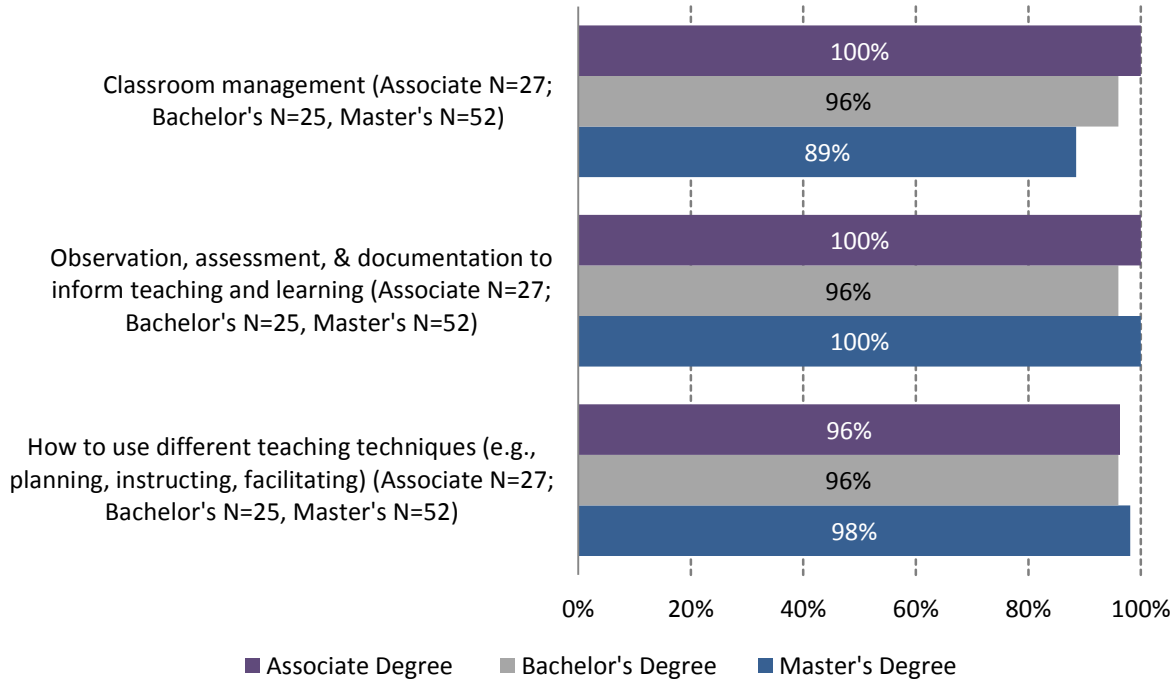


Figure 2.12: Coursework on Administration and Leadership Offered in New York Early Childhood Higher Education Degree Programs, by Program

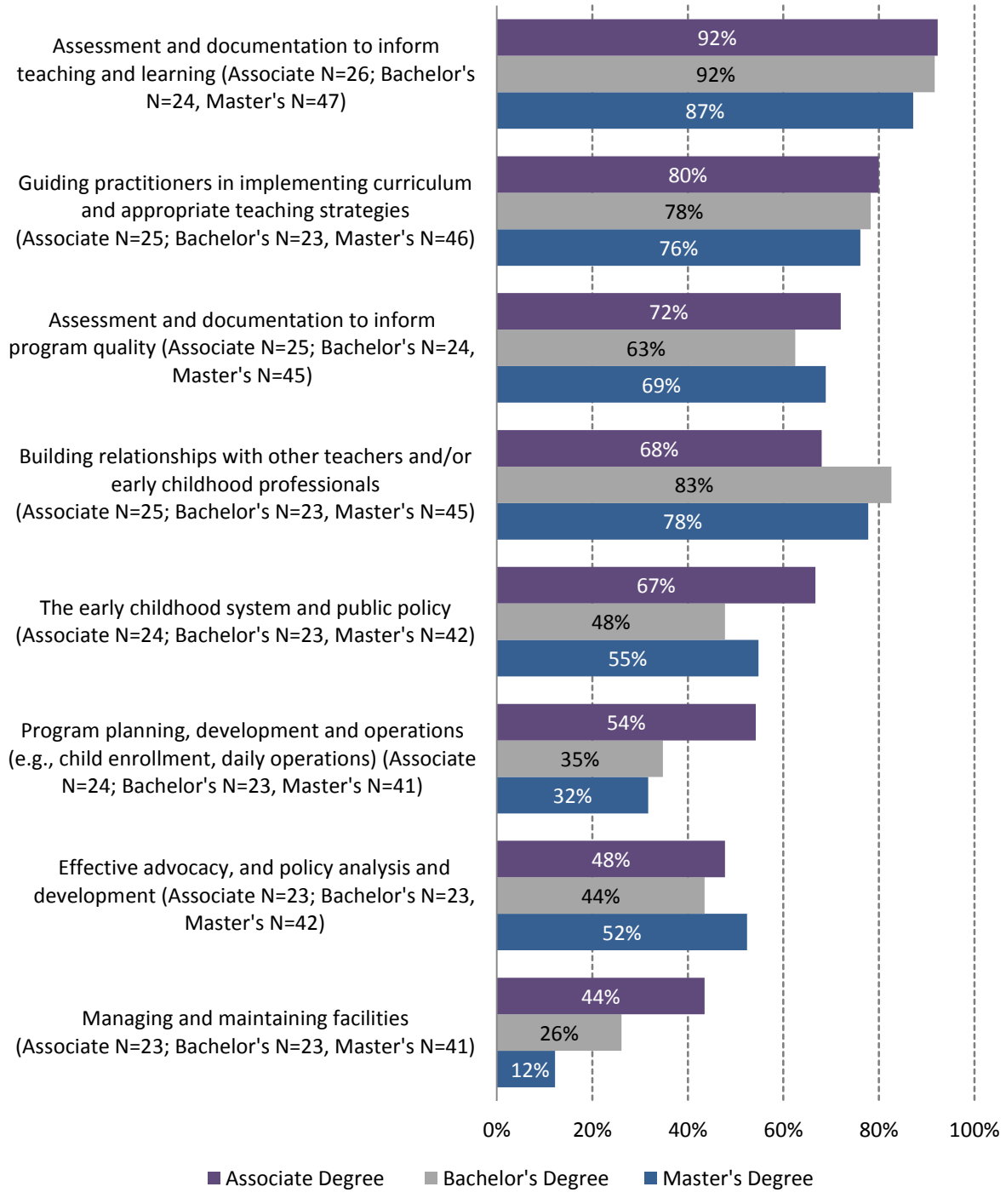
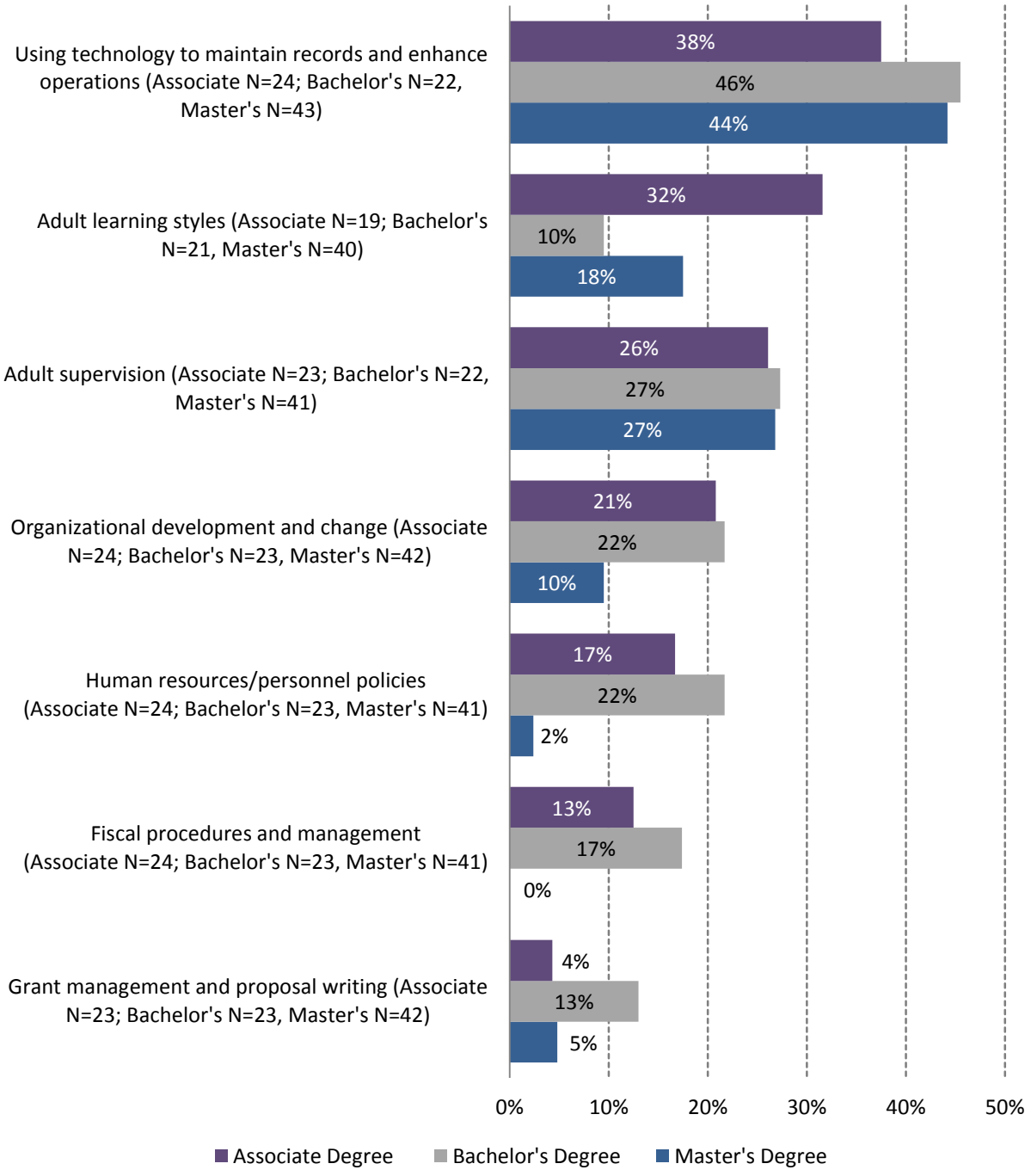


Figure 2.12: Coursework on Administration and Leadership Offered in New York Early Childhood Higher Education Degree Programs, by Program (Continued)



Student Field Experiences

The Inventory asked respondents about two types of field experiences offered to students:

1. Student teaching: defined as full-time immersion in a classroom, with increasing responsibility for curriculum planning and teaching, and supervision by a cooperating teacher.
2. Practicum: defined as an experience that is short in duration, associated with a course, often focused on a particular skill or population of children, and supervised by a faculty member and/or mentor.

If the field experience was required for attaining the degree, the Inventory asked about:

1. Timing and duration of the field experience;
2. Age-group focus of the field experience;
3. Faculty status of the faculty supervisor;
4. Criteria for selecting field sites;
5. Criteria for selecting cooperating teachers at the field sites (teachers at the sites who provide supervision and guidance for the students);
6. Resources provided to cooperating teachers; and
7. Differences in field experience structures for pre-service and experienced teachers.

- Overall, degree programs were more likely to require practicum experiences than student teaching. In addition, bachelor's and master's degree programs were more likely to require student teaching experiences than were associate degree programs. (See **Figure 2.13**.)

  ⇒ While over three-quarters of bachelor's (83 percent) and master's (78 percent) degree programs reported requiring students to participate in student teaching, less than one-third of associate degree programs reported doing so.

For degree programs that required field experience:

- Bachelor's and master's degree programs were more likely to require student teaching focused on children in kindergarten through 2nd grade than were associate degree programs. When age groups were required, degree programs were more likely to require a focus on preschoolers and school-age children than on infants and toddlers. (See **Figure 2.14**.)

⇒ Less than one-quarter of bachelor's degree programs required student teaching focused on infants and toddlers; more than one-half (58 percent) on preschool-age children; and 95 percent on school-age children.

⇒ One-fifth of master's degree programs required a student teaching focus on infants and toddlers; over two-thirds (69 percent) on preschool-age children; and 86 percent on school-age children.

- Bachelor's and master's programs were also more likely to report requiring practicum experiences to focus on preschool and school-age children than on infants and toddlers. (See **Figure 2.15**.)

  ⇒ Roughly one-half or more degree programs at all levels (52 percent associate, 70 percent bachelor's, and 49 percent master's) required a focus on preschool-age children.

  ⇒ Three-quarters of bachelor's degree and 77 percent of master's degree programs reported requiring practicum experiences focused on the children in kindergarten through 2nd grade or higher.

  ⇒ While nearly one-half of associate degree programs (49 percent) required a focus on children from birth to two years, only 30 percent of bachelor's and 42 percent of master's degree programs did so.

- Almost all degree programs at all levels reported having criteria for selecting student teaching field sites and practicum sites.

  ⇒ All associate degree, approximately 94 percent of master's degree, and 88 percent of bachelor's degree programs reported having criteria for selecting student teaching field sites.

  ⇒ Almost all associate and bachelor's degree programs (95 percent), and approximately 83 percent of master's degree programs, reported having criteria for selecting practicum sites.

- Over two-thirds of all degree programs reported that the age of children served at the site was one of the criteria used to select field sites for both student teaching and practicum experiences. Degree programs varied in other criteria used to select field sites for both student teaching and practicum experiences. (See **Figure**s **2.16** through **2.19**.)

  ⇒ The four most frequently reported criteria for both student teaching and practicum sites reported by associate degree programs were:
    - Location of site (e.g., proximity to college/university or student workplace);
    - Site is a public school (practicum experiences);
    - Age of children served at the site; and
    - Degree program/college has a partnership with a school district (student teaching).

⇒ The three most frequently reported criteria for student teaching and practicum sites reported by bachelor's degree programs were:
  - Age of children served at the site;
  - Degree program/college has a partnership with a school district; and
  - Teacher qualification/characteristics (asked about in more detail in another question).

⇒ The three most frequently reported criteria for both student teaching and practicum sites reported by master's degree programs were:
  - Children with disabilities served at the site (student teaching);
  - Age of children served at the site; and
  - Teacher qualification/characteristics (asked about in more detail in another question).

- All degree programs reported using cooperating teachers to supervise student teaching. Bachelor's and associate degree programs were more likely to use cooperating teachers to work with students at practicum sites. All bachelor's and 96 percent of associate degree programs reported doing so, compared to 71 percent of master's degree programs.

- The most frequently reported criterion reported by degree programs at all levels for both student teaching and practicum experiences was "cooperating teacher holds a particular state credential or equivalent." (See **Figures 2.20** and **2.21**.)

- Student teaching experiences primarily occurred at the end of the course of study in all degree programs.

  ⇒ Almost all (95 percent) bachelor's and three-quarters of associate and master's degree programs reported that student teaching occurred at the end of the course of study. In addition, one-third of master's degree programs reported that student teaching occurred within the first year of study.

  ⇒ One-quarter of master's and associate degree programs reported that student teaching occurred during the middle of the course of study.

- The first practicum experience occurred at different times for students at different degree levels.

  ⇒ Approximately one-third associate degree programs reported that the first practicum occurred at the end of the course of study. Forty-one percent reported that it occurred during the middle of the course of study, and 27 percent within the first year of study.

  ⇒ Approximately two-thirds of bachelor's degree programs reported that the first practicum occurred during the middle of the course of study. Approximately one-quarter reported that it occurred within the first year of study, and five percent at the end of the course of study.

⇒ Approximate two-thirds of master's degree programs reported that the first practicum occurred during the first year of study. Approximately one-quarter reported that it occurred at the end of the course of study, and nine percent reported that it occurred in the middle of the course of study.

- Master's programs were more likely to report structuring student teaching and practicum experiences differently for novice and experienced teachers. Less than one-quarter of associate and bachelor's degree programs reported doing so, compared to 60 percent of master's degree programs requiring student teaching and one-third of master's degree programs requiring practicum experience.

Figure 2.13: Field Experiences Required in New York Early Childhood Higher Education Degree Programs, by Program

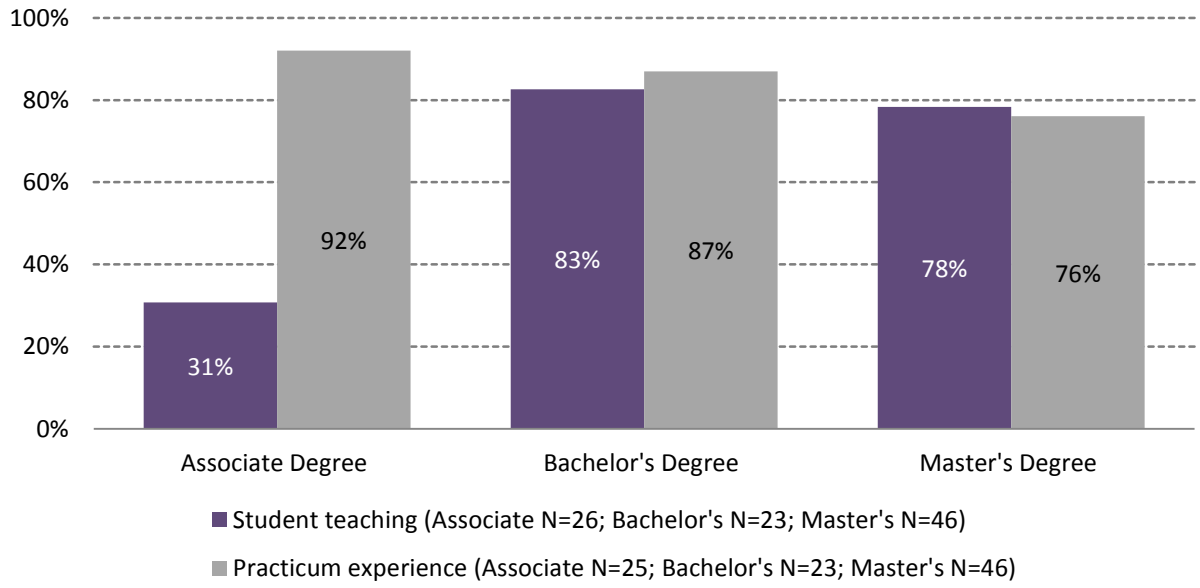


Figure 2.14: Age-Group Focus of Student Teaching in New York Early Childhood Higher Education Degree Programs, by Program

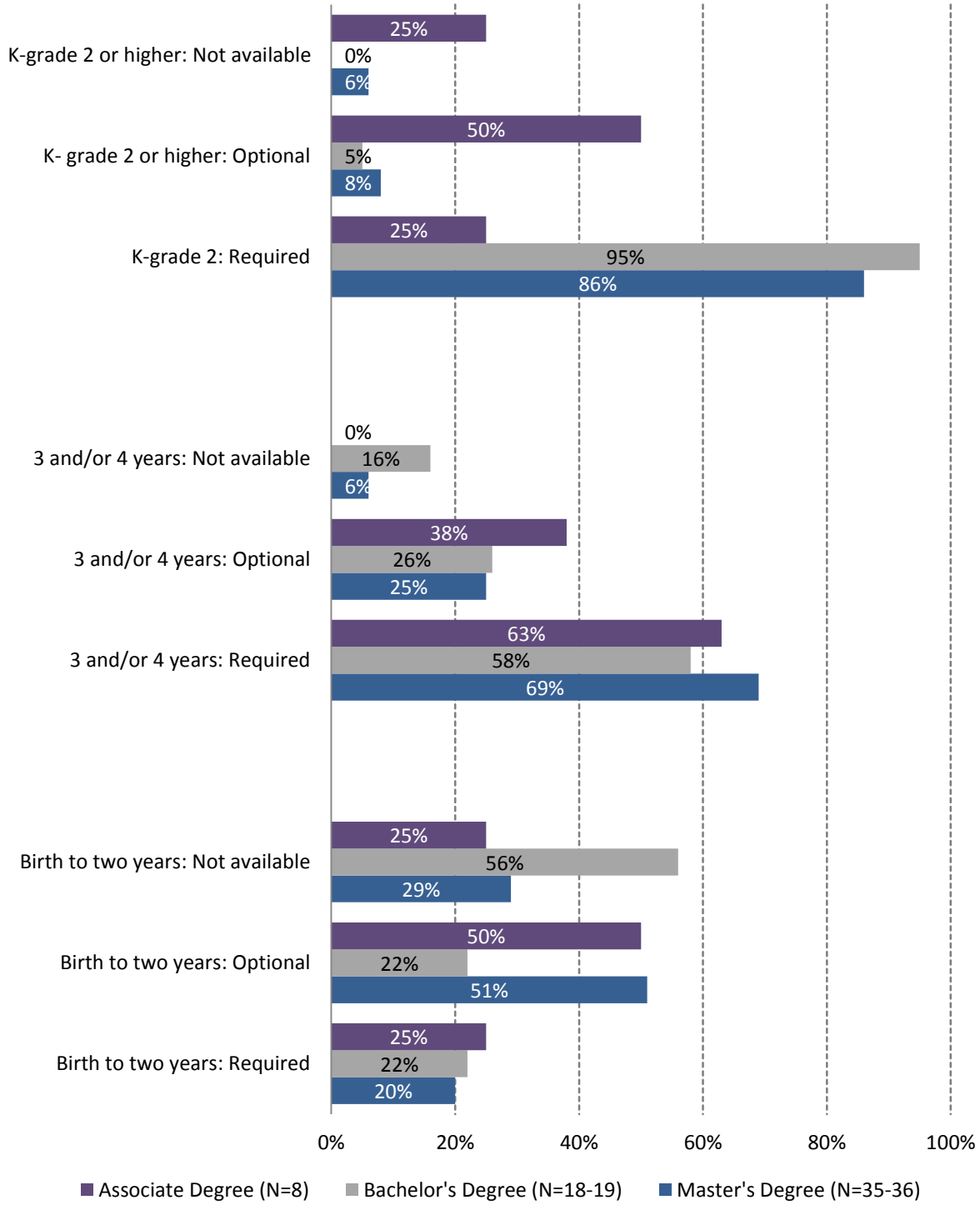


Figure 2.15: Age-Group Focus of Practicum Experiences in New York's Early Childhoood Higher Education Degree Programs, by Program

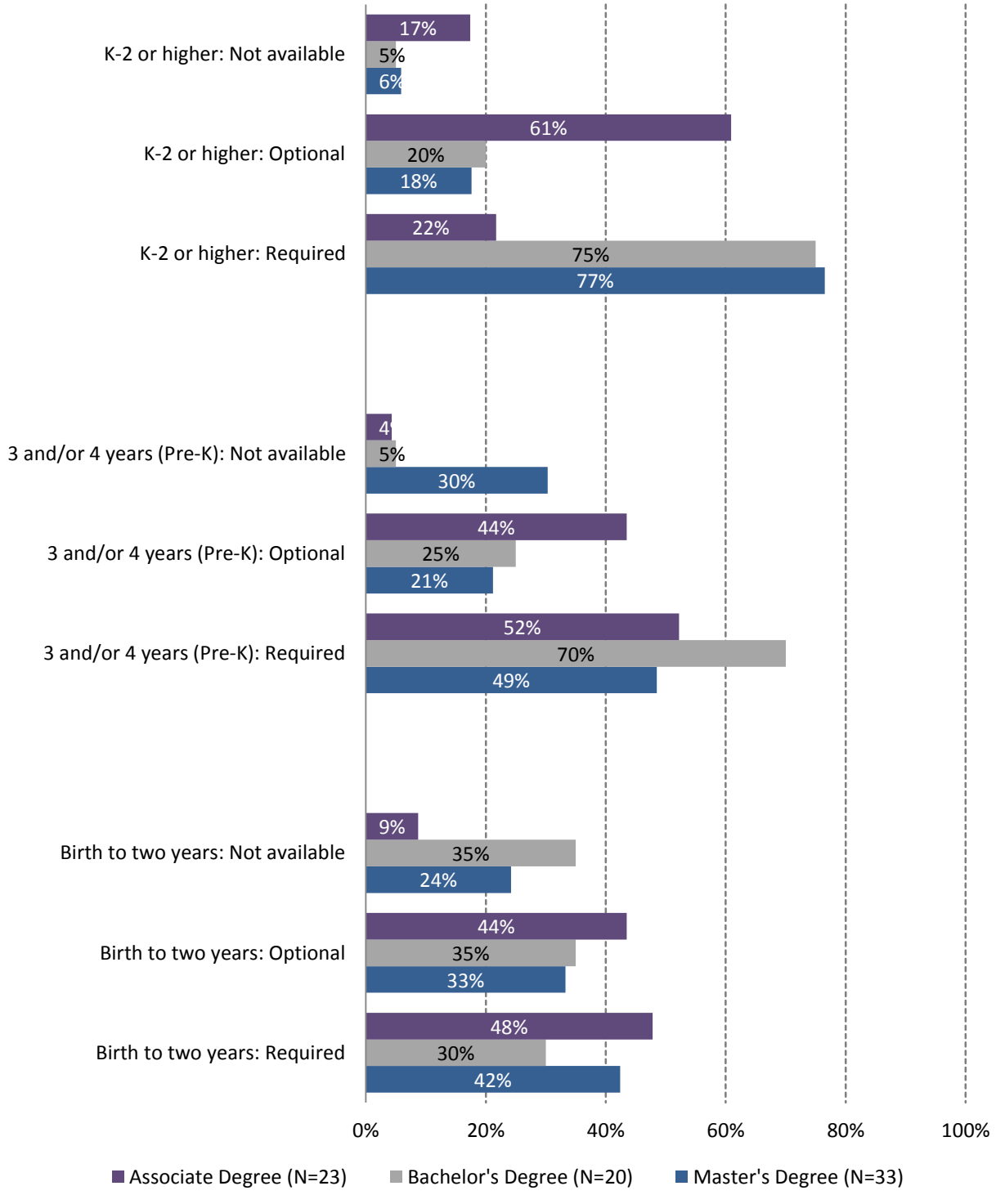


Figure 2.16: Criteria for Selecting Student Teaching Sites in New York Early Childhood Higher Education Degree Programs: Child Characteristics, by Program

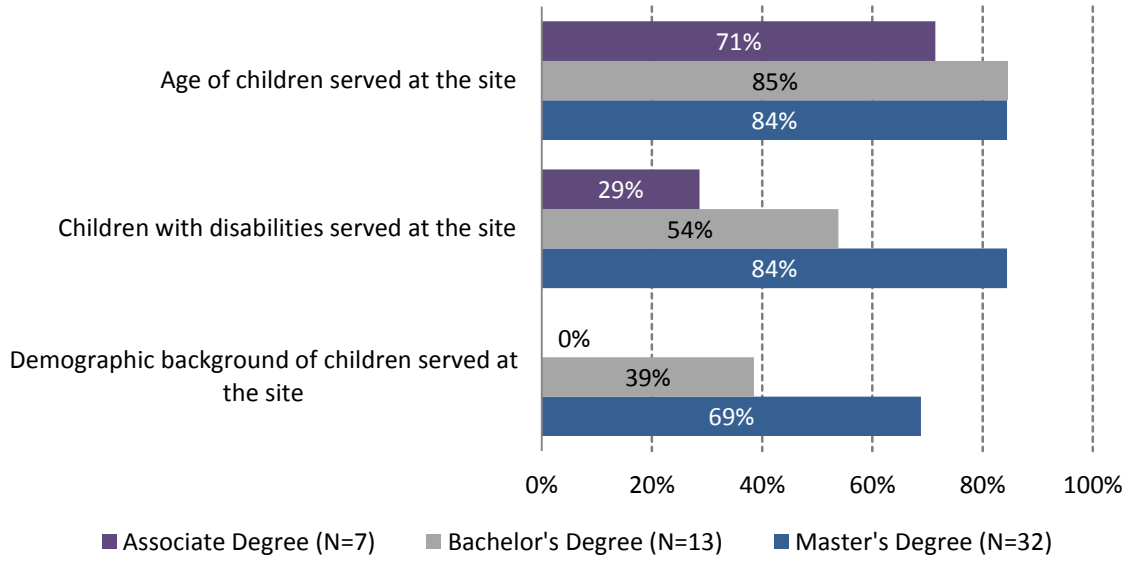


Figure 2.17: Criteria for Selecting Student Teaching Sites in New York Early Childhood Higher Education Degree Programs: Site Characteristics, by Program

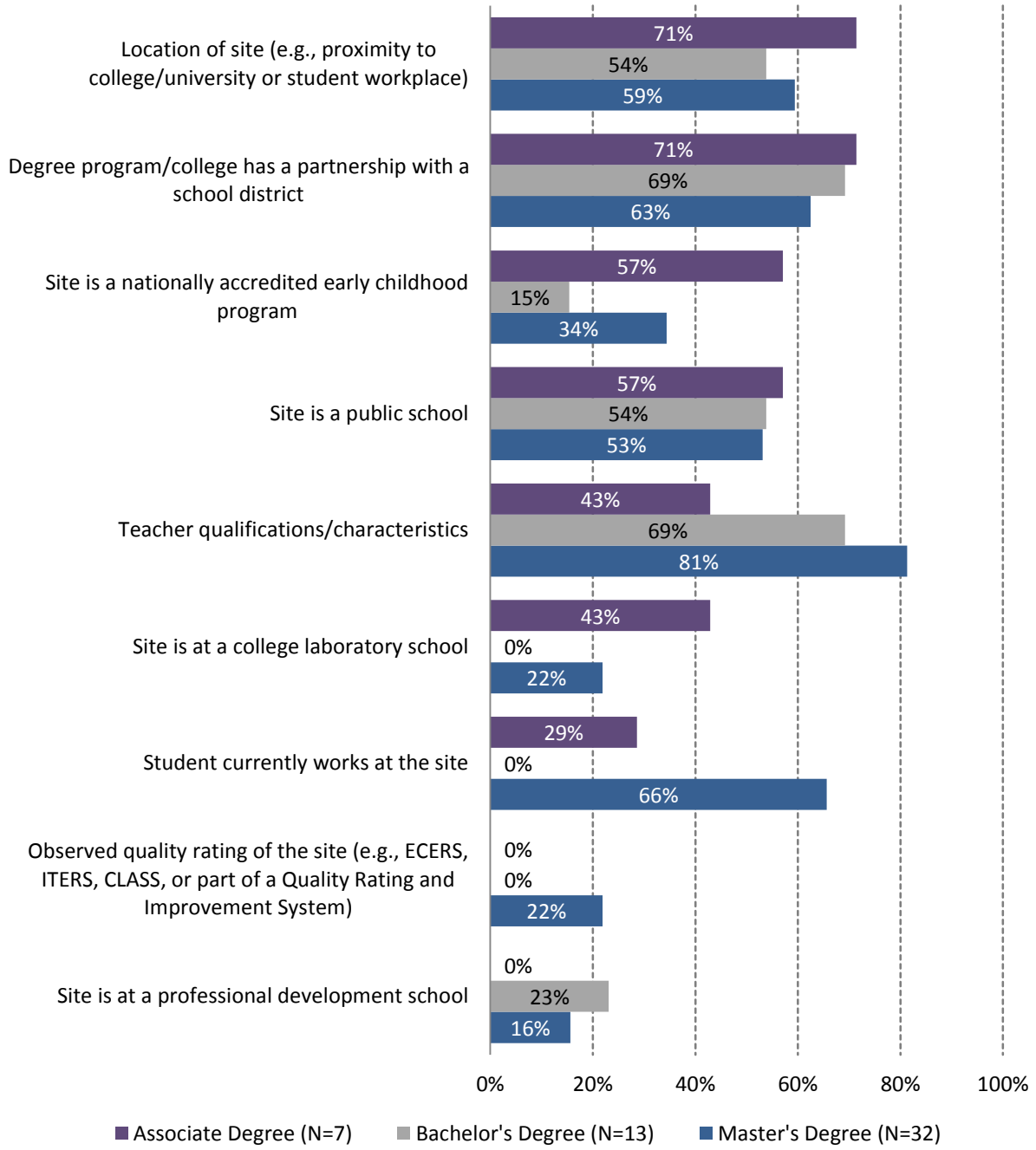


Figure 2.18: Criteria for Selecting Practicum Sites in New York Early Childhood Higher Education Degree Programs: Child Characteristics, by Program

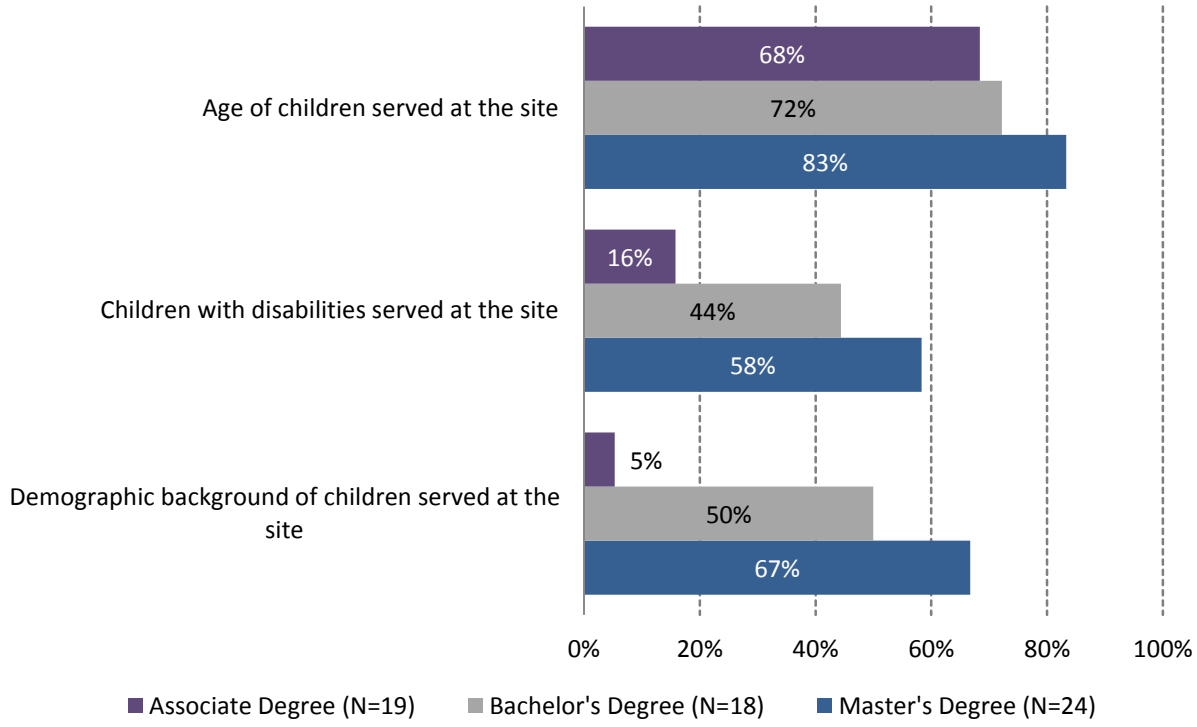


Figure 2.19: Criteria for Selecting Practicum Sites in New York Early Childhood Higher Education Degree Programs: Site Characteristics, by Program

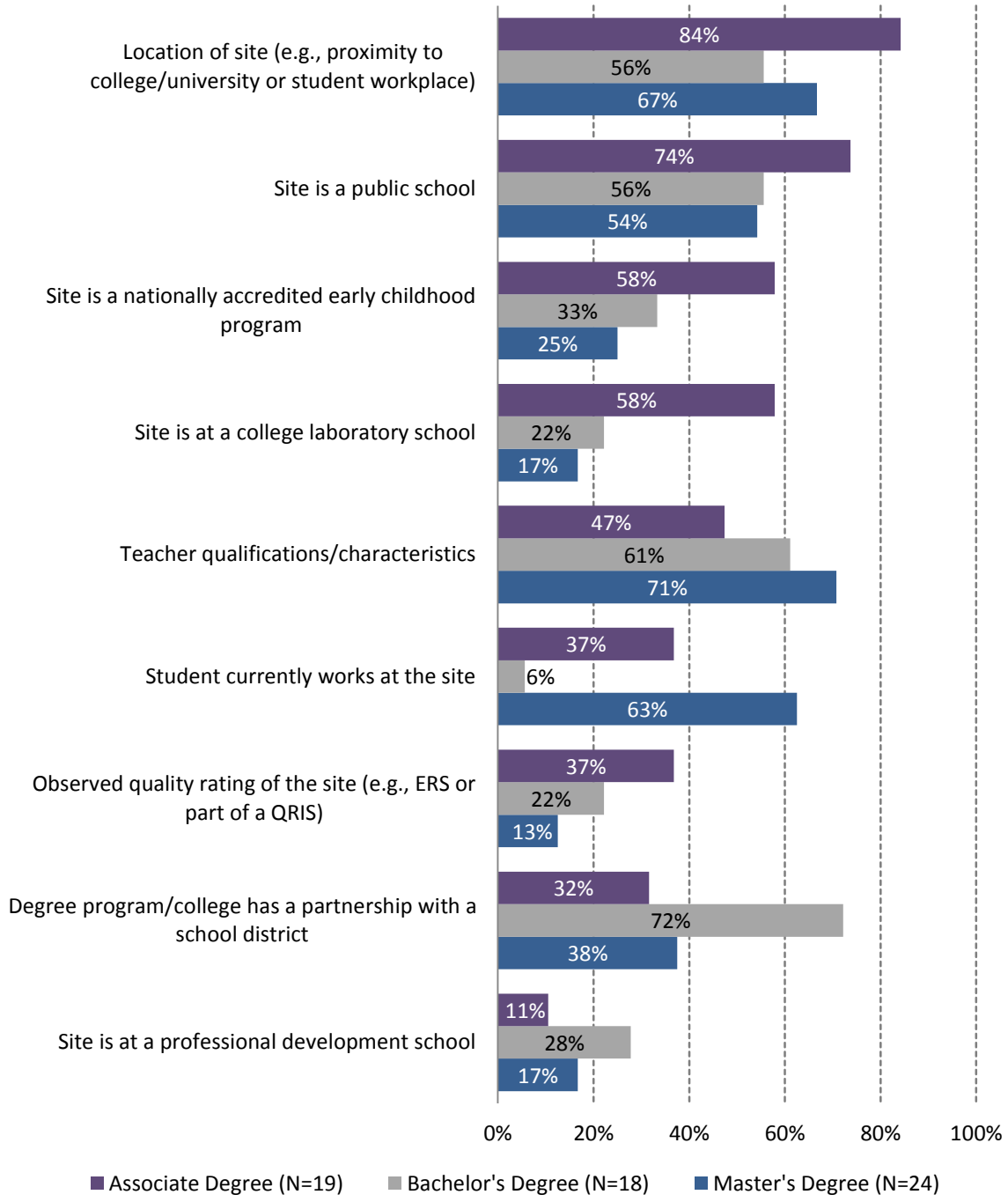


Figure 2.20: Criteria for Selecting Cooperating Teachers for Student Teaching Sites in New York Early Childhood Higher Education Degree Programs, by Program

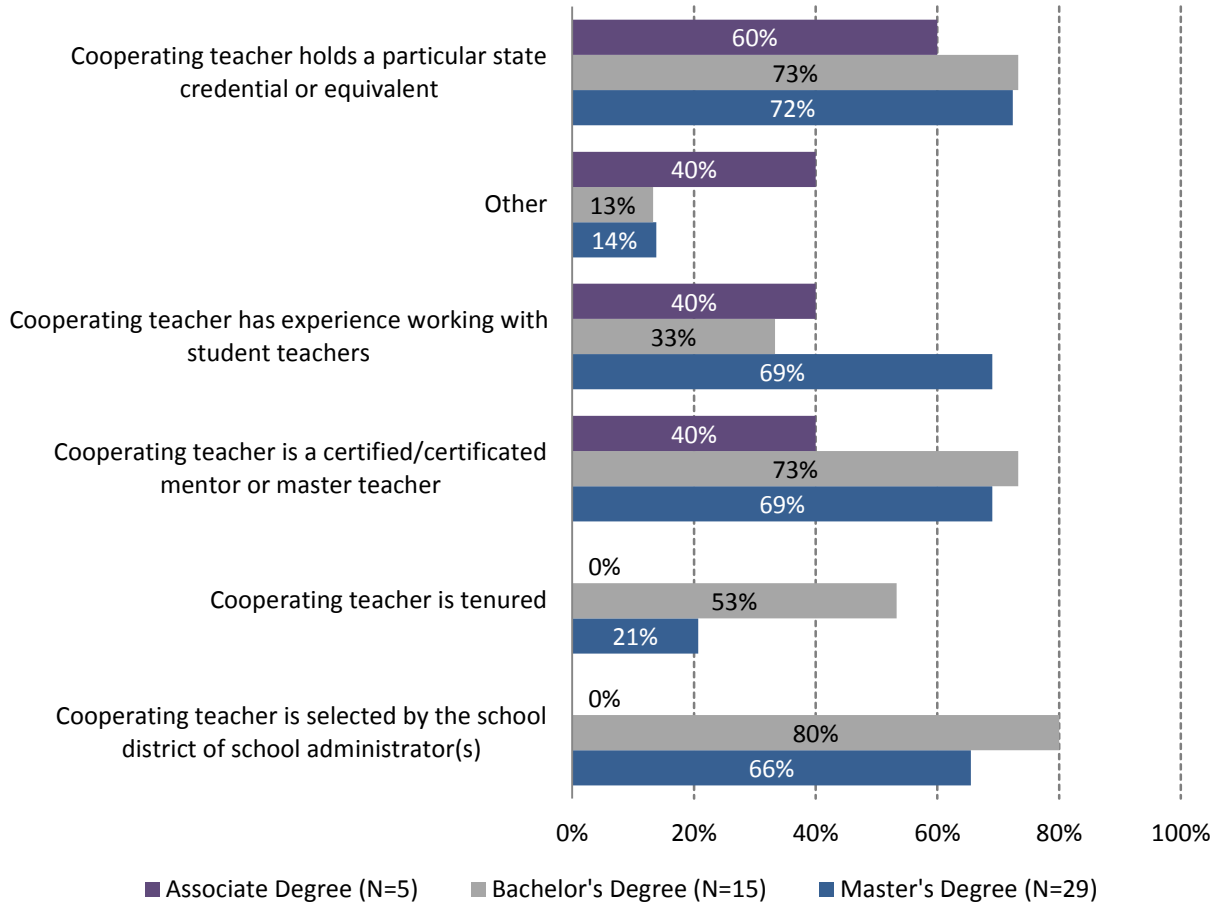
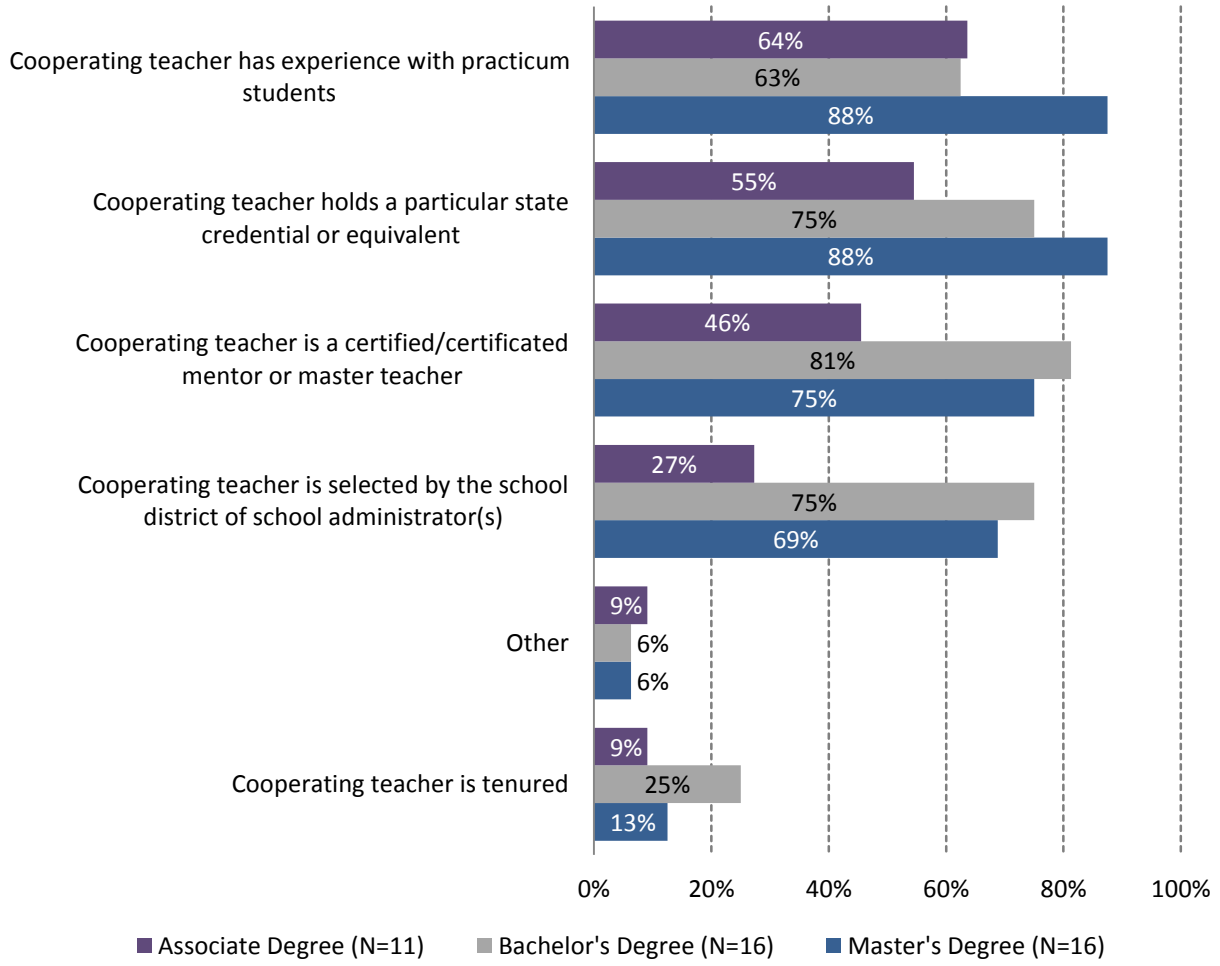


Figure 2.21: Criteria for Selecting Cooperating Teachers for Practicum Sites in New York Early Childhood Higher Education Degree Programs, by Program



Articulation and Alignment with the New York Professional Development System

The Inventory asked deans/coordinators whether they had articulation agreements with other degree programs.

Respondents were then asked a series of questions about the alignment of coursework with the state's professional development system:

1. Whether the degree program offers coursework required for New York state teacher certifications:
   - Early childhood (birth to grade 2);
   - Students with disabilities (birth to grade 2); and
   - Literacy (birth to grade 6)

2. Whether the degree program offers coursework required for New York state credentials:
   - Infant and Toddler Care and Education;
   - Children's Program Administrator; and
   - Family Child Care

3. Whether the degree program offers coursework for the Child Development Associate.

- More than three-quarters of associate and bachelor's degree programs reported articulation agreements with a community college. Approximately 10 percent of master's degree programs reported doing so.

- More than three-quarters of degree programs at all levels reported that the degree program was designed to result in a New York state early childhood teaching certification. Sixty percent of associate, 83 percent of bachelor's, and 96 percent of master's degree programs reported alignment with a state certification.

- All associate and bachelor's degree programs were aligned with an early childhood (birth to grade 2) teacher certification. Seventy-one percent of master's degree programs reported alignment with the early childhood (birth to grade 2) certification.

- Bachelor's and master's degree programs were more likely to align with the students with disabilities (birth to grade 2) teacher certification. Less than one-quarter of associate degree programs reported doing do, compared to 42 percent of bachelor's and 48 percent of master's degree programs.

- About one-quarter of master's degree programs reported alignment with the literacy (birth to grade 6) teacher certification. Associate and bachelor's degree programs did not report aligning with the literacy certification.

- Associate degree programs were the most likely to offer coursework and credits that can be applied to New York state credentials for students working towards a degree.

  ⇒ More than one-half (58 percent) of associate degree programs offered coursework and credits applied to the Infant and Toddler Care and Education credential.
  ⇒ Approximately one-third of associate degree programs offered coursework and credits applied to the Family Child Care credential.
  ⇒ More than one-quarter (29 percent) of associate degree programs offered coursework and credits applied to the Children's Program Administrator credential.

- Sixty-one percent of associate, 26 percent of bachelor's, and nine percent of master's degree programs reported offering coursework that can be applied to the New York state Child Development Associate (CDA). All bachelor's degree programs, 83 percent of associate degree programs, and one-half of master's degree programs that offered credits applied to the CDA reported that these credits could also be applied to the degree.

CHAPTER 3: EARLY CHILDHOOD HIGHER EDUCATION FACULTY

Demographics of Faculty Members Participating in the Inventory

Nearly all faculty members who participated in the Inventory were women (98 percent of associate degree faculty, 90 percent of bachelor's degree faculty, and 87 percent of master's degree faculty).

- The average ages of associate, bachelor's, and master's degree faculty members were 52, 55, and 54 years, respectively. (See **Figure 3.1**.)

  ⇒ Approximately one-quarter of associate, one-half of bachelor's, and 38 percent of master's degree faculty members reported being age 60 or older, potentially close to retirement.
  ⇒ More than one-third of faculty members at each degree level reported being 40 to 59 years old.
  ⇒ Less than 15 percent of faculty members across all degree levels reported being younger than age 40.

- Almost all associate degree faculty (96 percent), 84 percent of bachelor's degree faculty, and 83 percent of master's degree faculty members identified as White/Caucasian. (See **Figure 3.2**.)

- While more than 98 percent of faculty members at all degree levels reported fluency in English, less than 10 percent of associate, bachelor's, or master's degree faculty reported fluency in Spanish or another language. (See **Figure 3.3**.)

- Over three-fourths of faculty members at each degree level reported that it would be helpful to know another language, primarily Spanish, in order to improve communication with their students.

Figure 3.1: Age of Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

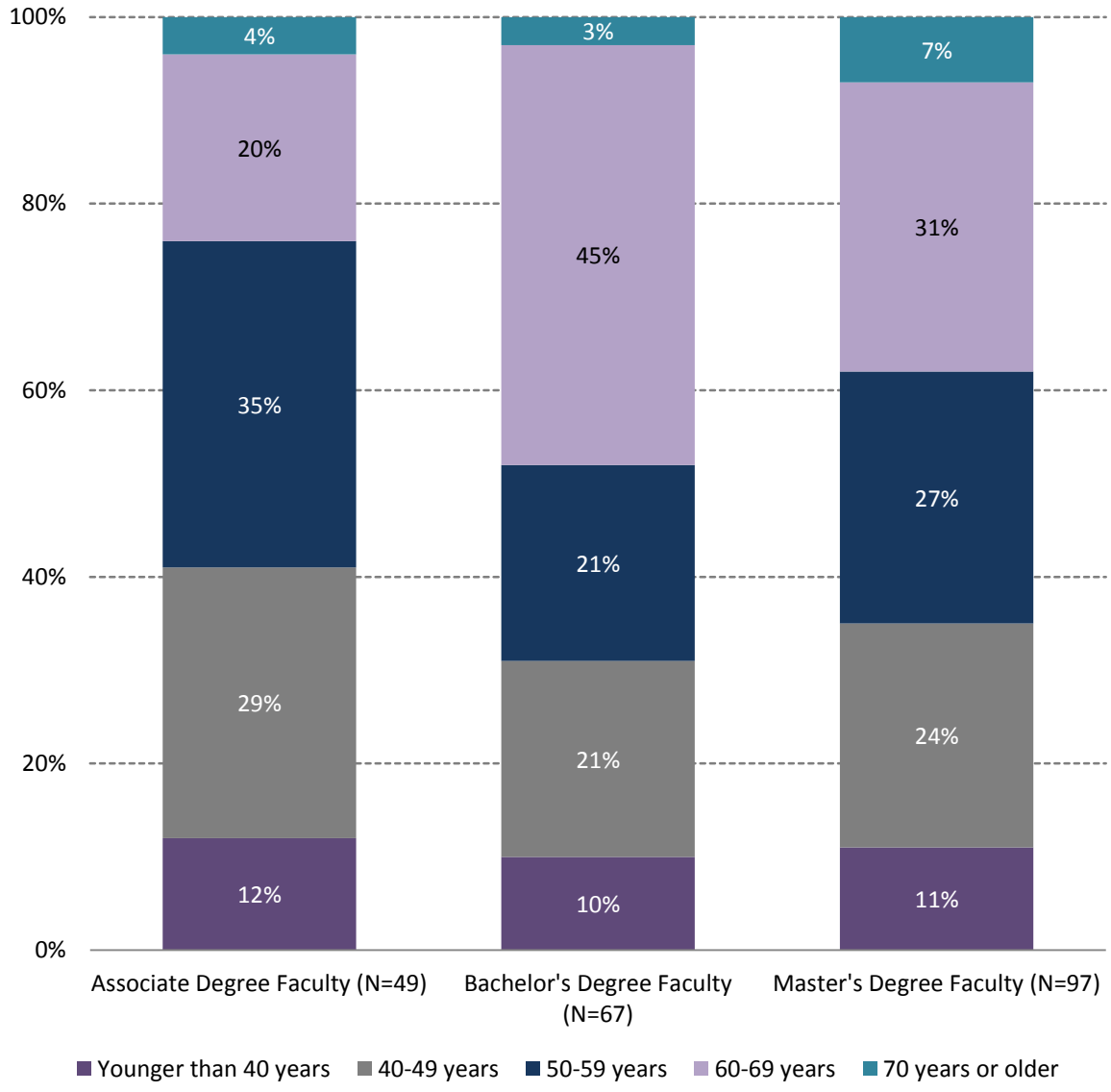


Figure 3.2: Race/Ethnicity of Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

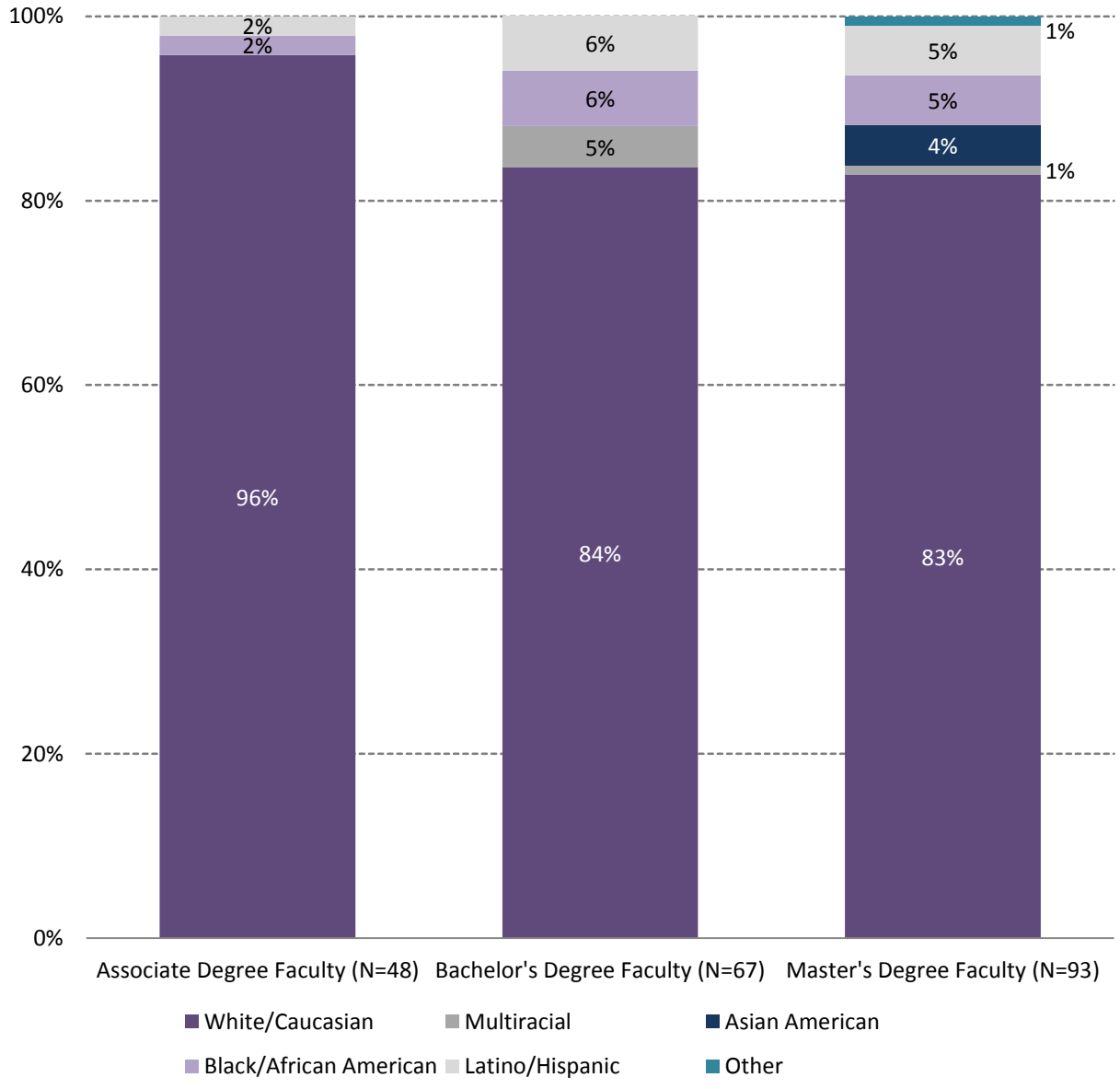
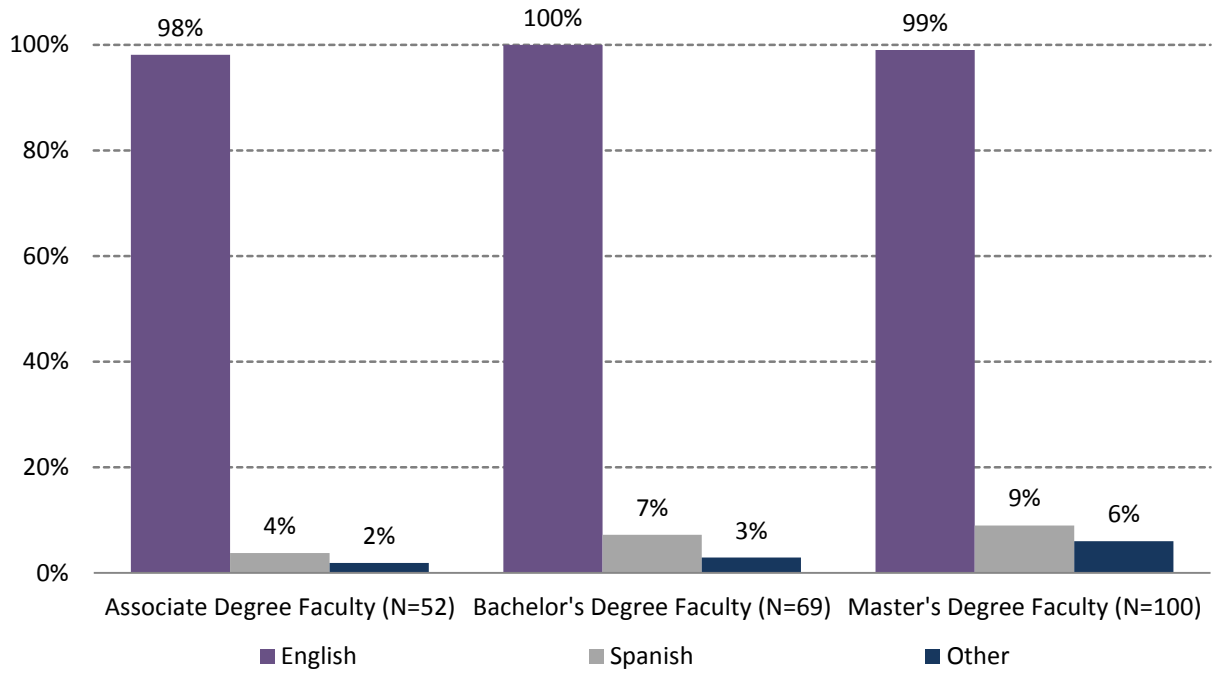


Figure 3.3: Languages Spoken Fluently by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program



Education Levels of Faculty Members Participating in the Inventory

- Over three-quarters of associate degree faculty members (78 percent) reported having attained a master's degree as their highest level of education. (See **Figure 3.4**.)
- Fifty percent of bachelor's and 56 percent of master's degree faculty members reported having attained a doctoral degree. (See **Figure 3.4**.)
- Ninety percent of associate, 64 percent of bachelor's, and 66 percent of master's degree faculty members reported having attained an early childhood education or child development (ECE/CD) degree at either the bachelor's or graduate level. (See **Figure 3.5**.)

Figure 3.4: Highest Level of Education of Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

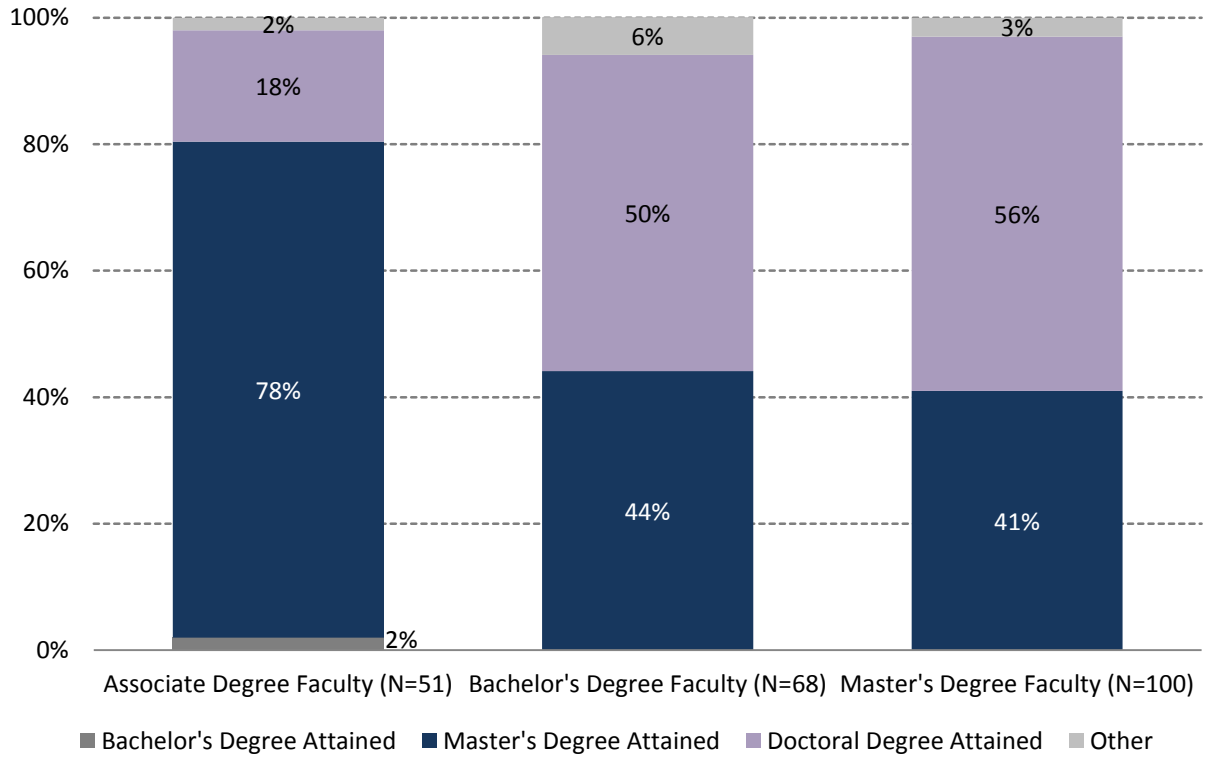
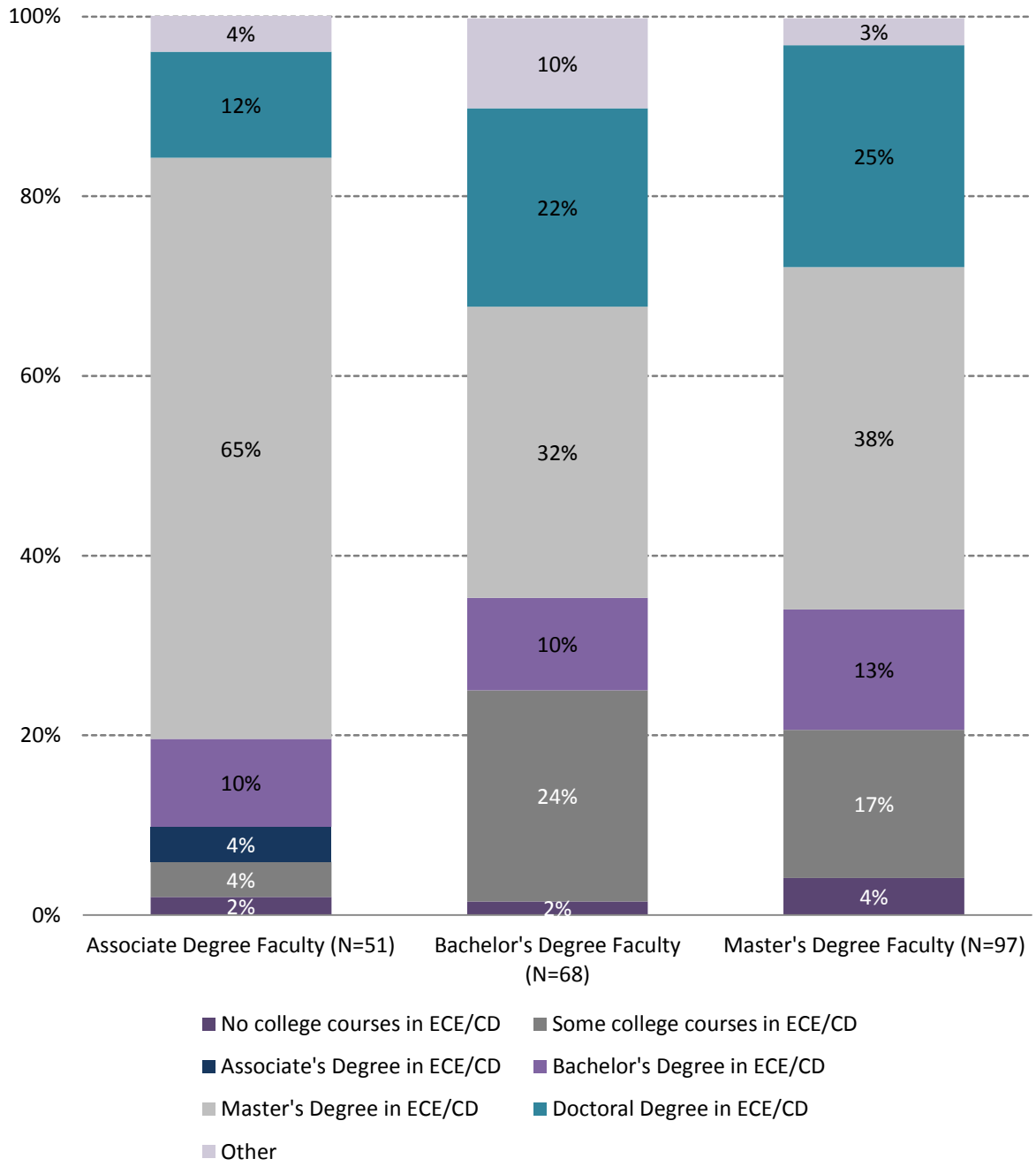


Figure 3.5: ECE/CD Degree Attainment by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program



Professional Experiences and Current Employment Status of Faculty Members Participating in the Inventory

Professional Experiences

- On average, associate degree faculty members reported having taught at the college or university level for 13 years, bachelor's degree faculty members for 12 years, and master's degree faculty members for 11 years. (See **Figure 3.6**.)

  ⇒ Approximately one-half of associate degree, bachelor's degree, and master's degree faculty members reported having taught at the college level for more than 10 years.
  ⇒ Approximately one-quarter of associate degree faculty reported having taught at the college level for more than 20 years, while only 12 percent of bachelor's degree and 10 percent of master's degree faculty had done so.

- On average, associate degree faculty members reported having taught at their current college or university for 11 years, bachelor's degree faculty members for nine years, and master's degree faculty members for eight years. (See **Figure 3.7**.)

  ⇒ More than one-third of associate and bachelor's degree faculty reported having taught at their college or university for more than 10 years, compared to less than one-quarter of master's degree faculty members.

- About one-half of associate and bachelor's degree faculty, and two-thirds of master's degree faculty, reported having worked in roles other than college-level teaching or administration in the past 10 years. (See **Figure 3.8**.)

  ⇒ The other job role most frequently reported by associate (44 percent), bachelor's (35 percent), and master's (48 percent) degree faculty members was "early childhood professional development provider."
  ⇒ Other job roles reported by one-fifth or fewer of faculty members at all degree levels included:
    - Teacher assistant/aide;
    - Special education teacher;
    - Early invention specialist; and
    - School principal/other school administrator.
  ⇒ At all degree levels, adjunct faculty members were more likely than tenure-track faculty to report having worked in other roles. Approximately three-quarters of associate and bachelor's, and 82 percent of master's degree adjunct faculty members did so, compared to one-third of associate, 42 percent of bachelor's, and 56 percent of master's degree full-time/tenure-track faculty members.

Current Employment

- One-half of associate and at least one-third of bachelor's and master's degree faculty members identified themselves as adjunct faculty or part-time lecturers. (See **Figure 3.9**.)

- Within each faculty group, the largest percentage of faculty members reported that they had other areas of responsibility in addition to teaching, although these percentages varied slightly by degree level (63 percent of associate degree faculty, 64 percent of bachelor's degree faculty, and 57 percent of master's degree faculty). (See **Figure 3.10**.)

  ⇒ The largest percentages of associate, bachelor's, and master's degree faculty reported "supervising student teaching and/or practicum" as another area of responsibility.

- On average, associate degree faculty members reported teaching five courses in a typical academic year; bachelor's degree faculty, four courses; and master's degree faculty, three courses. (See **Figure 3.11**.)

  ⇒ One-third of associate (33 percent), one-quarter of bachelor's (25 percent), and 19 percent of master's degree faculty members reported teaching six or more courses in a typical academic year.

- On average, associate degree faculty members reported advising 23 students in a typical year, bachelor's degree faculty members reported advising 18 students, and master's degree faculty reported advising 15 students. (See **Figure 3.12**.)

  ⇒ Fourteen percent of associate, five percent of bachelor's, and six percent of master's degree faculty members reported advising more than 50 students in a typical year.

Figure 3.6: Number of Years Teaching at the College or University Level for Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

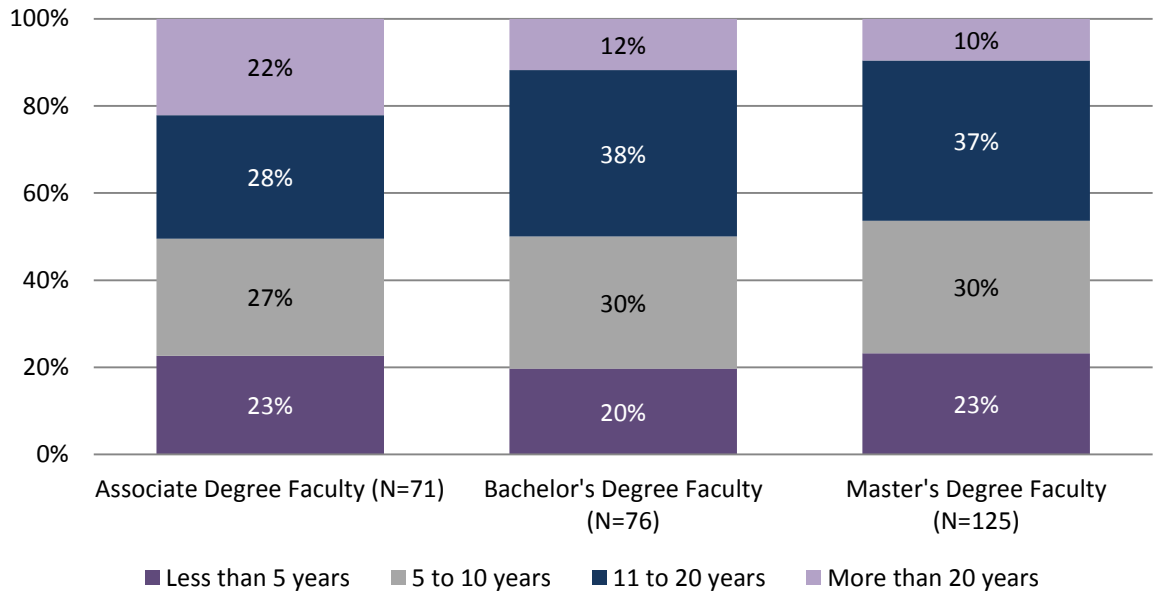
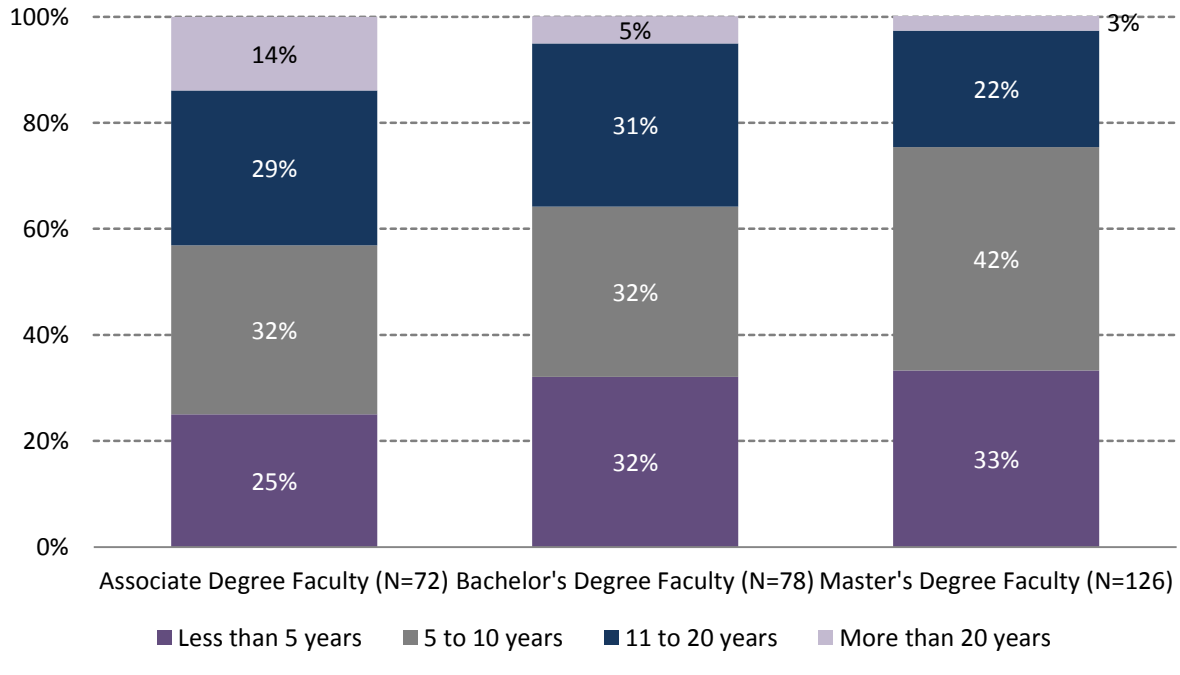


Figure 3.7: Number of Years Teaching at Current College or University for Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program



Other Employment

Approximately one-half to two-thirds of faculty members at each degree level (52 percent of associate degree faculty, 52 percent of bachelor's degree faculty, and 66 percent of master's degree faculty) reported that they had worked in roles other than college-level teaching or administration in the past 10 years. **Figure 3.8** displays the most frequently mentioned job roles.

Figure 3.8: Most Frequently Reported Job Roles in the Last 10 Years of Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

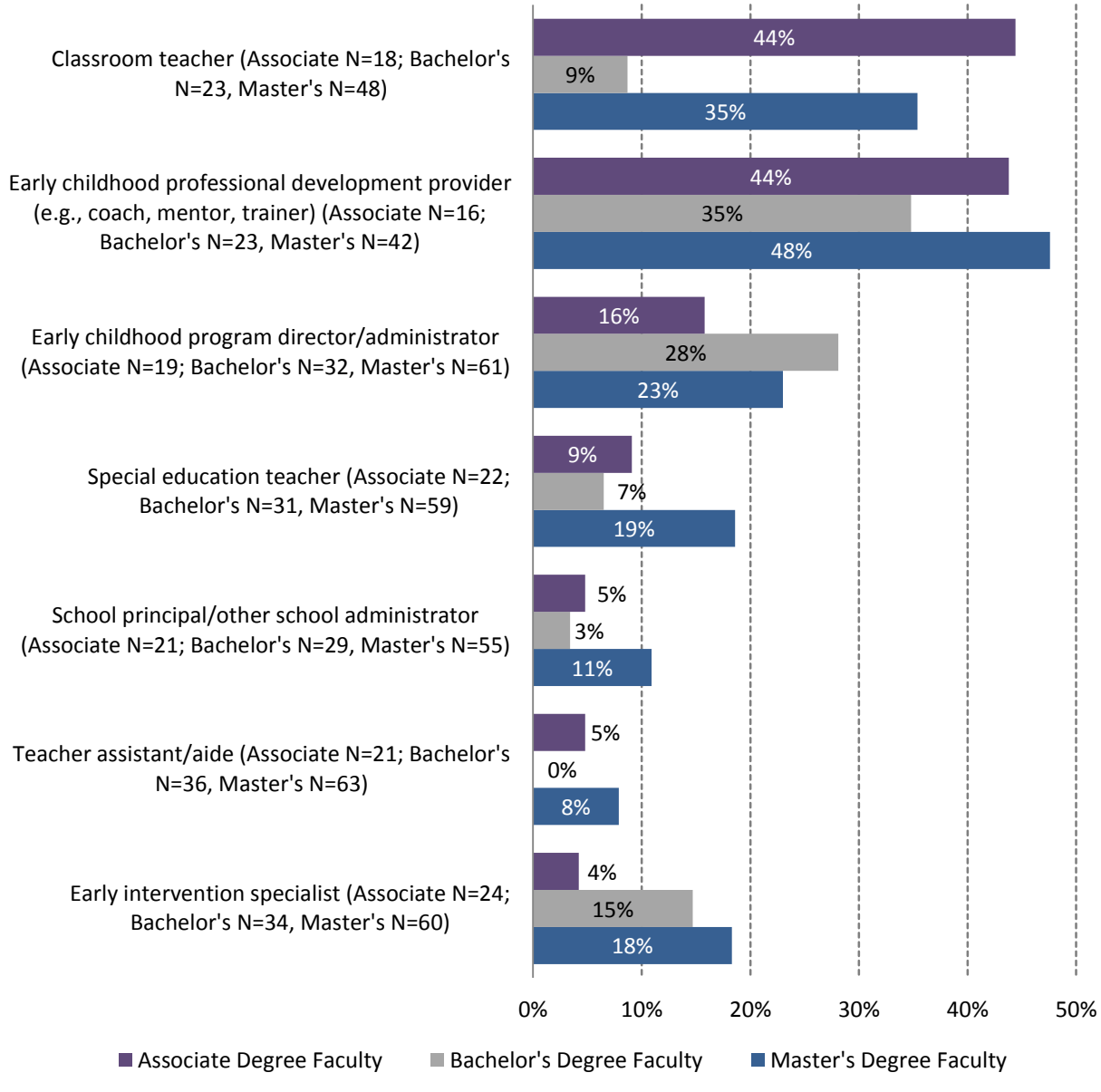


Figure 3.9: Employment Status of Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

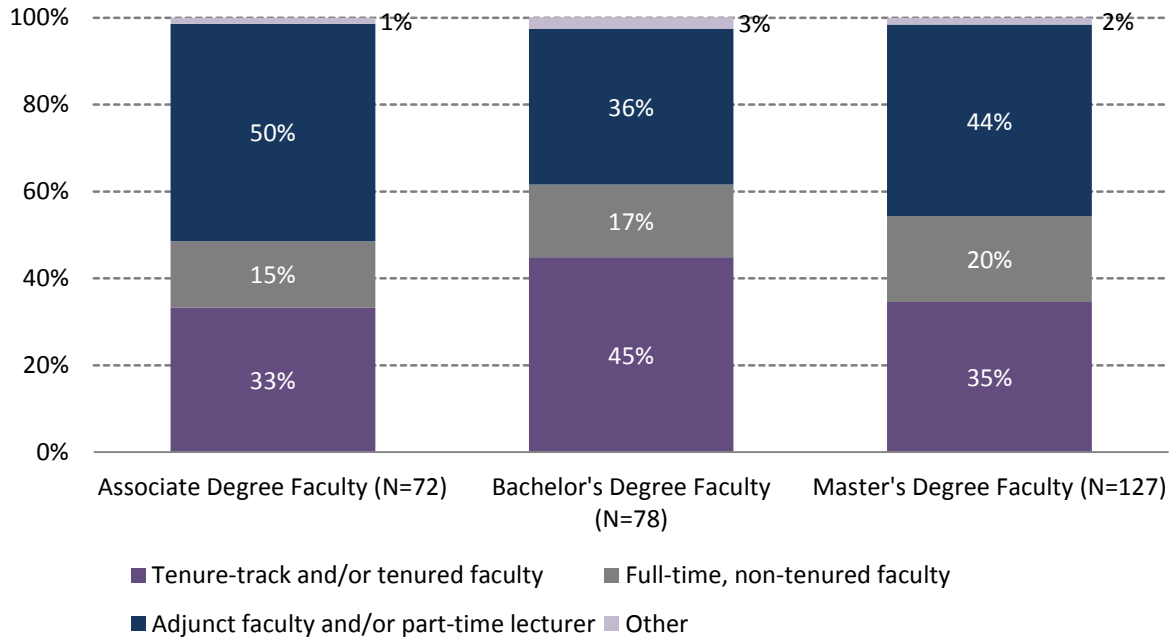
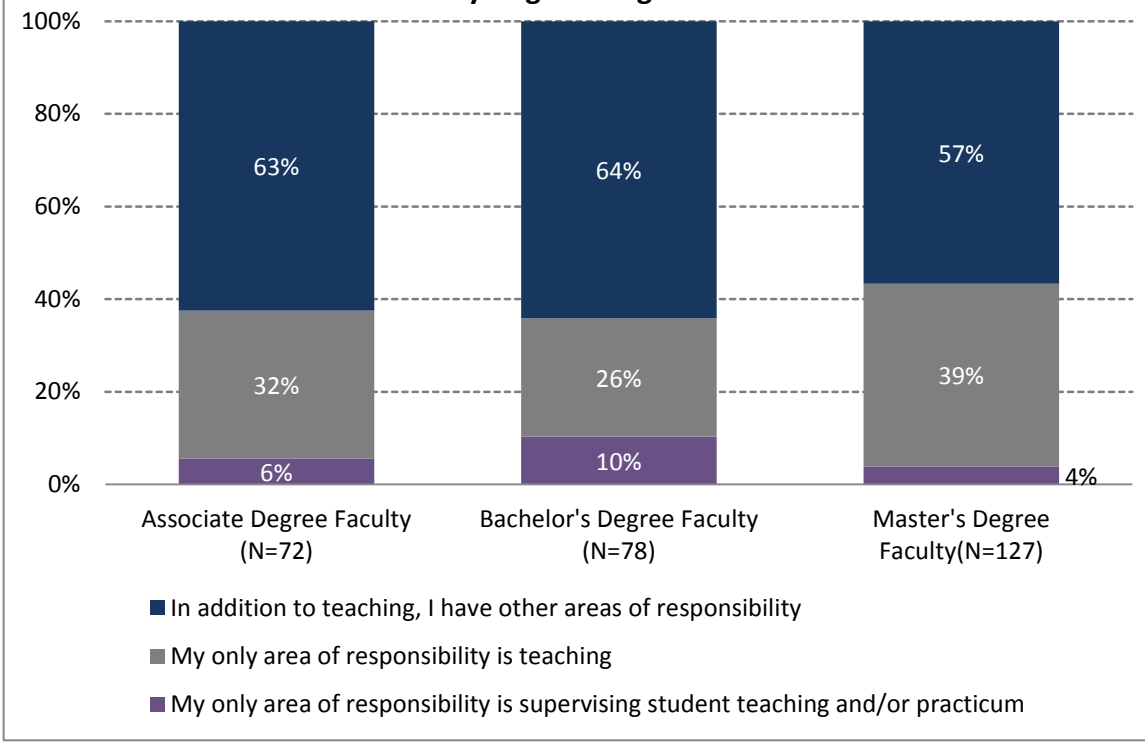


Figure 3.10: Primary Responsibility of Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program



3.11: Number of Courses Taught in a Typical Academic Year by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

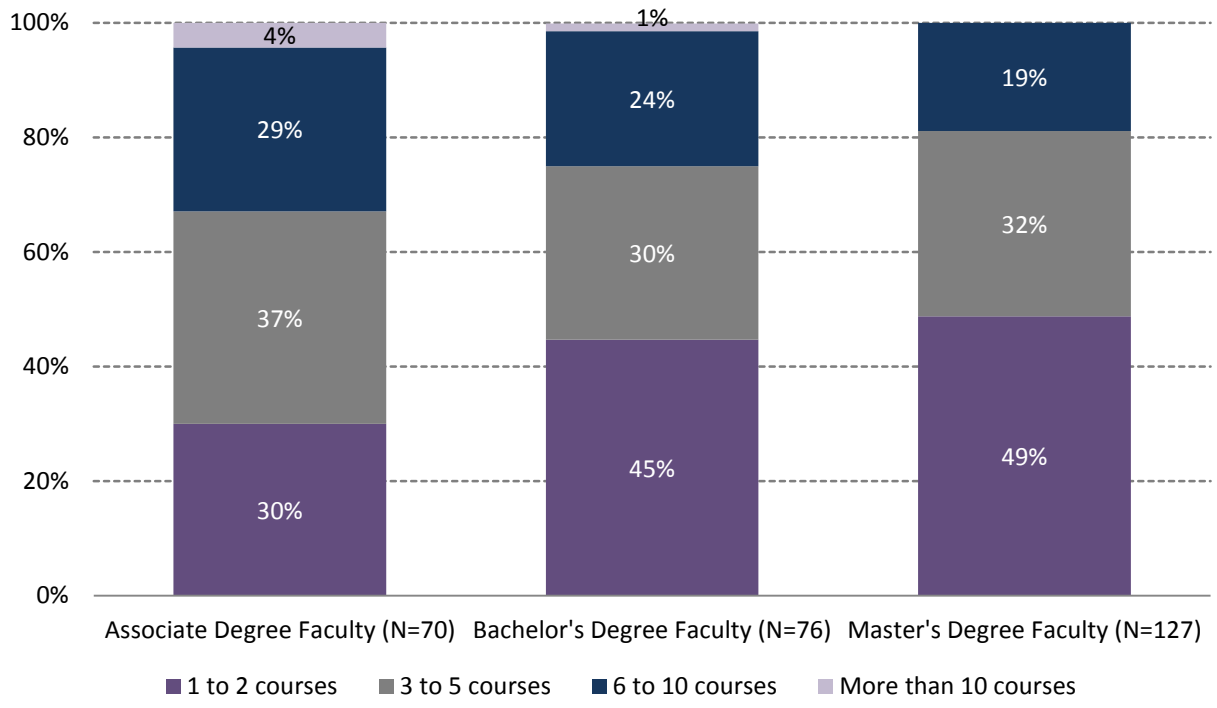
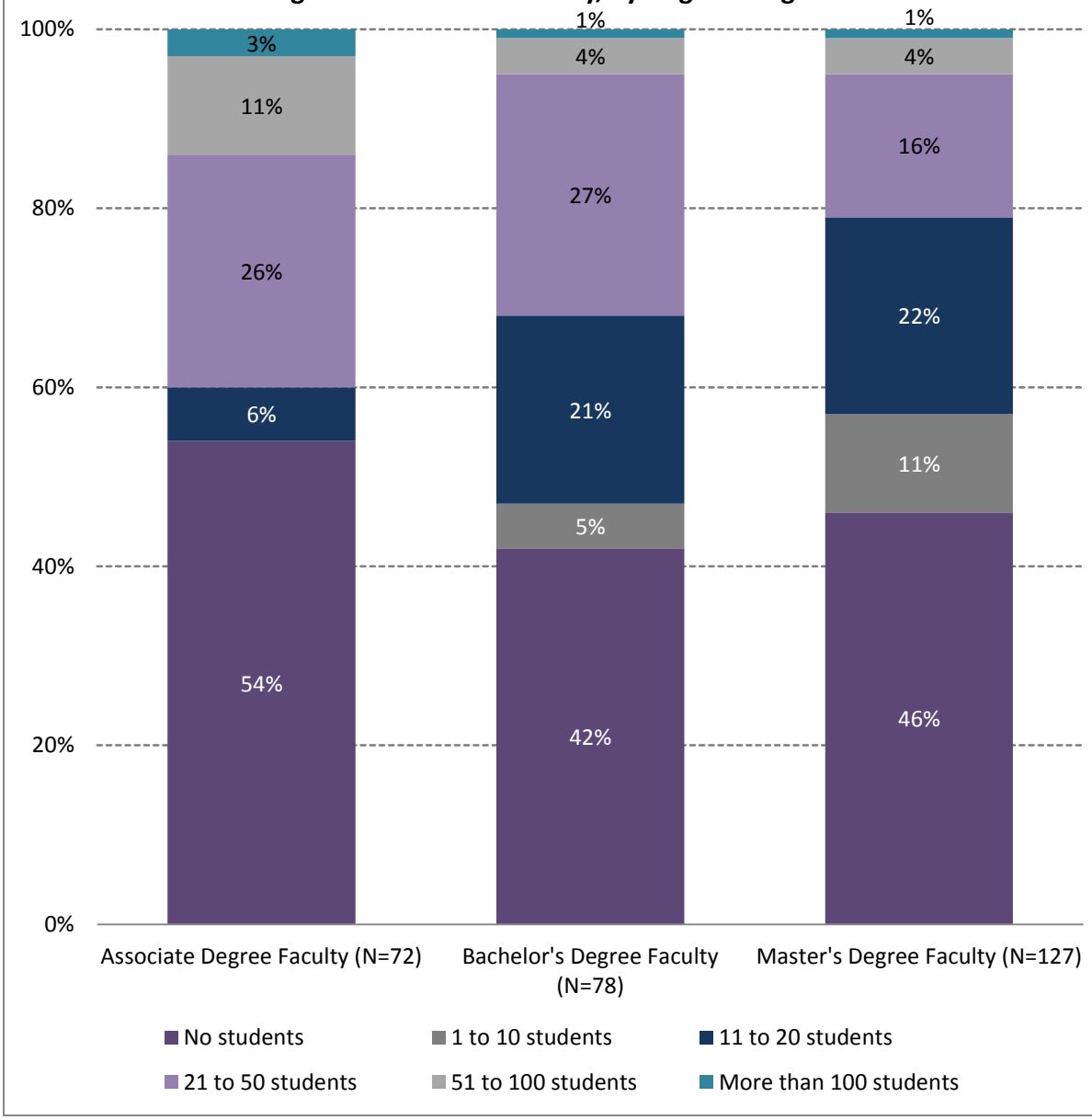


Figure 3.12: Number of Students Advised in a Typical Academic Year by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program



Teaching Focus and Age-Group Expertise of Faculty Members Participating in the Inventory

The Inventory asked faculty members to indicate their primary teaching focus as "child development and learning," "curriculum and teaching methods," or "both equally." They were also asked to indicate their expertise related to various age groups of children, from birth through the early elementary grades.

- Associate degree faculty members were the most likely among faculty at all levels to report an equal focus on "curriculum and teaching methods" and "child development and learning." Over two-thirds (68 percent) did so, compared to 58 percent of bachelor's and 53 percent of master's degree faculty members. (See **Figure 3.13**.)

- Master's degree faculty members were the most likely to report focusing exclusively on "curriculum and teaching methods." One-third did so, compared to 15 percent of associate and 29 percent of bachelor's degree faculty members. (See **Figure 3.13**.)

- Less than 20 percent of faculty members at each degree level reported focusing exclusively on "child development and learning." (See **Figure 3.13**.)

- Approximately one-third of all faculty members at all degree levels reported expertise related to children ages birth through Grade 2 or higher. (See **Figure 3.14**.) Less than 10 percent of faculty at all degree levels reported expertise related to preschool-age children exclusively.

Figure 3.13: Primary Teaching Focus of Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

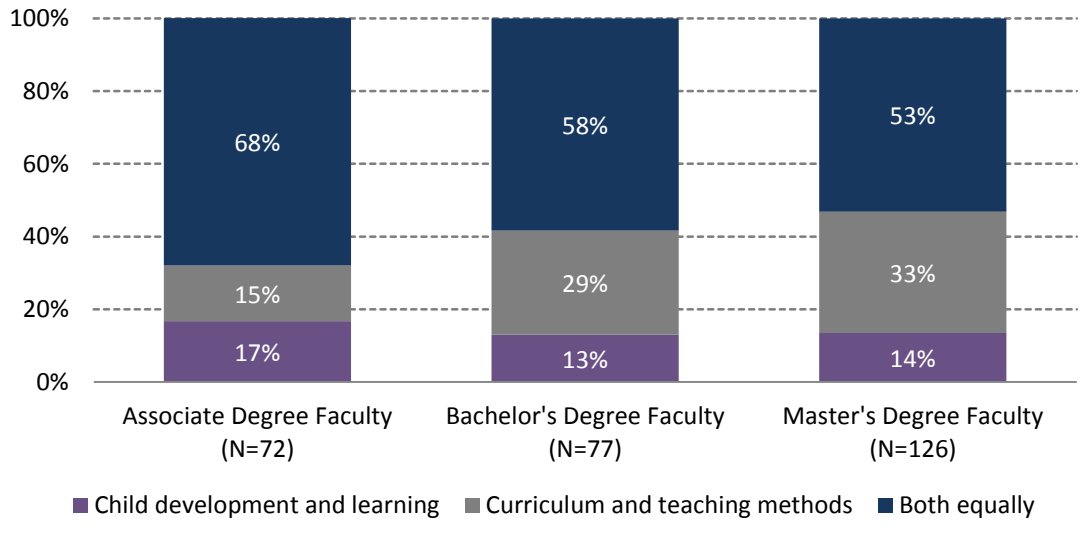
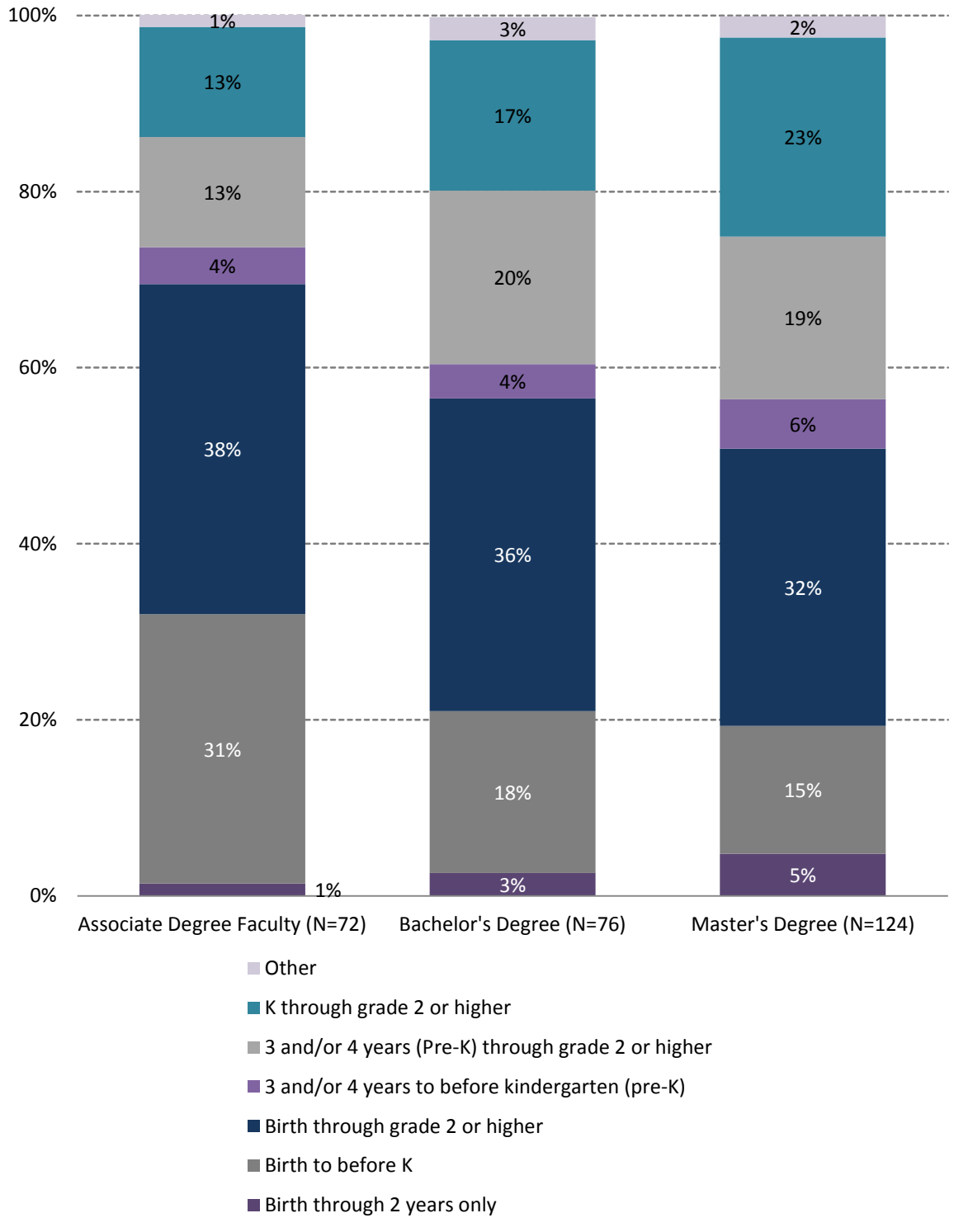


Figure 3.14: Primary Age-Group Expertise of Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program



Content and Age-Group Focus of Coursework Taught by Faculty Members Participating in the Inventory

The Inventory asked faculty members to identify the topics covered in the courses they had taught in the past two years. The topics were categorized into broad content areas:

1. Child Development and Learning;
2. Teaching Diverse Child Populations;
3. Teaching and Curriculum;
4. Teaching Skills in Early Childhood Settings;
5. Early Childhood Administration and Leadership;
6. Provision of Professional Development Services;
7. Family Engagement; and
8. Early Mathematics.

See **Figures 3.15** through **3.20** for lists of topics.

Faculty members were then asked to specify the age-group focus of the topics covered in their coursework. The four age groups were:

1. Infants and toddlers (birth through 2 years);
2. Preschool (3 and/or 4 years); and
3. Kindergarten through 2nd grade or higher.

See **Appendix Tables A3-1** through **A3-4**.

The Family Engagement and Early Mathematics content areas were explored in greater depth. These findings are reported in Section 3.

- Two-thirds or more of faculty members at all degree levels reported teaching:
  - ⇒ Five out of seven content areas of "child development and learning" (see **Figure 3.15** for list of topics);
  - ⇒ Four out of five content areas of "teaching diverse child populations" (see **Figure 3.16** for list of topics);
  - ⇒ Five out of 10 content areas of "teaching and curriculum"; and
  - ⇒ All areas of "teaching skills in early childhood settings" (see **Figure 3.18** for list of topics).

- The percentage of faculty members reporting teaching all topics in the "teaching and curriculum" content area varied by degree level, with master's degree faculty least likely to do so. (See **Figure 3.17** for list of topics.)

⇒ Three-fourths or more of associate degree faculty members reported teaching all "teaching and curriculum" topics.
⇒ Less than one-half of master's degree faculty members reported coursework in "teaching science skills to children" and "teaching art to children."

- Faculty members at all degree levels were less likely to report teaching all topics within the "early childhood administration and leadership" content area than all topics within the other content areas described above. (See **Figures 3.19** and **3.20** for lists of topics.)

  ⇒ At least one-half of associate degree faculty members reported teaching seven of the 15 topics listed in the Inventory.
  ⇒ At least one-half of bachelor's degree faculty members reported teaching five of the 15 topics.
  ⇒ At least one-half of master's degree faculty members reported teaching four of the 15 topics.

- The largest percentage of faculty members at all levels reported teaching the following "early childhood administration and leadership" topics:

  ⇒ Assessment and documentation to inform program quality;
  ⇒ Guiding practitioners in implementing curriculum and appropriate teaching strategies;
  ⇒ Building relationships with other teachers and/or early childhood professionals; and
  ⇒ Assessment and documentation to inform teaching and learning.

- The topics mentioned least by faculty members included:

  ⇒ Fiscal procedures and management; and
  ⇒ Grant management and proposal writing.

- Overall, faculty members at all degree levels were more likely to report focusing content on working with preschoolers than with children in other age groups. (See **Appendix Tables A3-1** through **A3-4**.)

- Although there were variations by content areas, associate degree faculty members were the most likely overall to report focusing content on infants and toddlers, and least likely to report focusing content on children in the early elementary grades. (See **Appendix Tables A3-1** through **A3-4**.)

*The following figures display the percentages of faculty members at each degree level who reported teaching the topic within the past two years. See **Appendix Tables A3-1** through **A3-4** for the age-group focus of the content taught.*

Figure 3.15: Coursework on Child Development and Learning Taught by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

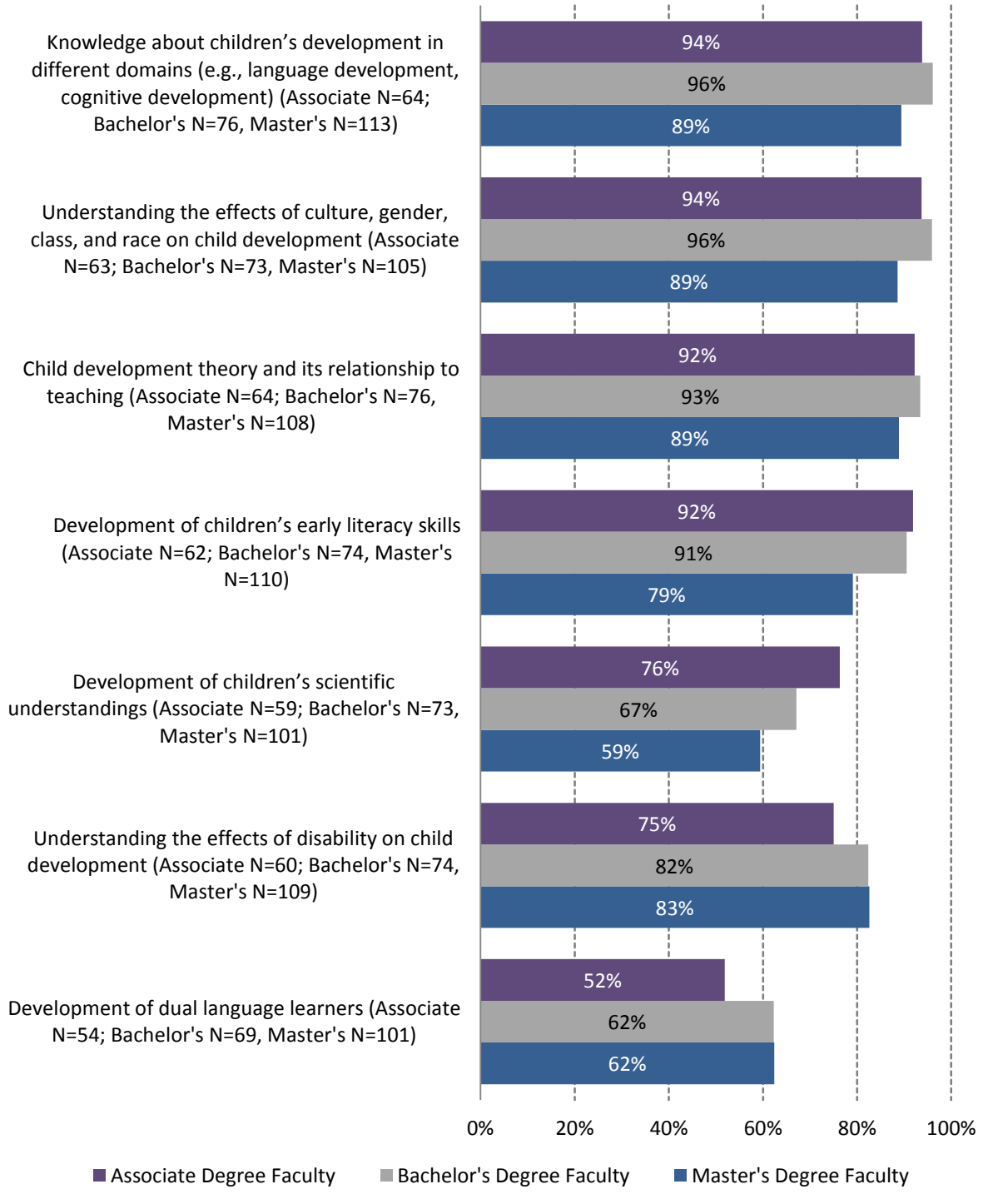


Figure 3.16: Coursework on Teaching Diverse Child Populations Taught by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

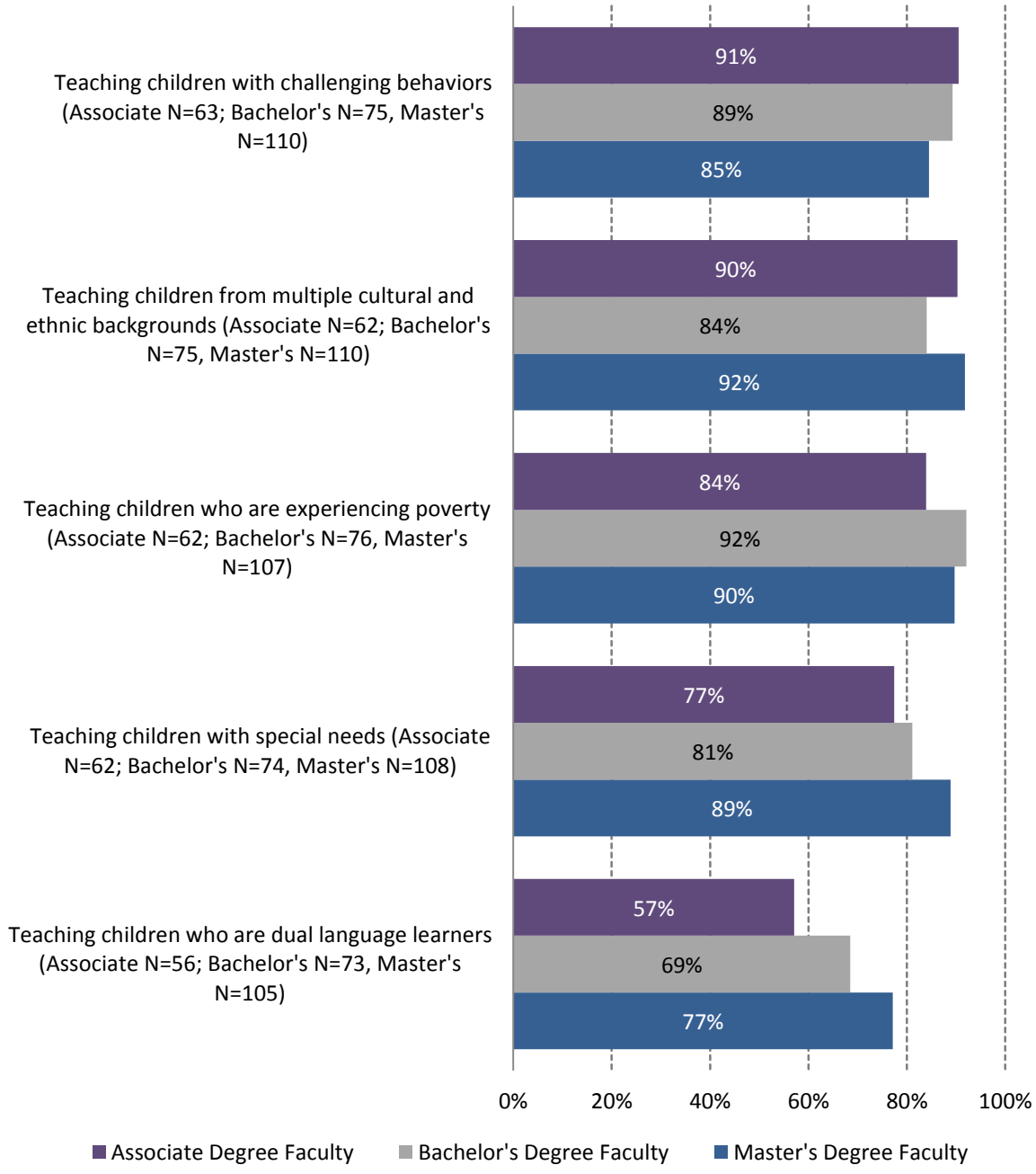


Figure 3.17: Coursework on Teaching and Curriculum Taught by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

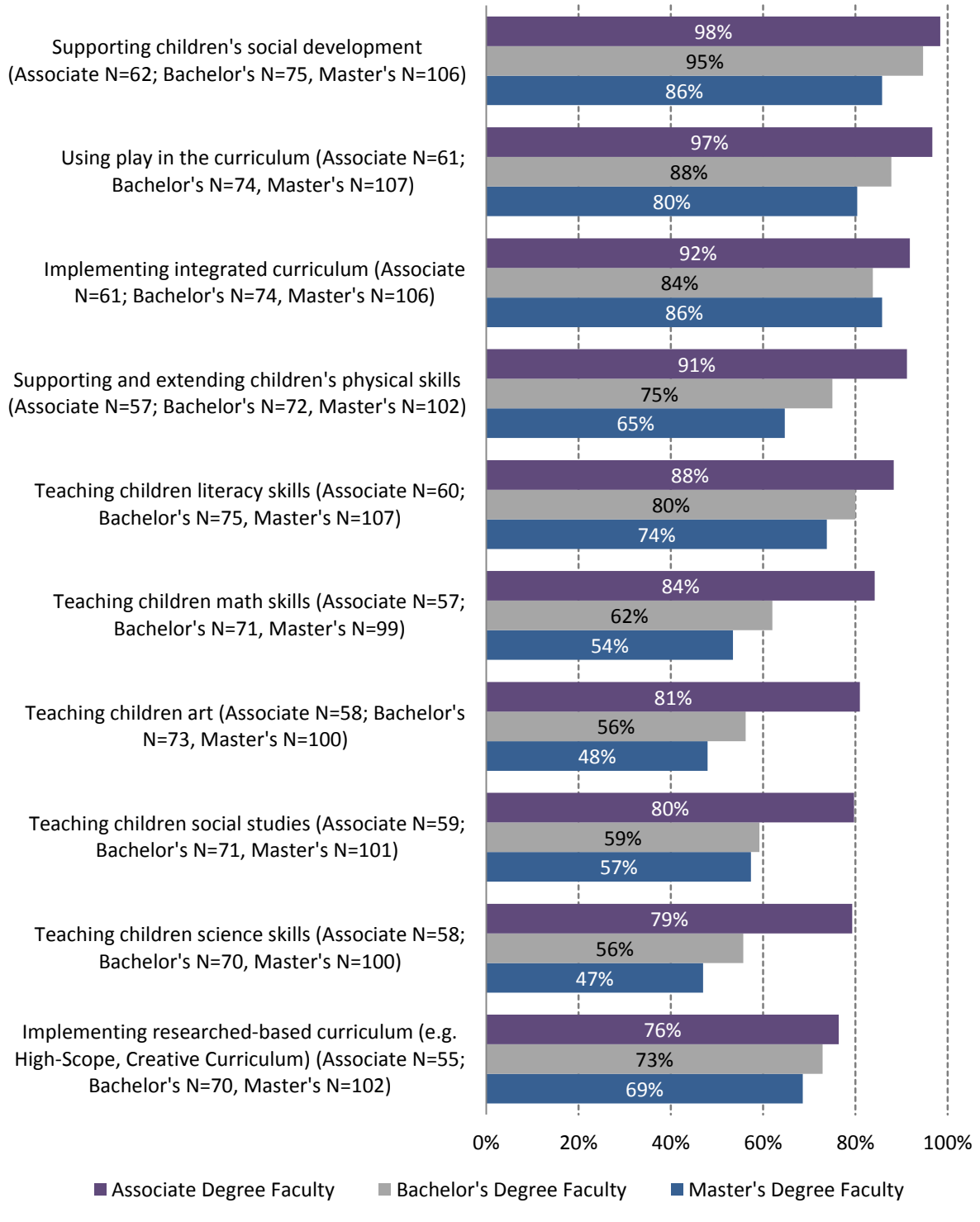


Figure 3.18: Coursework on Teaching Skills in Early Childhood Settings Taught by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

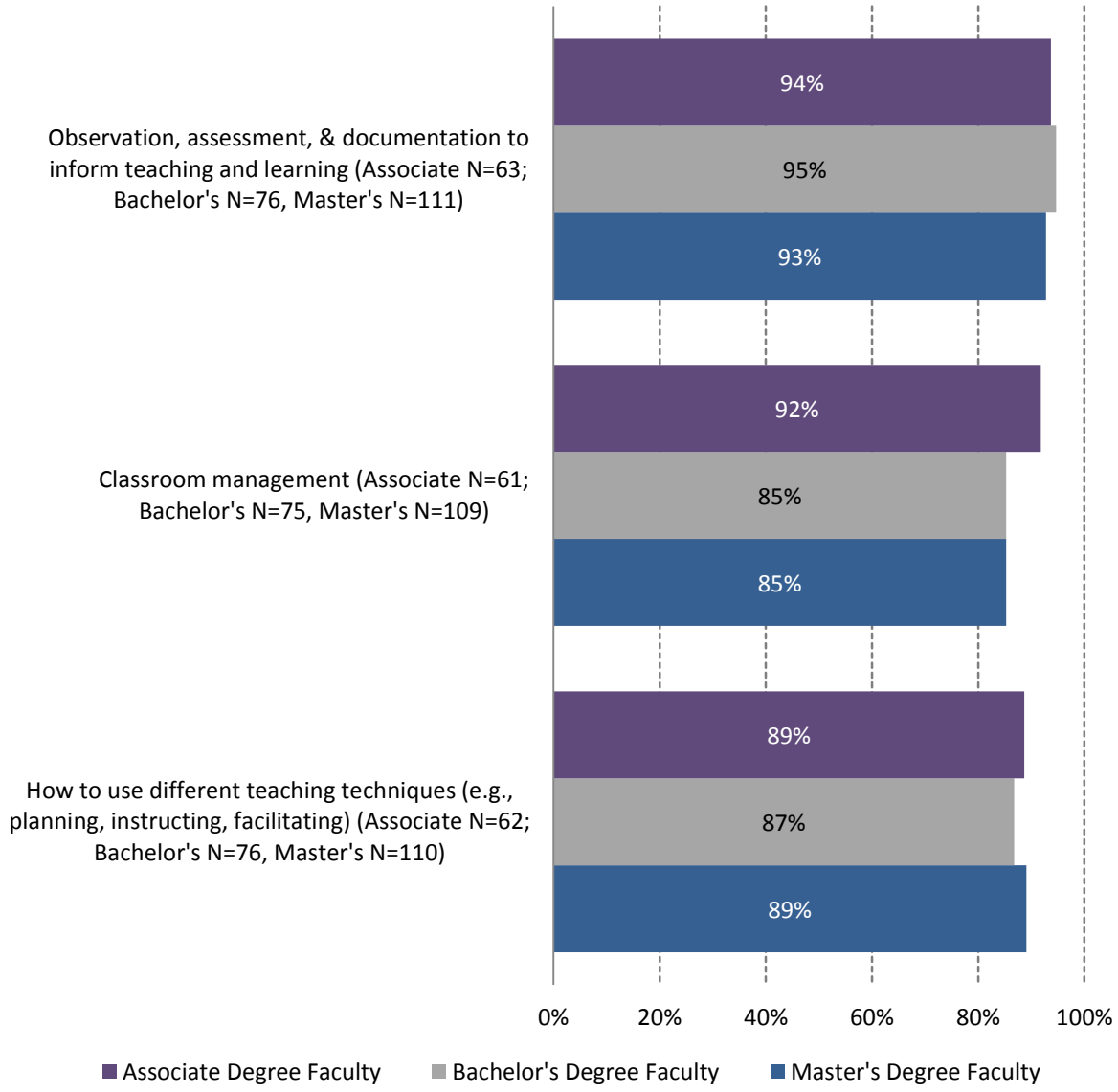


Figure 3.19: Coursework on Administration and Leadership: Supervision and Leadership, Taught by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

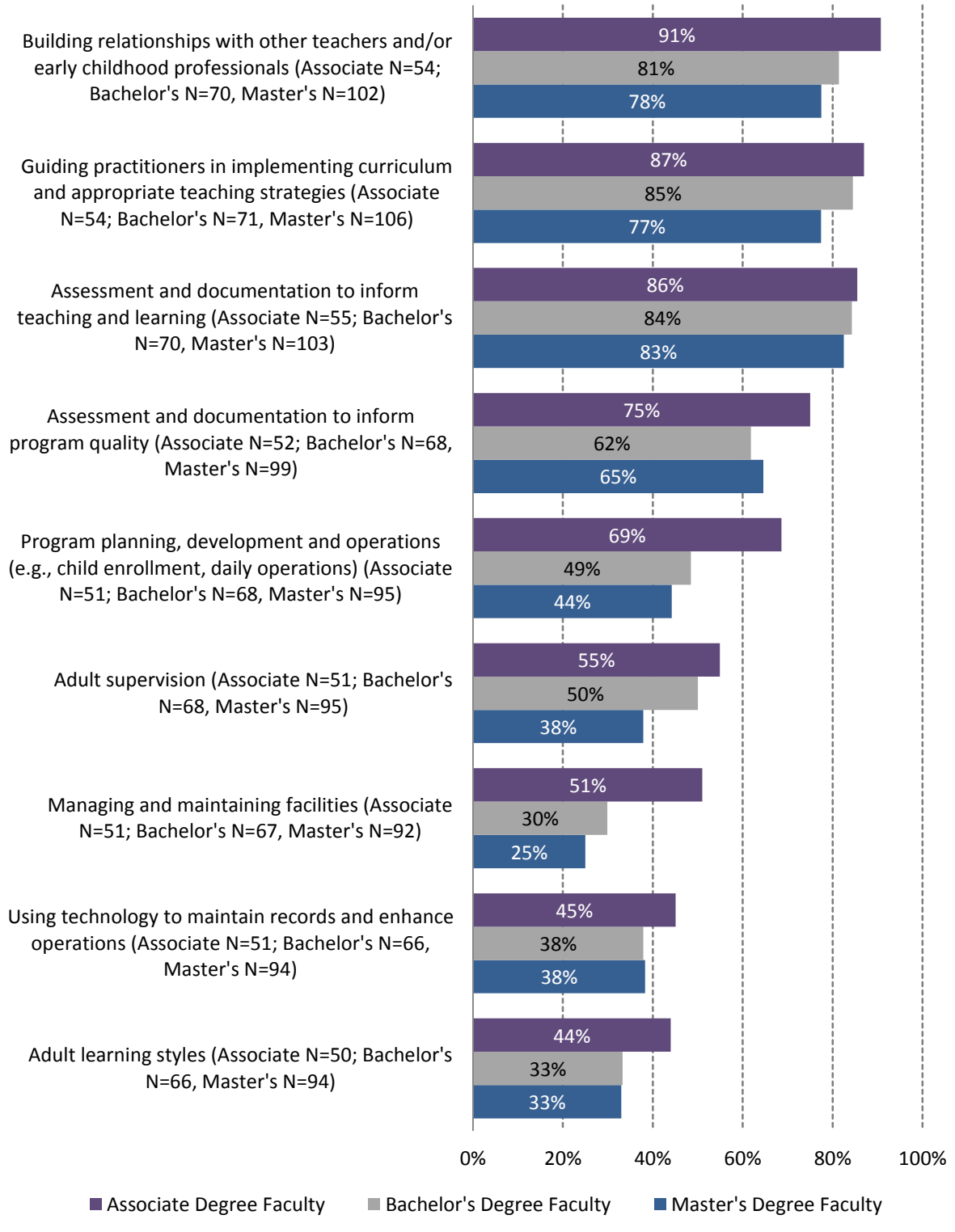
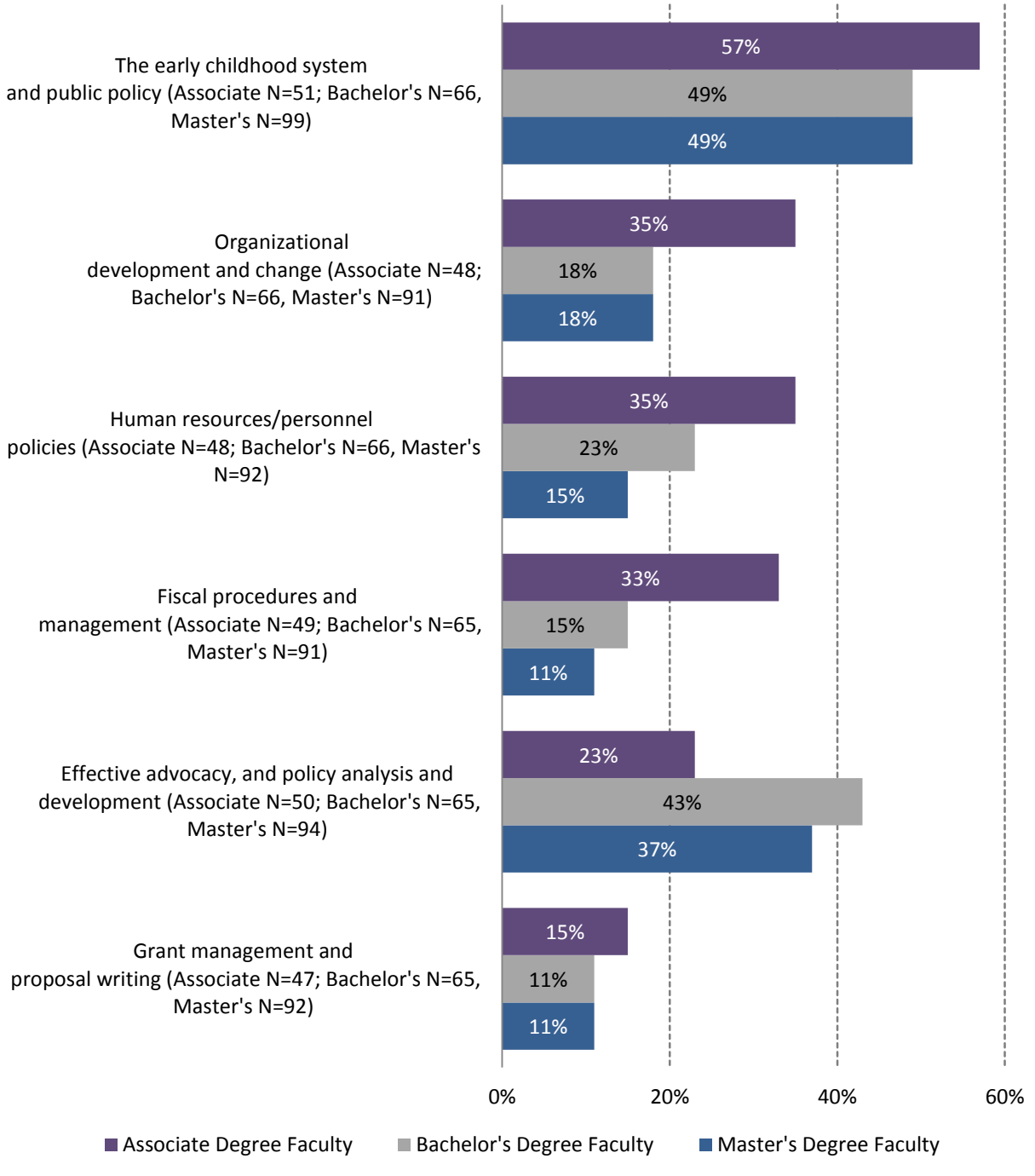


Figure 3.20: Coursework on Administration and Leadership: Organizations/Systems, Taught by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program



Professional Development Opportunities and Needs of Faculty Members Participating in the Inventory

The Inventory asked faculty members whether they had participated in professional development opportunities in the past three years. The Inventory then listed 27 topics and asked faculty members who responded "yes" to indicate the professional development in which they had participated. The list included multiple topics related to:

- Diverse child populations;
- Adult learners;
- Teaching skills and assessment; and
- Early childhood administration and leadership.

See **Figure 3.21** and **Appendix Table A3-5** for lists of topics.

The list also included topics related to two areas of special interest:

- Family engagement; and
- Early mathematics.

See **Appendix Tables A3-6** and **A3-7** for lists of topics.

The next series of questions asked faculty members to indicate areas in which it would be helpful to gain additional knowledge or training. Faculty members were provided with a list of 22 topics, and were asked to indicate whether it would be helpful to have additional knowledge or training on these topics. The list included multiple topics related to:

- Diverse child populations;
- Adult learners;
- Teaching skills and assessment; and
- Early childhood administration and leadership.

The list also included one general topic related to early mathematics, and one general topic related to family engagement.[1]

See **Figure 3.22** and **Appendix Table A3-8** for lists of topics.

[1] In separate questions, the Inventory asked more specifically about faculty members' interest in professional development related to early mathematics and family engagement. These findings are reported in Chapter 5.

Professional Development

- The vast majority of faculty members at all degree levels who responded to a question on the topic reported having participated in professional development during the last three years (95 percent of associate, 97 percent of bachelor's, and 91 percent of master's degree faculty).

- The two most frequently reported professional development opportunities, participated in by at least 40 percent of faculty members at all degree levels, involved content related to "teaching diverse groups of children" and "teaching skills and assessment." (See **Figure 3.21** and **Appendix Table A3-5** for lists of topics.) The topics were:

  ⇒ Child assessment (e.g., portfolios, using particular assessment tools such as the Work Sampling System); and
  ⇒ Teaching practitioners to work with children from diverse cultural backgrounds.

- The professional development opportunities participated in by less than one-quarter of faculty members at all levels involved content related to diverse child populations, adult learners, and teaching skills and assessment. (See **Figure 3.21** and **Appendix Table A3-5** for list of topics.) These included:

  ⇒ Teaching adults who are English language learners;
  ⇒ Organizational development; and
  ⇒ Early childhood teacher assessment (e.g., CLASS).

Professional Development that Faculty Members Indicate Would Be Helpful

- Faculty members at all degree levels indicated a number of areas in which it would be helpful to gain additional knowledge or training. (See **Figure 3.22** and **Appendix Table A3-8** for lists of topics.) The topics most frequently reported by faculty at each degree level were:

  ⇒ Teaching practitioners to work with children who are dual language learners; and
  ⇒ Teaching practitioners to use technology with children.

Figure 3.21 *displays the professional development experiences reported most frequently (by at least 40 percent of faculty members at each degree level) and least frequently (by less than 25 percent of faculty members at each degree level).* ***Appendix Table A3-5*** *displays the full list of professional development experiences.*

Figure 3.22 *displays the professional development topics mentioned most frequently as helpful (by at least 40 percent of faculty members at each degree level) and least frequently (by less than 30 percent of faculty members at each degree level).* ***Appendix Table A3-8*** *displays the full list of professional development topics.*

Figure 3.21: Professional Development Experiences in Last Three Years of Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program: Most and Least Frequenty Reported Topics

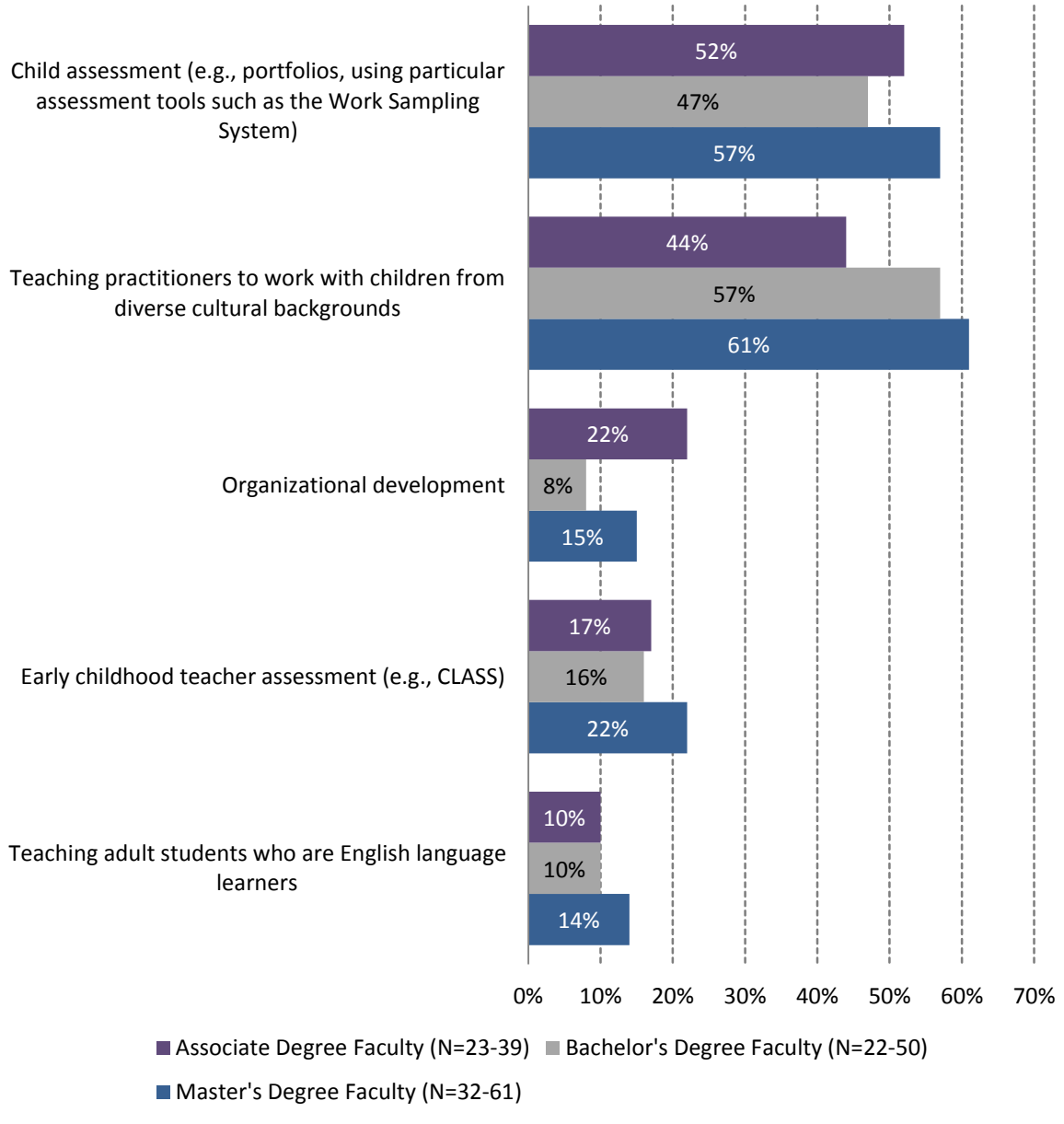
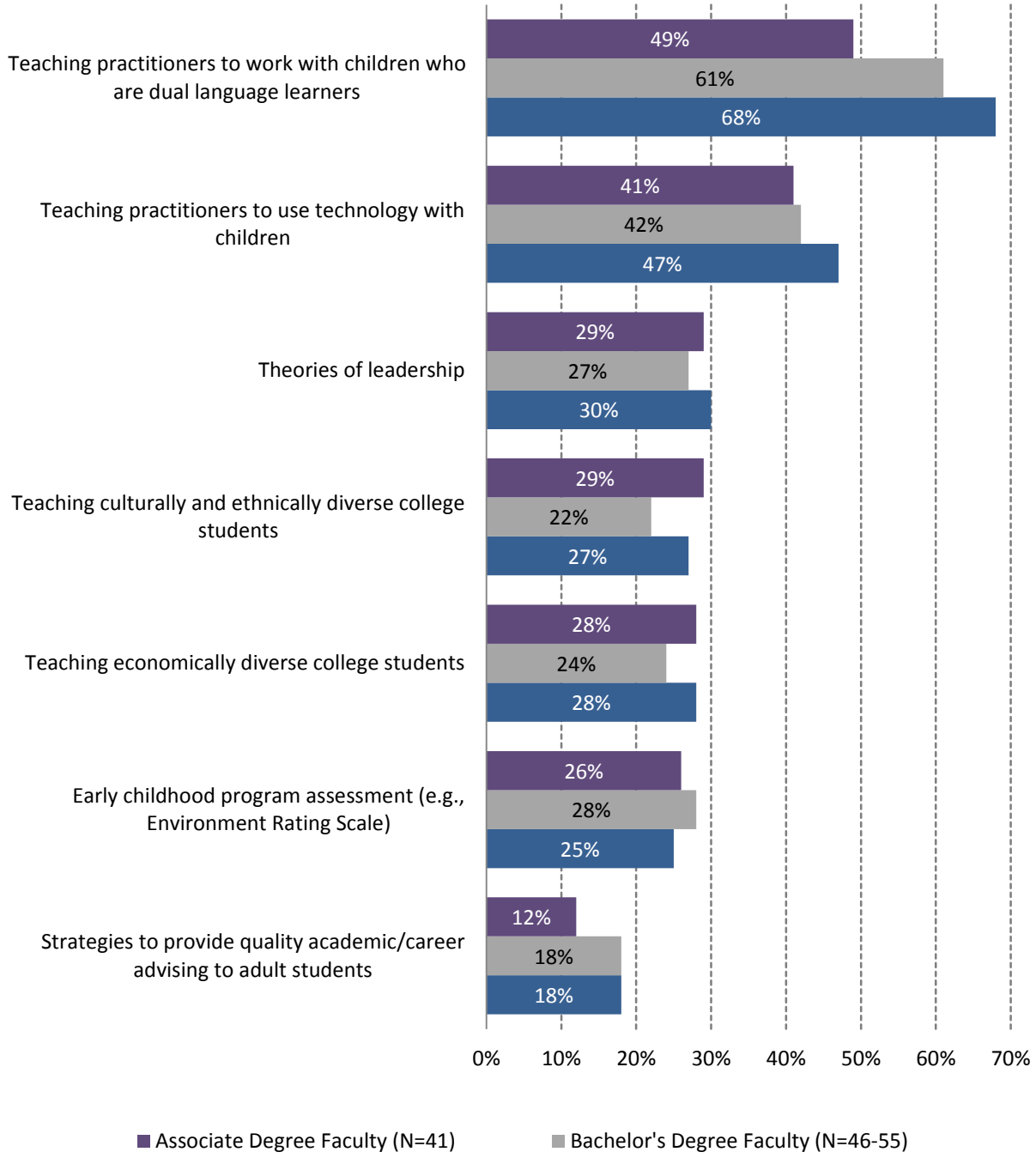


Figure 3.22: Professional Development Topics that Would be Helpful to Faculty Participating in New York Early Childhood Higher Education Inventory, by Degree Program: Most and Least Frequently Reported Topics



CHAPTER 4: CHALLENGES FACING EARLY CHILDHOOD DEGREE PROGRAMS, AND ADDITIONAL RESOURCES NEEDED

Challenges Facing Early Childhood Degree Programs

The Inventory asked deans/coordinators whether their degree programs were facing any challenges. Deans/coordinators who responded "yes" were then asked to identify the challenges from a list of 12 possible responses related to lack of resources and 11 possible responses related to faculty expertise. (See **Figures 4.1** and **4.2,** and **Appendix Tables A4-1** and **A4-2,** for the list of challenges.)

- Almost all associate (91 percent) and bachelor's (90 percent) degree programs, and 81 percent of master's degree programs, reported facing at least one challenge.

Degree programs reporting at least one challenge:

- The four challenges most frequently reported by degree programs at all levels were:

  ⇒ Need for additional faculty expertise in teaching young children who are dual language learners;
  ⇒ Need for additional faculty expertise in teaching infants and toddlers;
  ⇒ Faculty administrative responsibilities that interfere with time with students (e.g., lack of time for teaching, advising); and
  ⇒ Insufficient ability to recruit students.

- Some of the challenges varied by levels of degree program:

  ⇒ Associate and bachelor's degree programs were much more likely to mention "Need for additional faculty expertise in teaching young children who are dual language learners" than were master's degree programs.
  ⇒ Associate degree programs were much more likely to mention "need for additional faculty expertise in teaching young children with special needs" than were degree programs at other levels.
  ⇒ Bachelor's degree programs were much more likely to mention "need for additional faculty expertise in science pedagogy for young children" than were degree programs at other levels.

⇒ Master's degree programs were much more likely to mention "faculty administrative responsibilities that interfere with time with students" than were degree programs at other levels.

Figure 4.1: Challenges Facing New York Early Childhood Higher Education Degree Programs Due to Lack of Resources, By Program

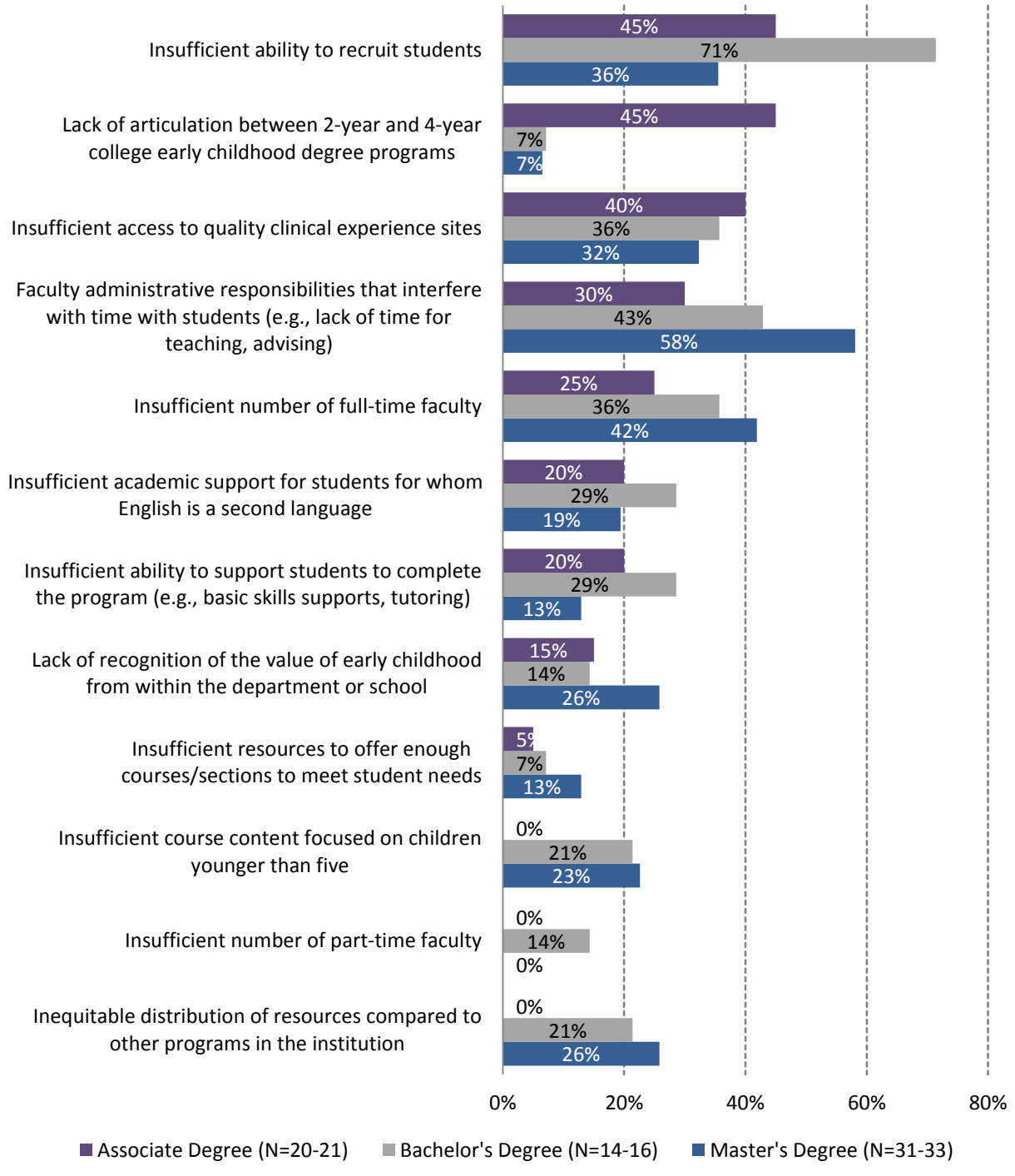
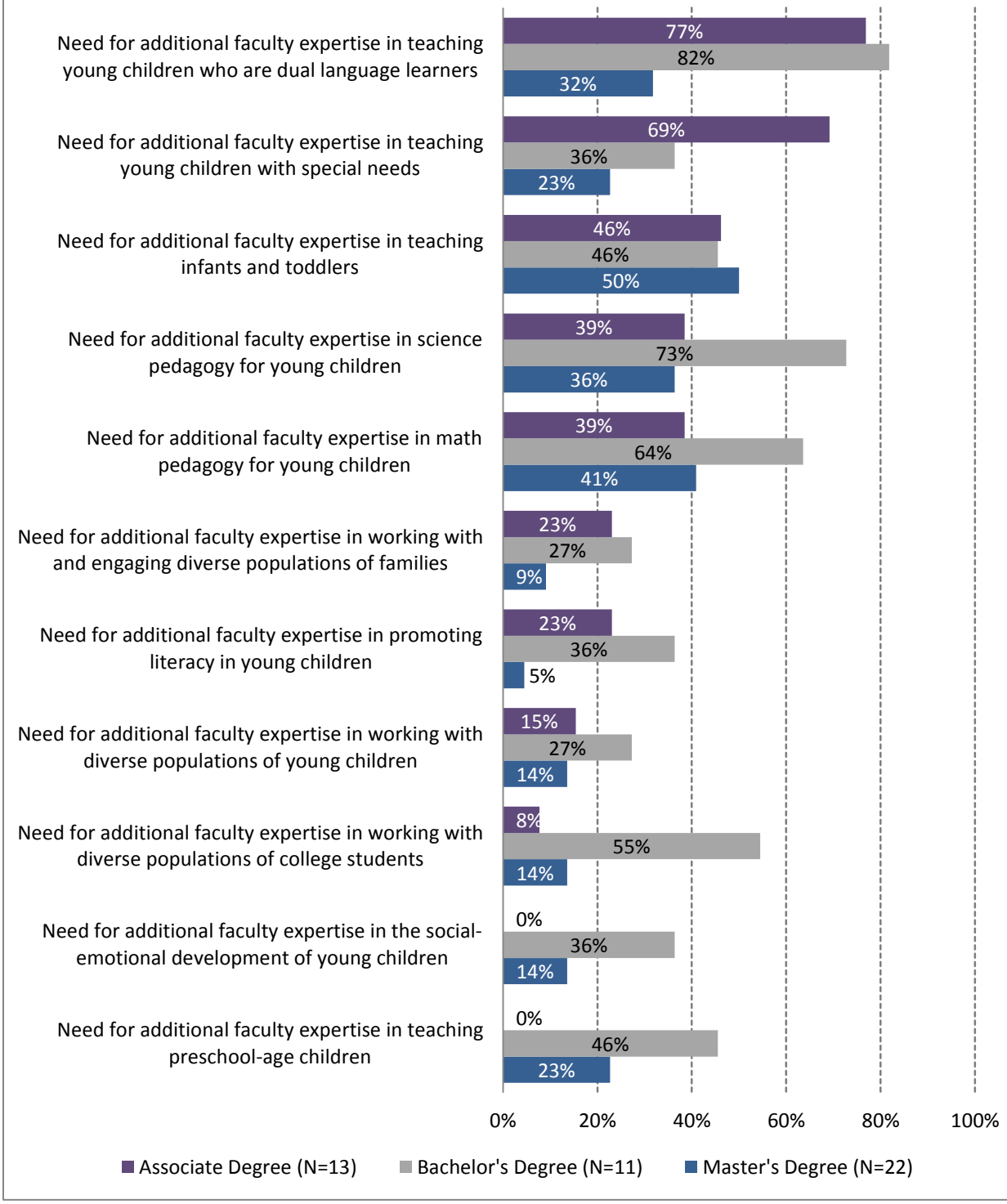


Figure 4.2: Challenges Facing New York Early Childhood Higher Education Degree Programs Due to Need for Faculty Expertise, By Program



Additional Resources Needed for Improving Early Childhood Degree Programs

The Inventory asked faculty members whether resources were needed in order to improve the early childhood degree program(s) at their college or university. Faculty members who responded "yes" were then asked to identify needed resources from a list of eight possible responses related to either program or faculty specific needs. (See **Figures 4.3** and **4.4** for lists of resources.)

- Sixty-two percent of associate, 55 percent of bachelor's, and 51 percent of master's degree faculty members reported that additional resources were needed in order to improve the early childhood degree program at their college or university.

Among faculty members who reported needing at least one additional resource:

- The three most frequently mentioned resources, cited by at least one-half of faculty members at all levels, were:

  ⇒ Resources for faculty professional development;
  ⇒ Additional full-time faculty; and
  ⇒ Increased financial resources for students.

- At least one out of four faculty members at all degree levels mentioned the need for resources to increase faculty diversity.

  ⇒ Almost one-half of bachelor's (46 percent), 41 percent of master's, and 29 percent of associate degree faculty members mentioned the need for an "increase in racial/ethnic diversity among faculty."
  ⇒ More than one-third of bachelor's and approximately one-quarter of master's and one-fifth of associate degree faculty members mentioned the need for an "increase in linguistic diversity among faculty."

- Some of the resources mentioned by faculty varied by program degree levels. For example:

  ⇒ Associate degree faculty members (41 percent) were less likely to mention "funding for travel" than were bachelor's (63 percent) or master's (61 percent) degree faculty members.
  ⇒ Bachelor's degree faculty members (67 percent) were more likely to mention "additional full-time faculty" than were associate (48 percent) or master's (51 percent) degree faculty members.
  ⇒ Master's degree faculty members (41 percent) were less likely to mention "increased academic support for students" than were associate (57 percent) or bachelor's (49 percent) degree faculty members.

Figure 4.3: Additional Program-Related Resources Needed for Improving Early Childhood Degree Programs, as Reported by Faculty Participating in New York Early Childhood Higher Education Inventory, by Degree Program

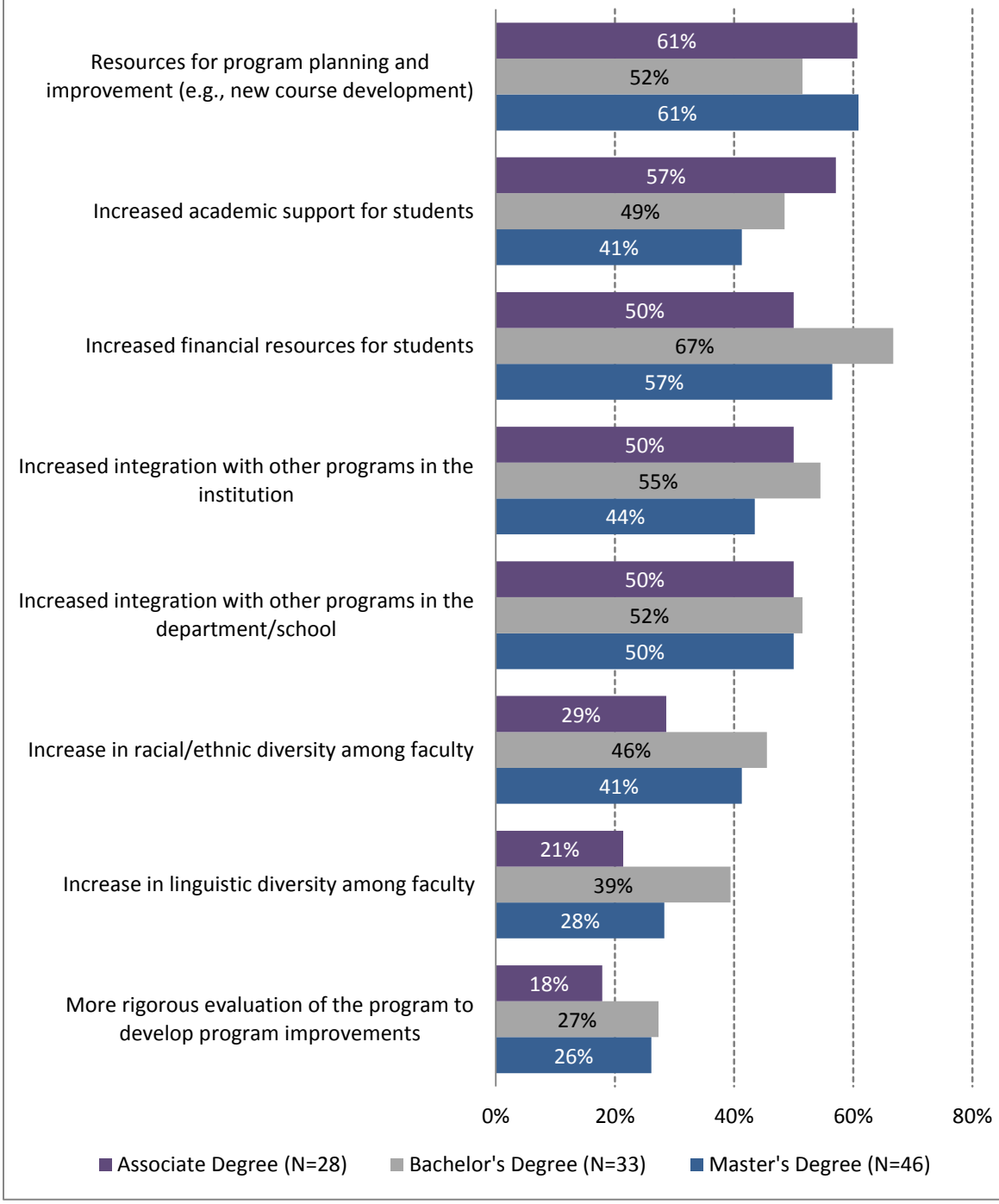
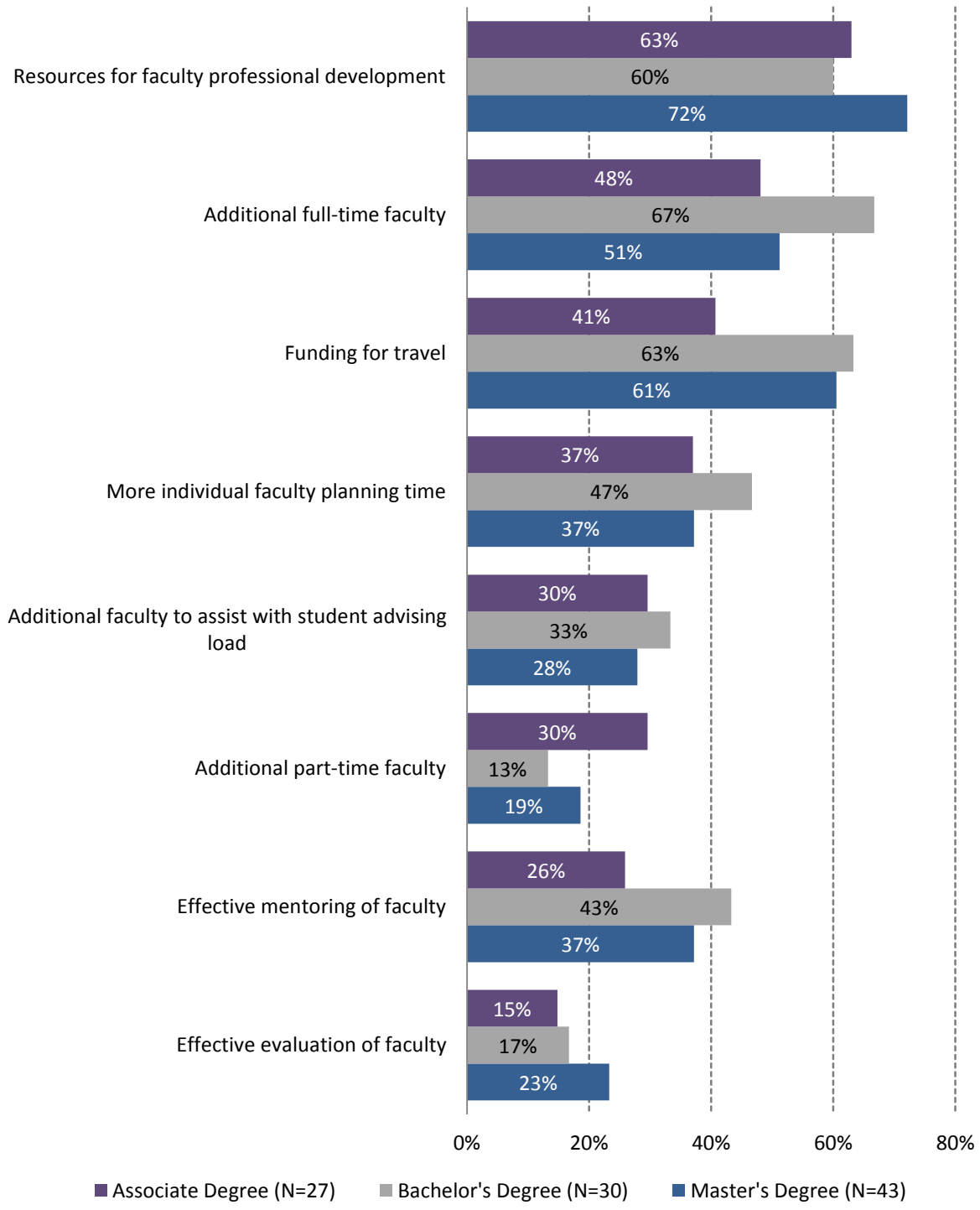


Figure 4.4: Additional Faculty-Related Resources Needed for Improving Early Childhood Degree Programs, as Reported by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program



CHAPTER 5: FAMILY ENGAGEMENT AND EARLY MATHEMATICS

Importance of the Inclusion of Various Domains in Teacher Preparation Programs

The Inventory explored how faculty members view the importance of including the domains of family engagement and early mathematics, relative to other domains, in higher education teacher preparation programs. Faculty members were asked to use a Likert scale of 1 to 4, with 1 meaning "not important" and 4 meaning "very important," to indicate how important they considered it for various domains to be included in these degree programs.

The domains included:

- **Early mathematics**: Understanding the domains and sequence of mathematical knowledge in young children, and how to promote children's mathematical understanding and ability to solve problems.
- **Family engagement**: Understanding and implementing an integrated strategy to engage families in ongoing and reciprocal partnerships, and the relationship of such partnerships to outcomes for children.
- **Literacy**: Understanding the components and sequence of literacy development in young children, and how to promote their skills related to oral and written language.
- **Social-emotional development**: Understanding socio-emotional development and its relationship to learning, and how to support children's socio-emotional skills.
- **Motor development**: Understanding normal and atypical motor development in young children and its relationship to learning, and how to support the development of children's motor skills.

See **Figure 5.1** and **Appendix Table A5-1**.

- Faculty members at all degree levels were less likely to consider it "very important" to include the early mathematics domain than they were for other domains, including family engagement, in teacher preparation programs for practitioners working with infants and toddlers.

  ⇒ More than three-quarters of associate degree faculty members considered it "very important" to include the domains of family engagement (85 percent), social-emotional development (88 percent), and motor development (78 percent) for teachers of infants and toddlers.

⇒ More than one-half of faculty at all degree levels considered it "very important" to include the literacy domains for teachers of infants and toddlers.

⇒ About one-third of associate and bachelor's degree faculty members, and one-quarter of master's degree faculty members, considered it "very important" to include the math domain for teachers of infants and toddlers.

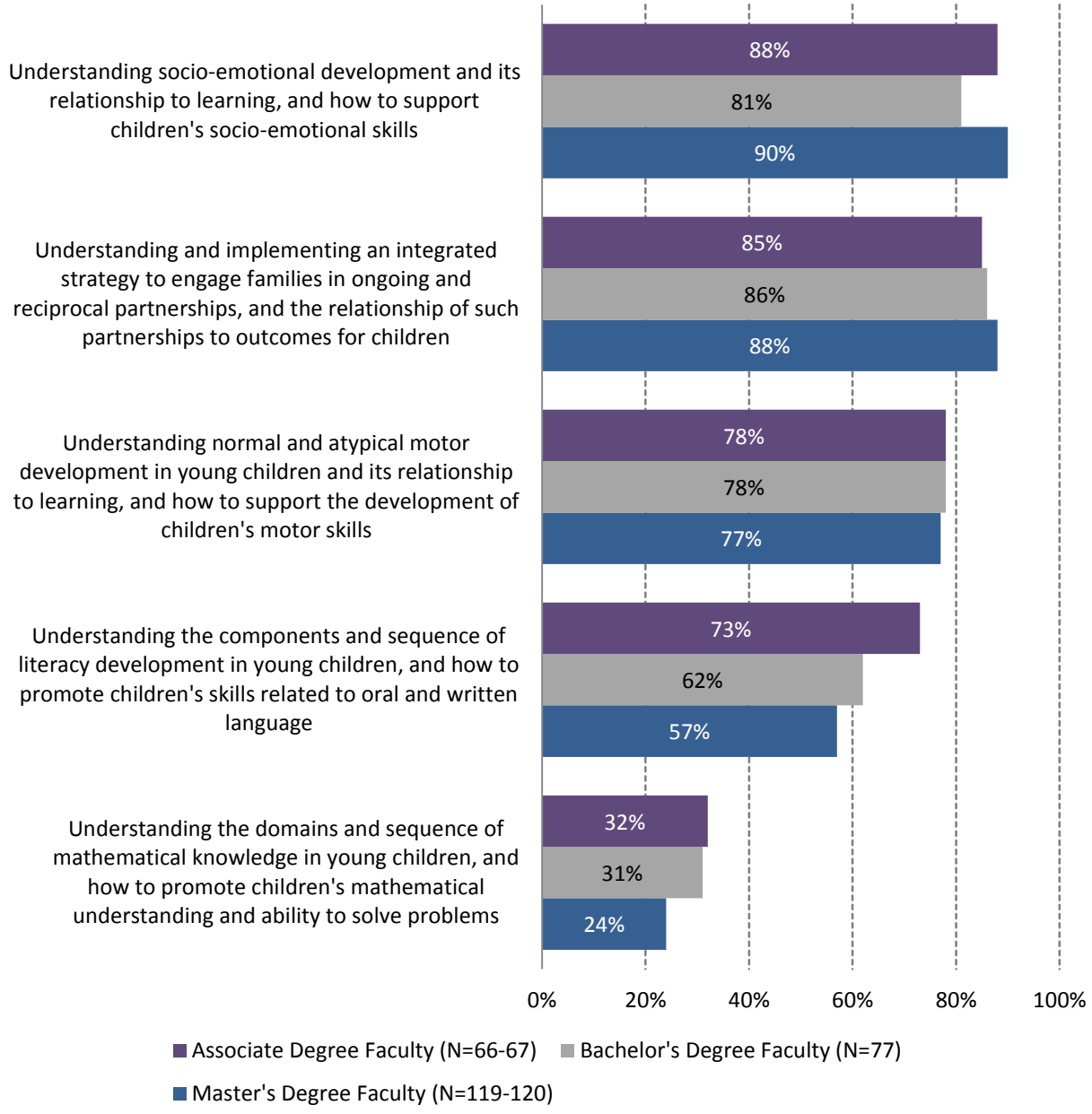
- A greater percentage of faculty members at all degree levels considered it "very important" to include early mathematics in teacher preparation programs for practitioners working with preschoolers, than for those working with infants and toddlers. Differences by domain, however, followed the pattern described above.

  ⇒ Two-thirds of associate degree faculty members considered it "very important" to include the early mathematics domain for preschoolers, compared to 57% of bachelor's degree faculty members and 59% of master's degree faculty members.

  ⇒ Almost three-quarters of faculty members at each degree level considered the other domains, including family engagement, "very important."

Figure 5.1 *displays the proportion of faculty members who responded that it was "very important" to include a given domain in teacher preparation programs focused on infant and toddlers.* ***Appendix Table A5-1*** *displays the data for all age groups of children.*

Figure 5.1: Importance of Inclusion of Domains in Teacher Preparation Programs: Percentage of Faculty Participating in the New York Early Childhood Higher Education Inventory Reporting "Very Important'"for Infants and Toddlers, by Degree Program



Teaching Family Engagement

The Inventory explored the content area of family engagement in depth.

The Inventory asked program leaders of degree programs about: 1) the family engagement topics required for the degree; and 2) the age-group focus of the required coursework. (See **Figure 5.2** and **Appendix Table A5-2**.)

The Inventory also asked program leaders about the alignment of family engagement coursework with state and national family engagement standards. (See **Figures 5.3** and **5.4.**)

Required Family Engagement Course Content and Age-Group Focus (See **Figure 5.2** and **Appendix Table A5-2**)

- Eighty percent or more of degree programs at all levels required seven of the 13 "family engagement" topics listed in the Inventory. The two topics required by less than 75 percent were:

  ⇒ "Utilizing technology to communicate with families," and
  ⇒ "Utilizing community resources."

Figure 5.2 *displays the percentages of degree programs that required the content area of family engagement. See* ***Appendix Table A5-2*** *for the age-group focus of the required content.*

Alignment of family engagement coursework with state and national standards (See **Figures 5.3** and **5.4**)

- One-quarter of associate and bachelor's degree programs, and 44 percent of master's degree programs, reported incorporating state and national family engagement standards into course content. Many reported that they did not know whether the program incorporated any state or national family engagement standards into its course content related to family engagement.

- Degree programs at all levels were most likely to report that the "NAEYC Professional Preparation Standards/CAEP: Standard 2, Building Family and Community Partnerships" and the "NAEYC Program Accreditation Standards: Standard 7: Families" were incorporated into course content.

- Bachelor's degree programs were more likely than associate and master's degree programs to report that the "NAEYC Professional Preparation Standards/CAEP: Standard 2, Building

Family and Community Partnerships" and the "NAEYC Program Accreditation Standards: Standard 7: Families" were incorporated into the course content.

- Bachelor's degree programs were more likely to report that the "Head Start Parent, Family, and Community Engagement Framework" was incorporated into course content.
- Master's degree programs were more likely to report that the "NAEYC Effective Family Engagement Principles" were incorporated into course content.
- Very few programs incorporated any of the other family engagement standards.

Figure 5.2: Coursework on Family Engagement Required by New York Early Childhood Higher Education Degree Programs, by Program

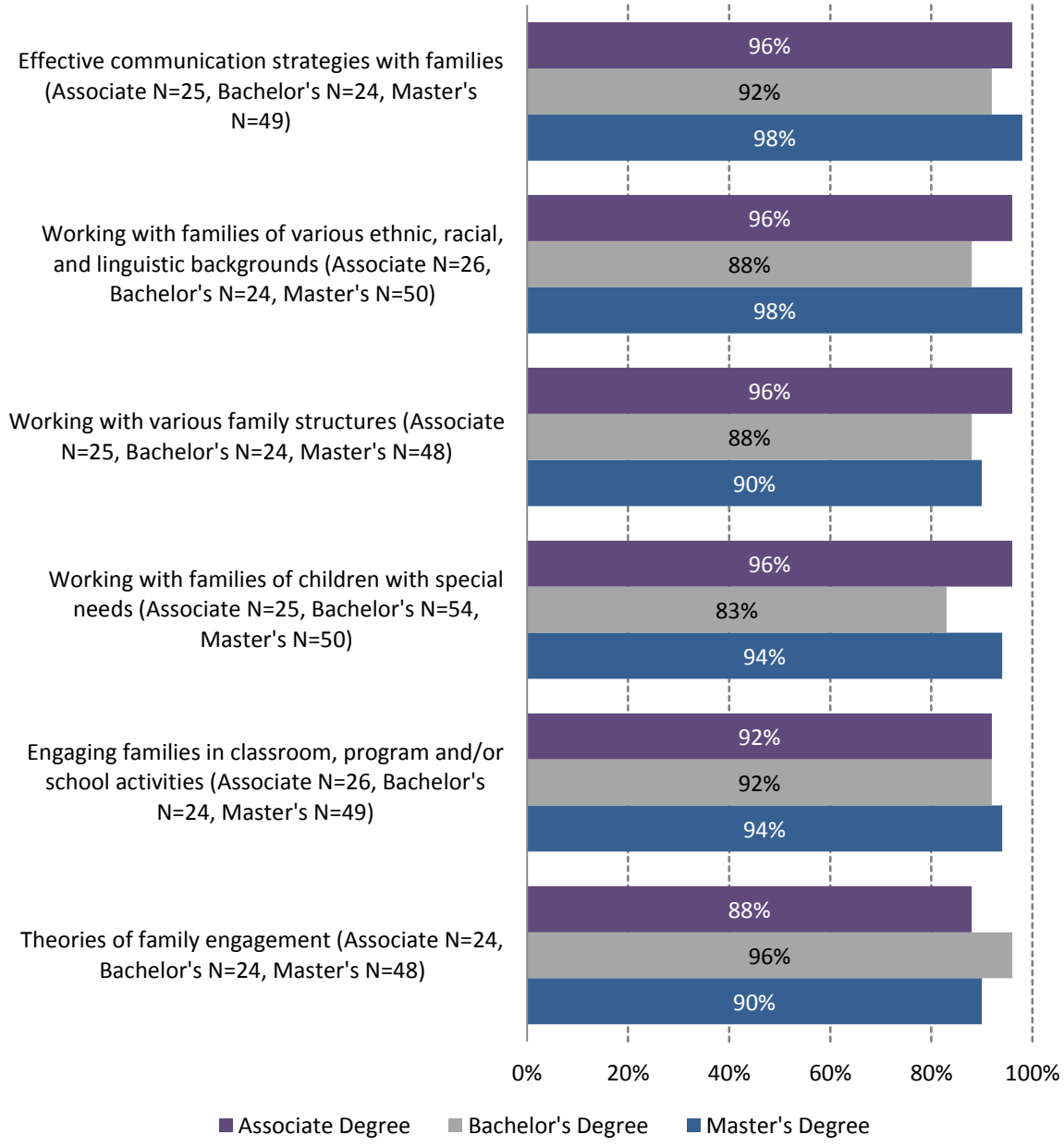


Figure 5.2: Coursework on Family Engagement Required by New York Early Childhood Higher Education Degree Programs, by Program (Continued)

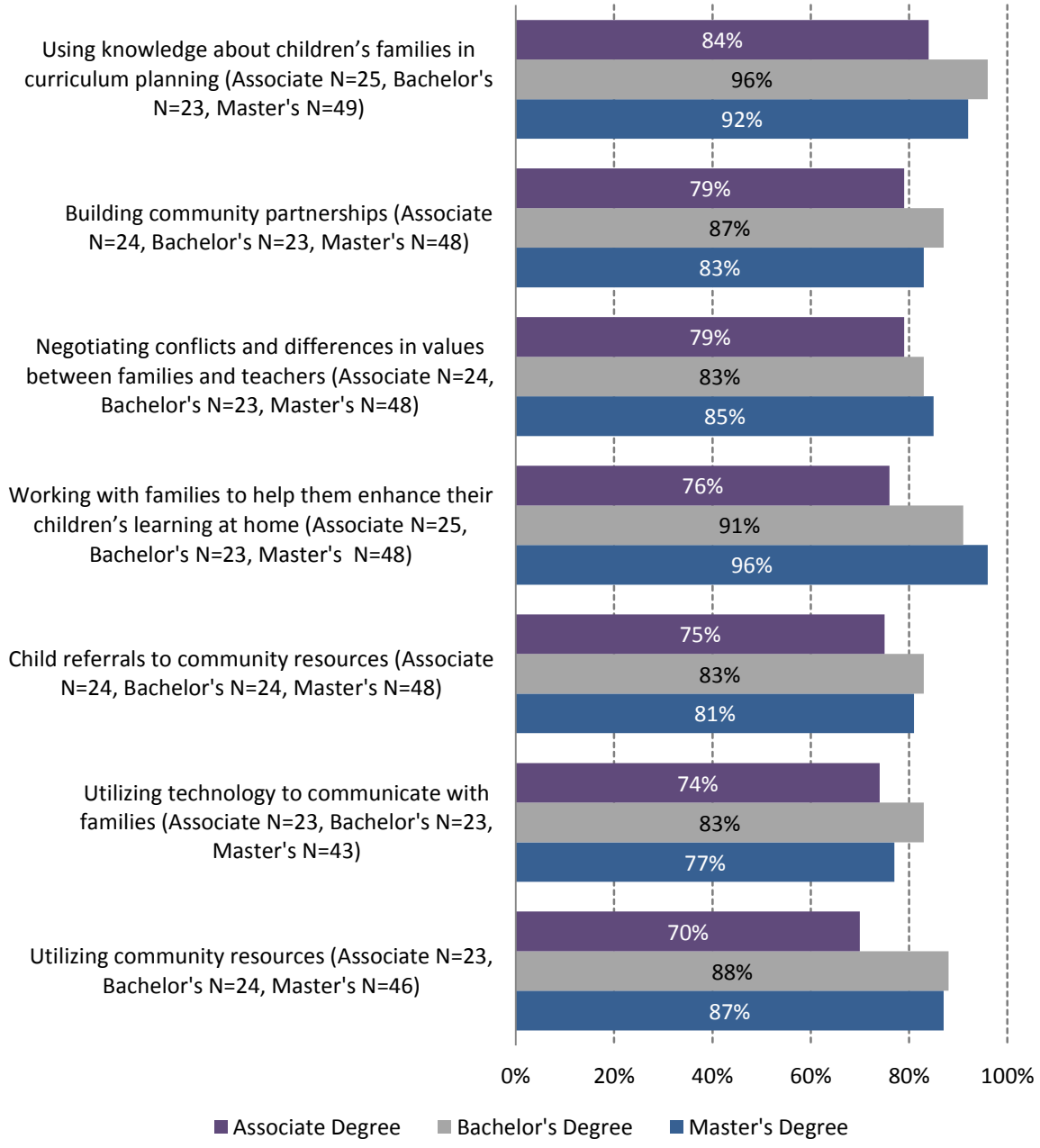


Figure 5.3: State or National Family Engagement Standards Incorporated into Family Engagement Course Content of New York Early Childhood Higher Education Degree Programs, by Program

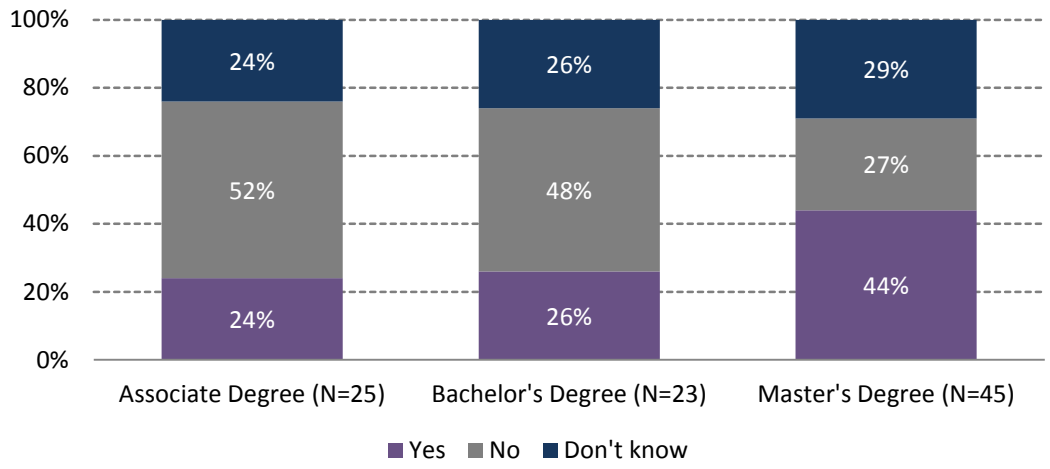
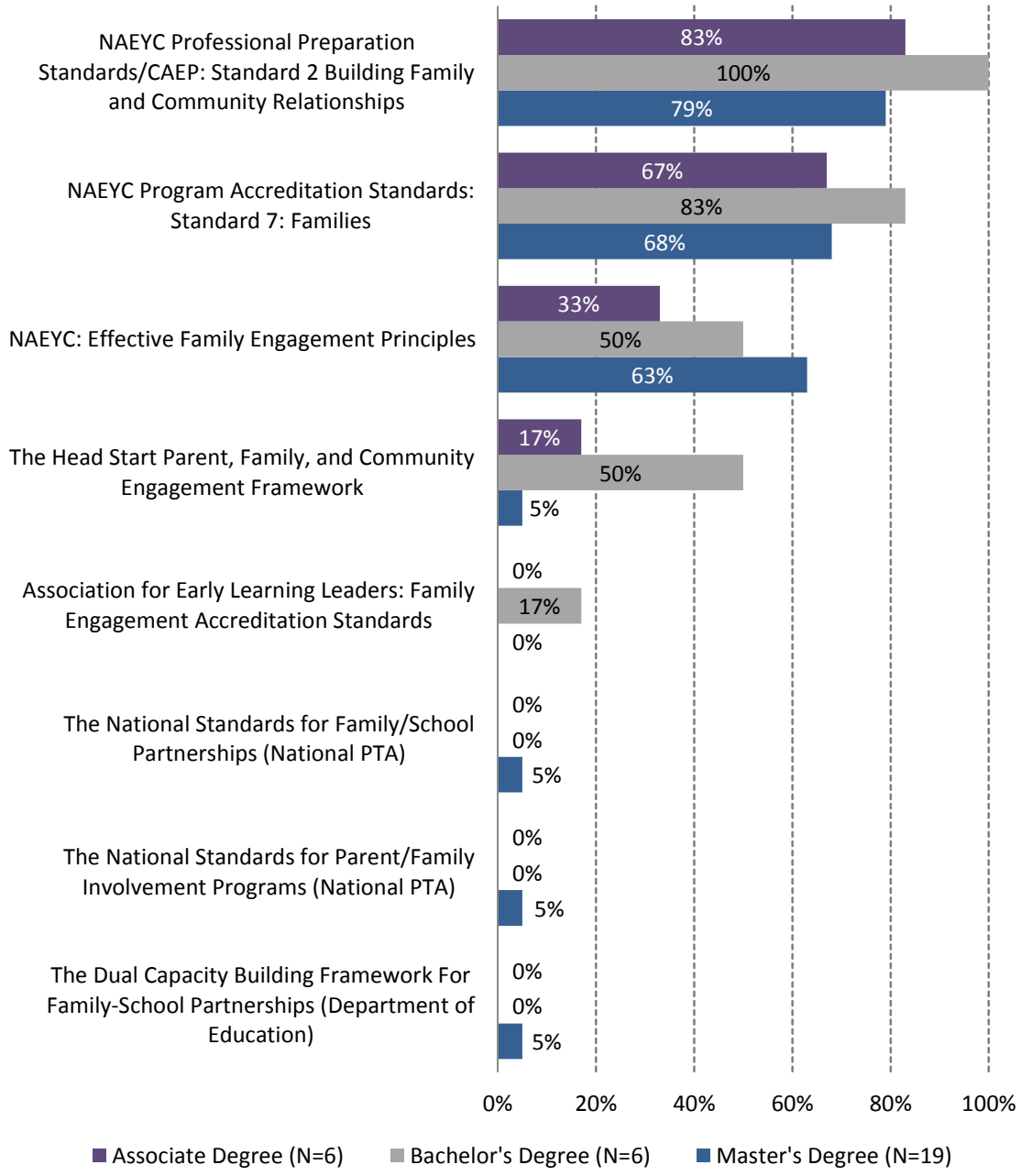


Figure 5.4: State and National Family Engagement Standards Incorporated into Family Engagement Course Content of New York Early Childhood Higher Education Degree Programs, by Program



Teaching Early Mathematics

The Inventory explored the early mathematics content area in depth. This content area was divided into two subject areas, "Development of Children's Mathematical Understanding" and "Teaching Math Skills to Children."

The Inventory asked deans/coordinators of degree programs about: 1) topics within these content areas required for the degree; and 2) the age-group focus of required coursework. (See **Figures 5.5** and **5.6**, and **Appendix Tables A5-3** and **A5-4**.)

The Inventory also asked deans/coordinators about the alignment of math coursework with state and national early math standards.

In addition, the Inventory asked about the structure of math-related courses:

1. Whether math content was taught as a separate course or within child development and/or teaching and curriculum courses covering multiple topics. (See **Figure 5.7**.)

2. Whether contextualized math courses (those that relate mathematical concepts to the math that early childhood practitioners need in their profession) were offered to students, and if so, who taught such courses. (See **Figures 5.8** and **5.9**.)

The Inventory also asked faculty members to assess their capacity to prepare practitioners to promote children's mathematical understanding and to teach math skills. For each of the 14 topics (see **Figures 5.10** and **5.11,** and **Appendix Tables A5-5** and **A5-6**), faculty members were asked to identify whether they:

1. Had limited familiarity;
2. Were knowledgeable but not prepared to teach others; or
3. Were capable of preparing teachers working with children:

- Birth through 2 years;
- 3 and/or 4 years (Pre-K); or
- Kindergarten through 2nd grade or higher.

The Inventory also asked faculty members to identify the topics they had taught in the past two years in the Teaching Math Skills to Children subject area. They were then asked to specify the age-group focus of the topics covered in their coursework. (See **Figure 5.12** and **Appendix Table A5-7**.)

Teaching Math Skills to Children (See **Figure 5.5** and **Appendix Table A5-3**)

- Almost all associate and bachelor's degree programs reported requiring each of the five topics in the "development of children's mathematical understanding" content area.

  ⇒ Associate degree programs were more likely to focus all topics related to children's mathematical understanding on preschoolers rather than on other age groups.

  ⇒ Bachelor's degree programs were more likely to focus all topics related to children's mathematical understanding on school-age children rather than on other age groups.

- More than three-quarters of master's degree programs reported requiring all five topics.

  ⇒ Across the five topics, master's degree programs were less likely to focus topics related to the development of mathematical understanding on infants and toddlers than on preschoolers or school-age children.

Development of Children's Mathematical Understanding (See **Figure 5.6** and **Appendix Table A5-4**)

- Three-quarters or more of associate degree programs reported requiring seven of the eight topics in the "development of children's mathematical understanding" content area.

  ⇒ One-third required the topic "supporting English learners in developing mathematical knowledge as they concurrently acquire English."

- At least 85 percent of bachelor's degree programs and 75 percent of master's degree programs reported requiring each of the eight topics in the "teaching math skills to children" content area.

Age-Group Focus for Early Math

- The age-group focus of early math topics varied by topic and degree level. Overall, however:

  ⇒ Associate degree programs were more likely to focus early math topics on preschool-age children than on children in the other age groups.

  ⇒ Bachelor's and master's degree programs were more likely than associate degree programs to focus topics related to "development of children's mathematics" on school-age children.

  ⇒ The focus on infants and toddlers for the "teaching math skills to children" topics was more consistent across degree programs.

- More than one-half of degree programs at all levels reported a focus on infants and toddlers for all eight topics.

⇒ Associate degree programs were the least likely of all degree programs to focus early math topics on children in kindergarten or in the early elementary grades.

Figures 5.5 *and* ***5.6*** *display the percentages of degree programs that reported requiring various topics for students to attain their degree. See* ***Appendix Tables A5-3*** *and* ***A5-4*** *for the age-group focus of each topic.*

Figure 5.5: Coursework on Teaching Children Math Skills Required by New York's Early Childhood Higher Education Degree Programs, by Program

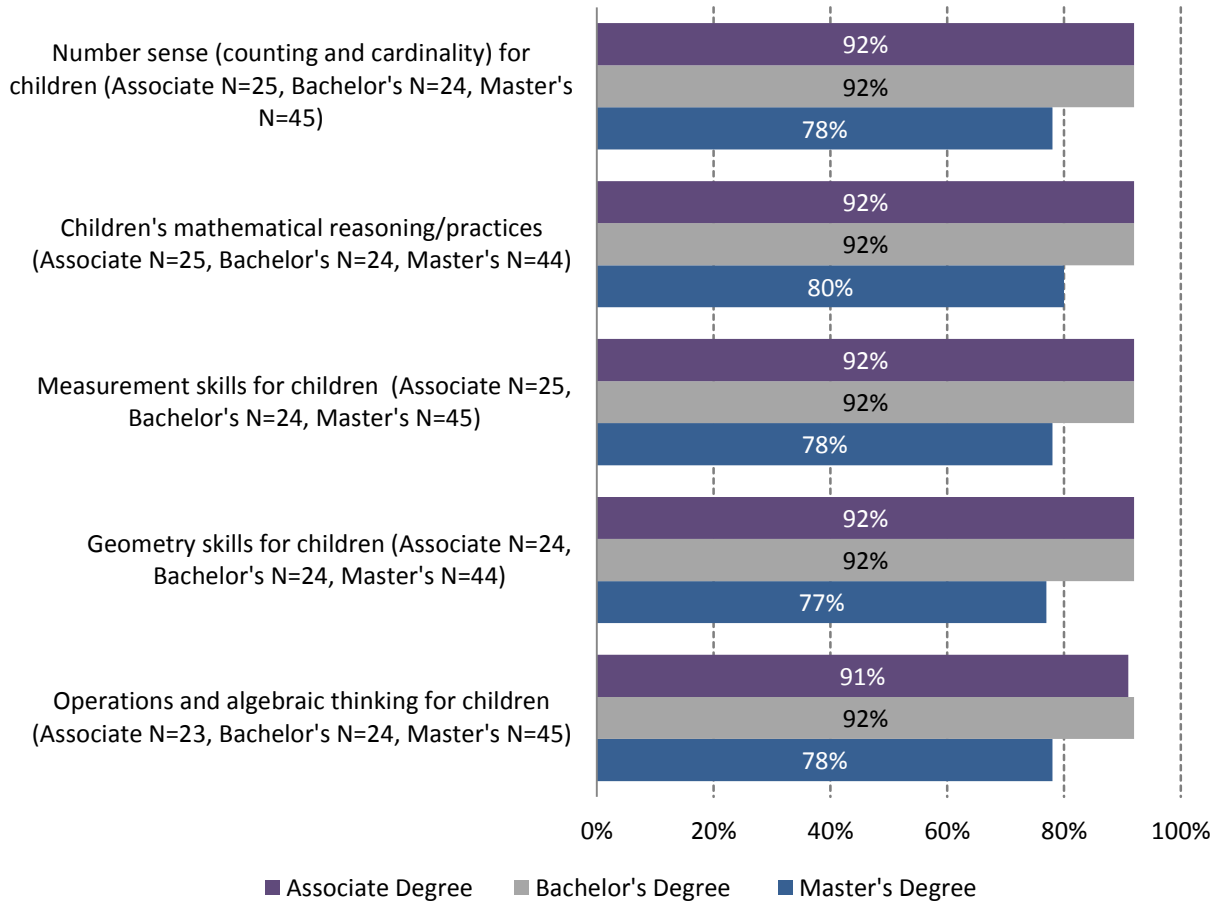
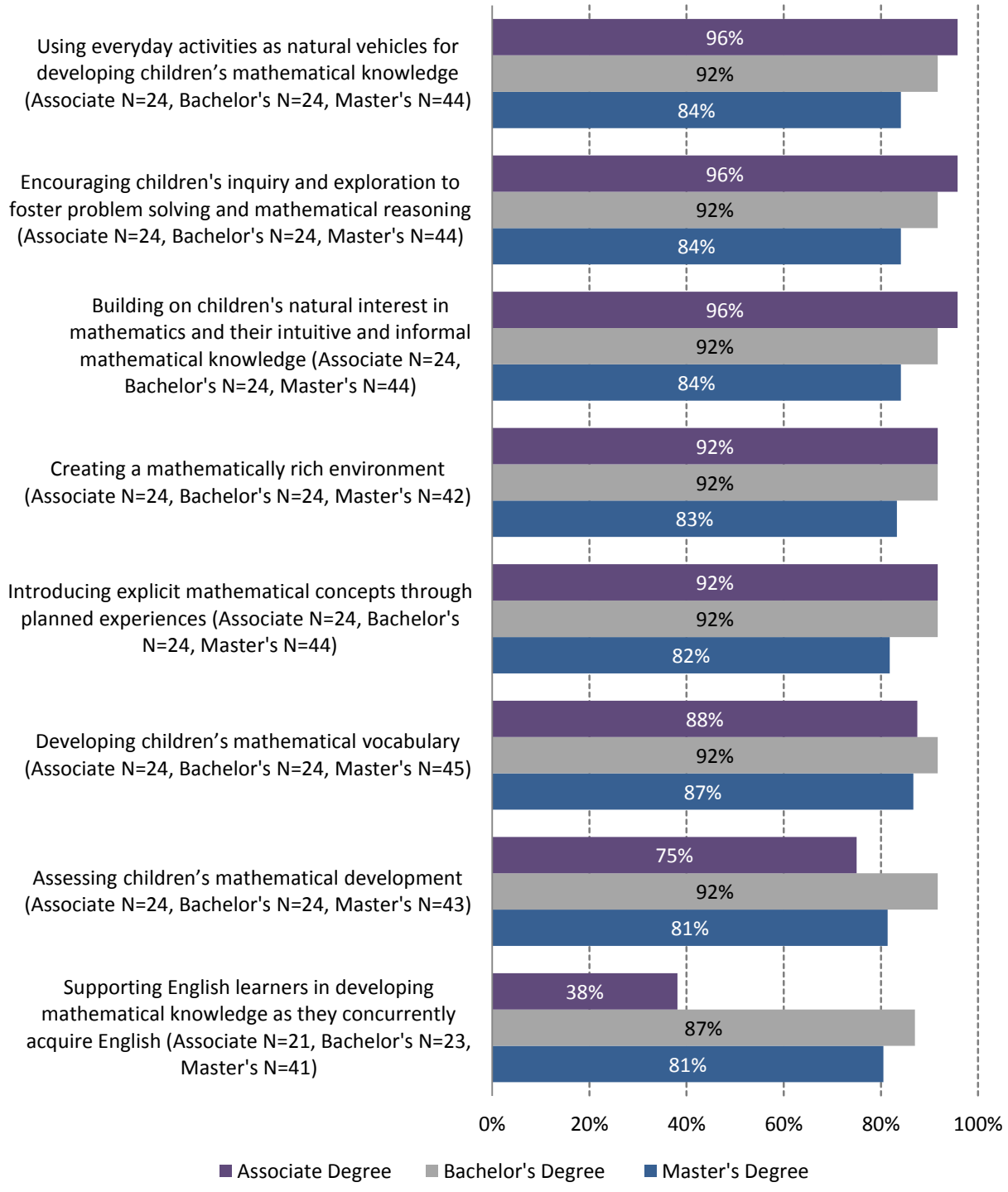


Figure 5.6: Coursework on Development of Children's Mathematical Understanding Required by New York's Early Childhood Higher Education Degree Programs, by Program



Structure of Early Math Courses (See **Figure 5.7**)

- Overall, degree programs reported that math topics were taught within child development and/or teaching and curriculum courses covering multiple topics, as opposed to being taught as separate courses.

- Bachelor's programs were more likely to report that topics related to both "the development of young children's mathematical understanding" and "teaching math skills to young children" were taught together as one course.

  ⇒ Almost three-quarters of bachelor's degree programs, compared to 57 percent of associate and 69 percent of master's degree programs, reported that topics related to both the "development of young children's mathematical understanding" and "teaching math skills to young children" were taught together in one course.

- Overall, most degree programs did not offer contextualized math courses that would serve to meet the math related general education requirement of the college. Less than one-quarter of degree programs did so.

Alignment of Early Math Coursework with State and National Standards (See **Figures 5.8** and **5.9**)

- More than 80 percent of all degree programs reported aligning their math coursework with state and national math standards.

- Degree programs at all levels were most likely to report aligning with the New York State Common Core Learning Standards for Mathematics (P-12).

- Associate degree programs were more likely than bachelor's and master's degree programs to report aligning with the New York State Early Learning Guidelines.

- Master's degree programs were more likely than associate and bachelor's degree programs to report aligning with the NAEYC Accreditation Standards 2F: Curriculum Content Area for Cognitive Development, Early Mathematics.

- Bachelor's and master's degree programs were more likely than associate degree programs to report aligning with the National Council of Teachers of Mathematics (NCTM) Principles and Standards for School Mathematics.

Figure 5.7: Structure of Early Math-Related Coursework in New York Early Childhood Higher Education Degree Programs, by Program

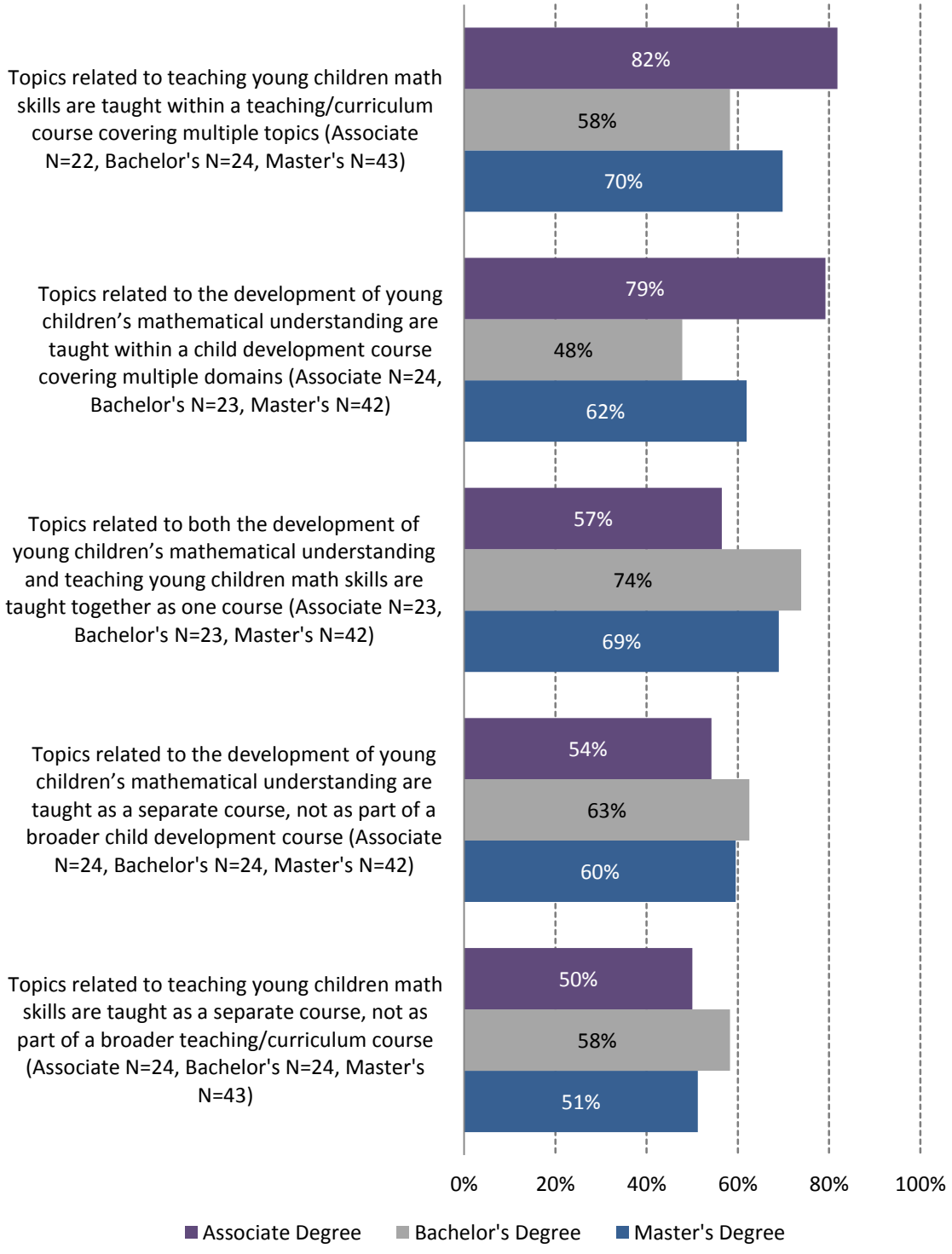


Figure 5.8: State or National Math Standards Incorporated into Early Math Course Content of New York Early Childhood Higher Education Degree Programs, by Program

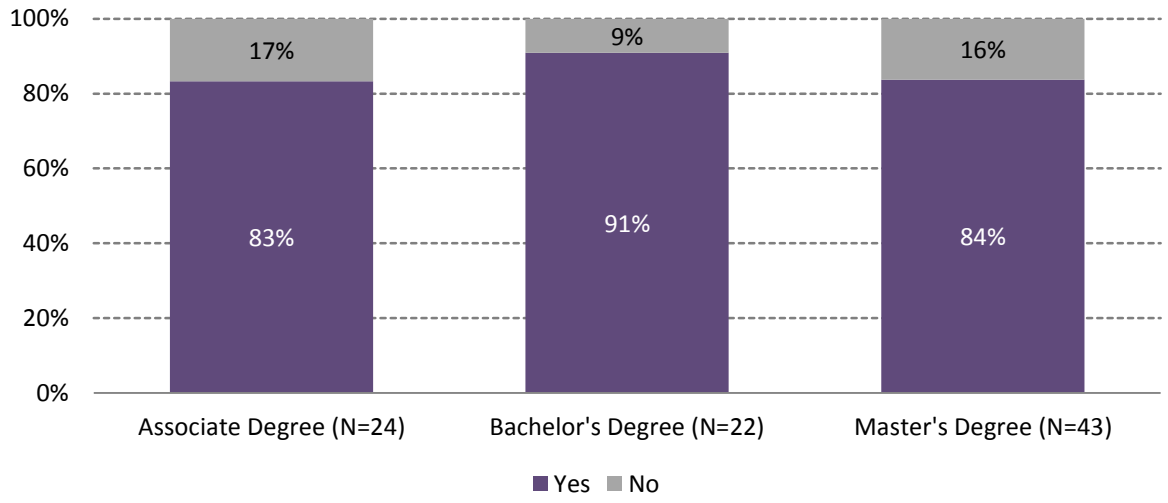
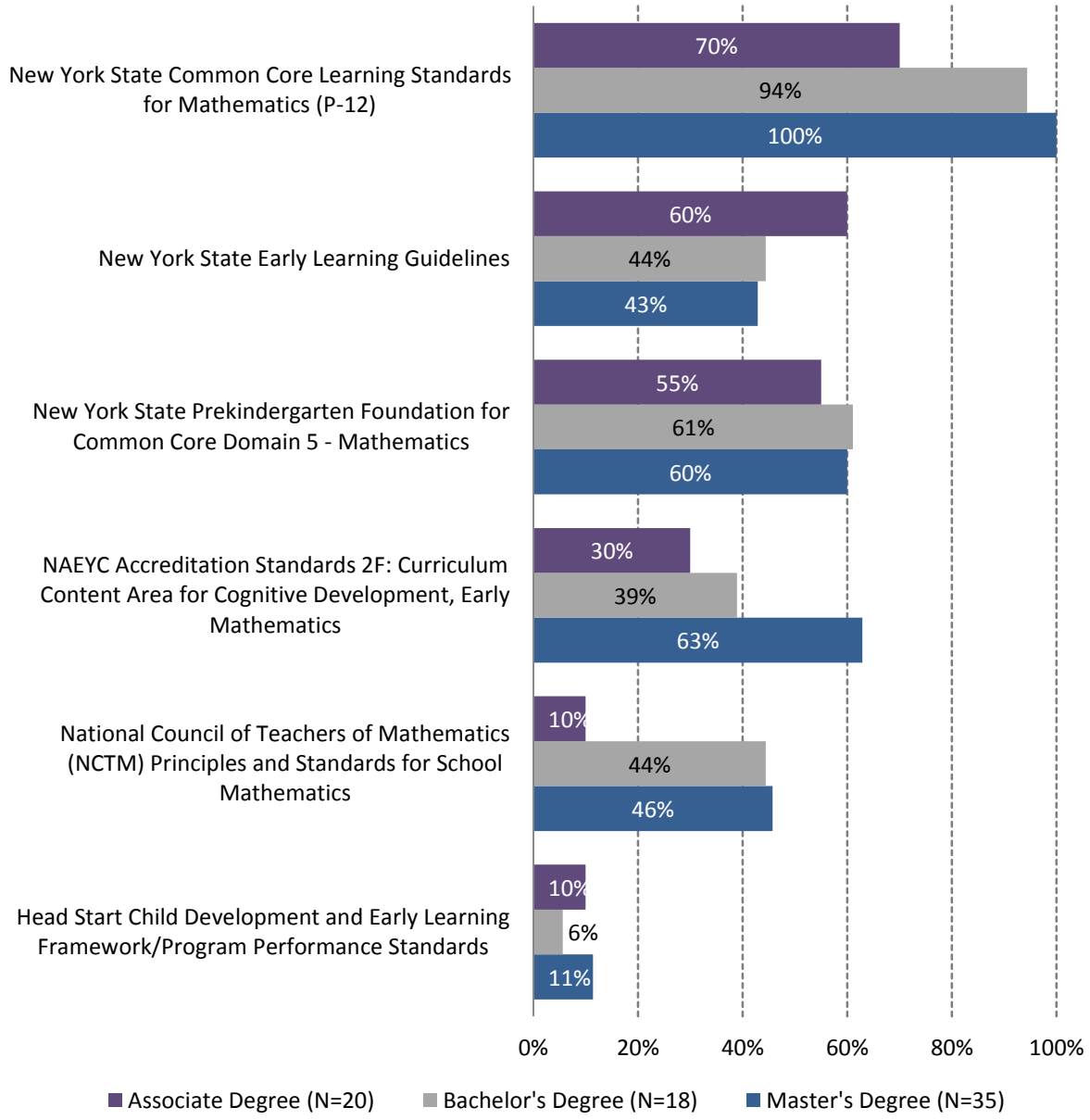


Figure 5.9: State and National Math Standards Incorporated into Early Math Course Content of New York Early Childhood Higher Education Degree Programs, by Program



Faculty Members' Capacity to Teach Early Mathematics (See **Figures 5.10** and **5.11**, and **Appendix Tables A5-5** and **A5-6**)

- Associate degree faculty members were the most likely among faculty at all degree levels to report being capable of preparing practitioners to work with infants and toddlers around promoting mathematical understanding and teaching math skills.

  ⇒ At least two-thirds of associate degree faculty members reported the capacity to teach 11 of the 13 topics listed in the Inventory.
  ⇒ At least one-half of bachelor's degree faculty members reported the capacity to teach topics.
  ⇒ At least one-half of master's degree faculty members reported the capacity to teach 10 of the 13 topics.

- A larger percentage of faculty members at all degree levels reported being capable of preparing practitioners to work with preschoolers than with children in the other age groups.

  ⇒ At least three-quarters of associate degree faculty members reported the capacity to teach 12 of the 13 topics listed in the Inventory.
  ⇒ At least two-thirds of bachelor's degree faculty members reported the capacity to teach 10 of the 13 topics listed in the Inventory.
  ⇒ At least one-half of master's degree faculty members reported the capacity to teach 11 of the 13 topics listed in the Inventory.

- The topic for which faculty members (at all degree levels and across age groups of children) were least likely to report the capacity to teach practitioners was:

  ⇒ Supporting English learners in developing mathematical knowledge as they concurrently acquire English.

Figure 5.10: Capability of Faculty to Prepare Teachers to Work with Infants and Toddlers: Math Skills - Reported by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program

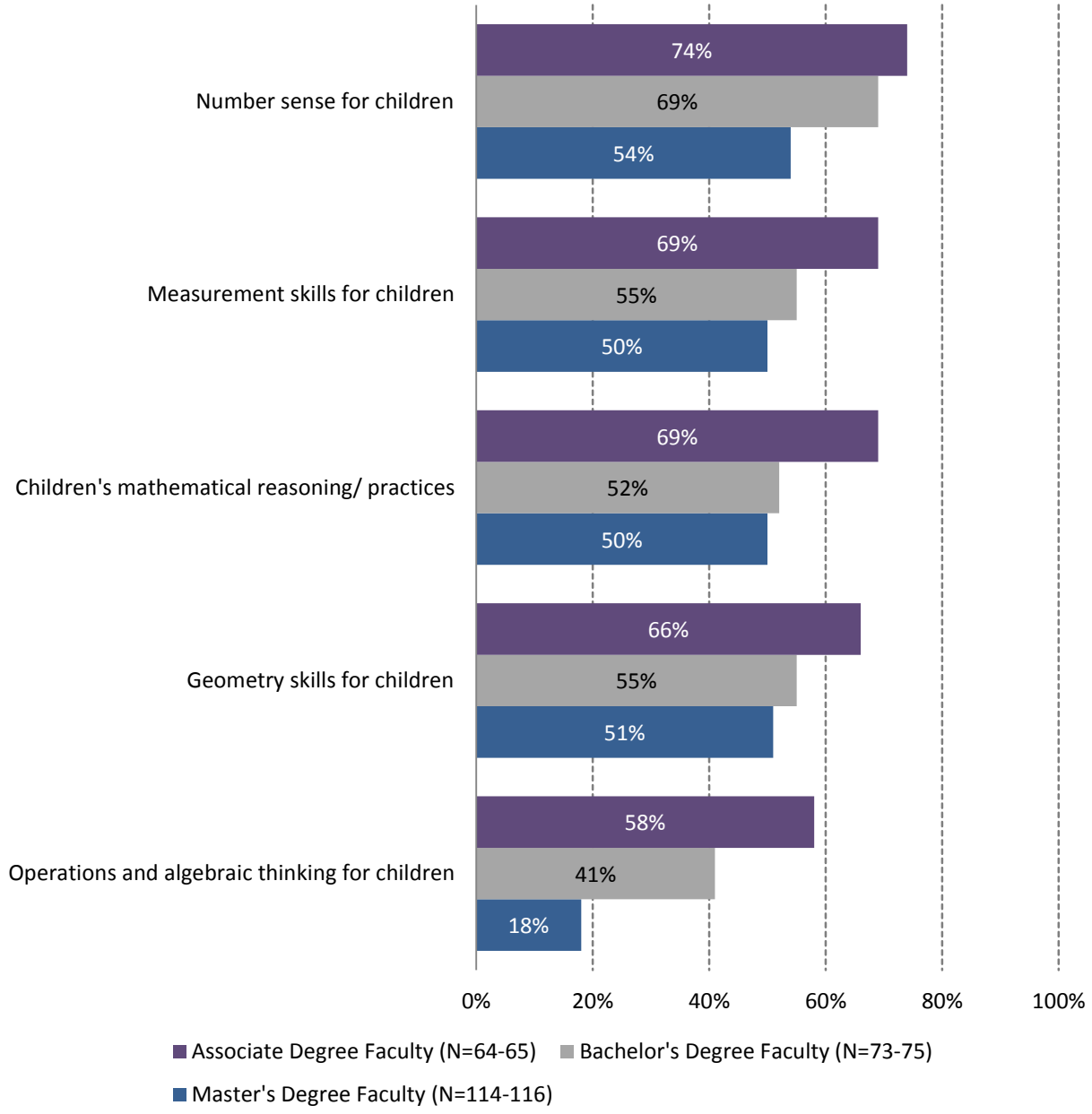
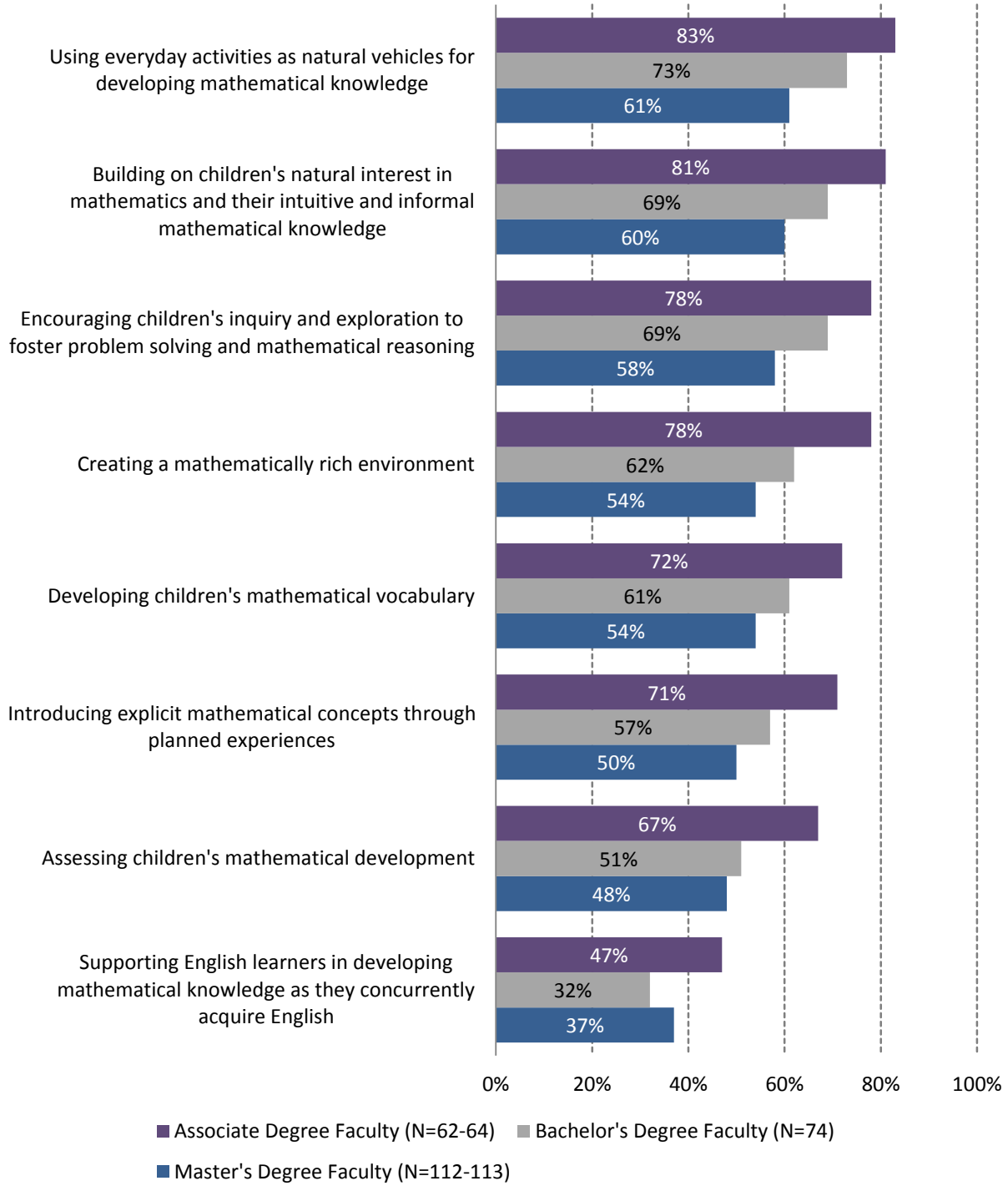


Figure 5.11: Capability of Faculty to Prepare Teachers to Work with Infants and Toddlers: Development of Math Understanding - Reported by Faculty Participating in the New York Early Childhood Higher Education Inventory, by Degree Program



Early Mathematics Course Content Taught in the Past Two Years (See **Figure 5.12** and **Appendix Table A5-7**)

- Associate and bachelor's degree faculty members were more likely than master's degree faculty members to report having taught early math topics during the past two years at their college or university.

  ⇒ At least three-quarters of associate degree faculty members reported teaching six of the eight early math topics listed in the Inventory during the past two years at their college or university.
  ⇒ At least one-half of bachelor's degree faculty members reported teaching seven of the eight topics.
  ⇒ At least one-half of master's degree faculty members reported teaching four of the eight topics.

- Faculty members (at all degree levels and across age groups of children) were least likely to report having taught the math topic, "supporting English learners in developing mathematical knowledge as they concurrently acquire English."

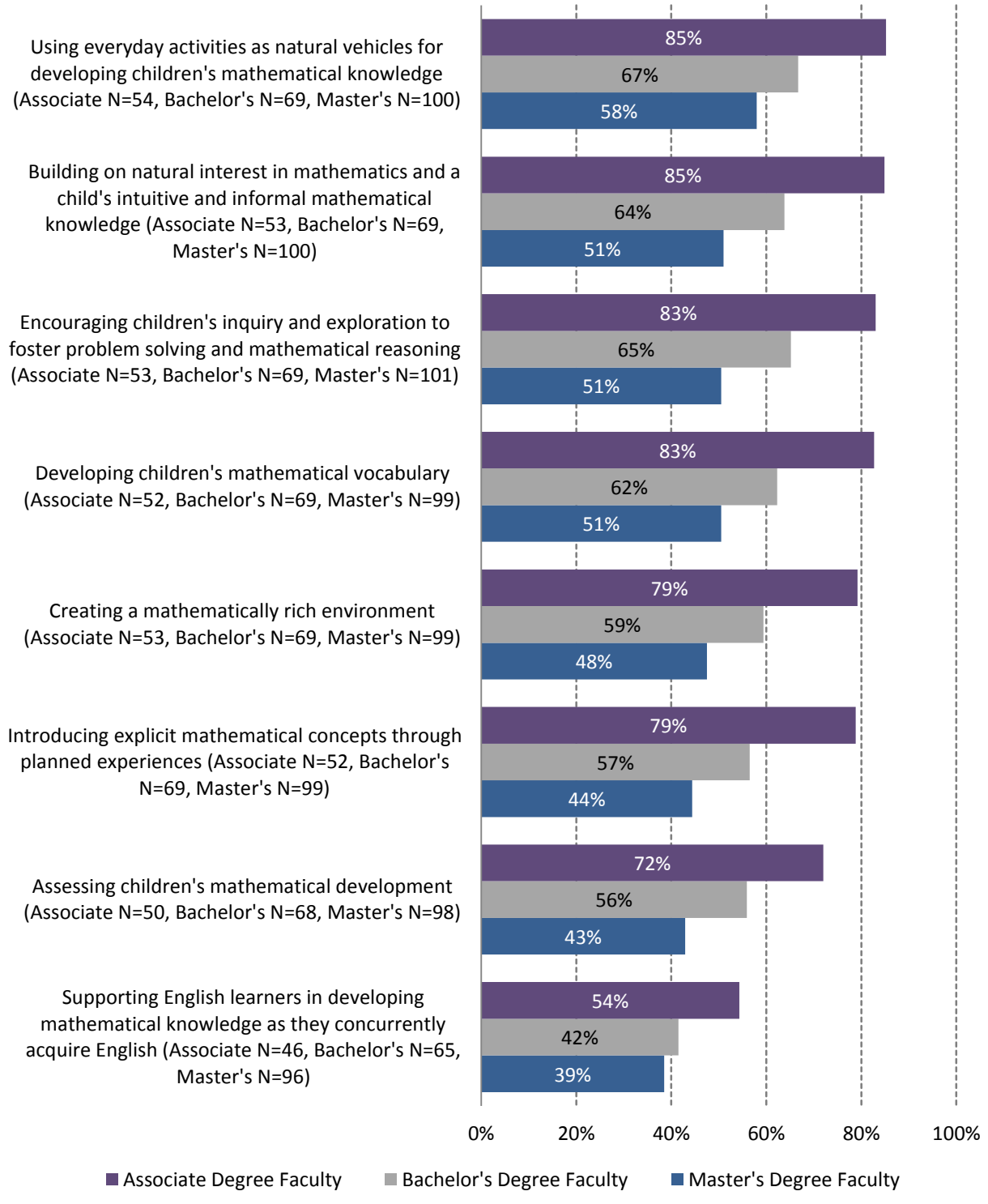
- Associate degree faculty members were more likely to report having taught math topics with a focus on working with preschoolers than on working with children in other age groups.

- Bachelor and master's degree faculty members were more likely to report having taught math topics with a focus on working with preschoolers and children in the early elementary grades than on working with infants and toddlers.

- Associate degree faculty members were the most likely to report focusing on math-related topics for infants and toddlers, and the least likely to report focusing on such content for children in the early elementary grades.

Figure 5.12 *displays the percentages of faculty members at each degree level who reported teaching a given topic within the past two years. See* ***Appendix Table A5-7*** *for the age-group focus of the content taught.*

Figure 5.9: Coursework on Teaching Math Skills Taught by Faculty Participating in New York Early Childhood Higher Education Inventory, by Degree Program



Level of Interest in Professional Development Topics Related to Early Math and Family Engagement

In addition to the professional development questions discussed in Chapter 3, the Inventory asked more specifically about faculty members' interest in professional development related to early mathematics and family engagement. Using a Likert scale of 1 to 5, with 1 being "no interest" and 5 being "very interested," faculty members were asked to rate how interested they would be in 14 topics related to early mathematics and 12 topics related to family engagement.

(See **Figures 5.13** to 5**.15,** and **Appendix Tables A5-8** to **A5-10**.)

- When asked to rate their interest in a list of math-related topics for professional development, associate degree faculty members were more likely to report that they would be "very interested" in additional knowledge or training. There were differences in topics of interest by degree level.

  ⇒ Roughly one-third or more of associate degree faculty reported that they would be "very interested" in 13 out of the 14 topics related to early mathematics. The most frequently selected topic was "strategies to help practitioners who struggle with mathematics build confidence in their ability to facilitate children's mathematical understanding and skill" (47 percent).

  ⇒ More than one-quarter of bachelor degree faculty reported that they would be "very interested" in nine out of the 14 topics related to early mathematics. The most frequently selected topic was "integrating mathematical understanding and skills in all aspects of curriculum" (34 percent).

  ⇒ Similarly, approximately 30 percent or more of master's degree faculty reported that they would be "very interested" in five out of the 14 topics related to early mathematics. The most frequently selected topic was "integrating mathematical understanding into children's daily activities" (32 percent).

- Larger percentages of master's degree faculty members reported being "very interested" in family engagement topics than in early math topics. There were differences in topics of interest by degree level.

  ⇒ One-third or more of master's degree faculty reported that they would be "very interested" in all 12 topics related to family engagement. The most frequently selected topic was "teaching practitioners to work with families of children with special needs" (40 percent) and "techniques for gathering knowledge about children's families" (40 percent).

  ⇒ One-third or more of associate degree faculty reported that they would be "very interested" in eight of the 12 topics related to family engagement. The most frequently selected topic was "negotiating conflict with families" (42 percent).

⇒ Less than one-third of bachelor's degree faculty reported that they would be "very interested" in any of the 12 topics related to family engagement. The most frequently selected topic was "effective communication strategies with families" (32 percent).

Figure 5.13 *and* ***5.14*** *displays the percentages of faculty members at all degree levels who reported that they would be "very interested" in various early math-related professional development opportunities.* ***Appendix Tables A5-8*** *and* ***A5-9*** *display the responses for all interest levels.*

Figure 5.15 *displays the percentages of faculty members at all degree levels who reported that they would be "very interested" in a family engagement-related professional development opportunity.* ***Appendix Table A5-10*** *displays the responses for all interest levels.*

Figure 5.13: Level of Interest in Professional Development on Teaching Math Skills and Strategies Reported by Faculty Participating in the New York Early Childhood Higher Education Inventory: Percentage Reporting "Very Interested," by Program

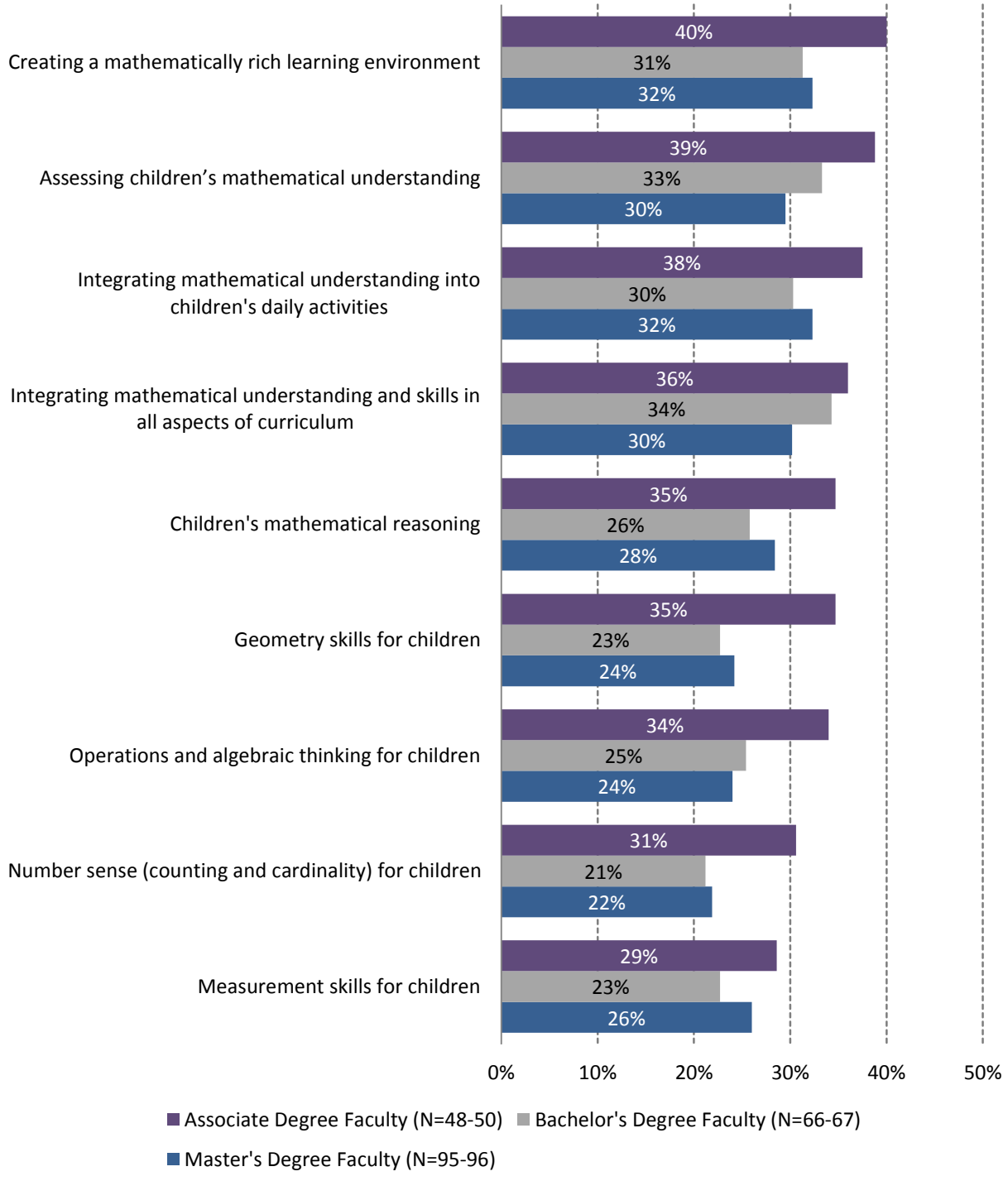


Figure 5.14: Level of Interest in Professional Development on Math Understanding by Faculty Participating in New York Early Childhood Higher Education Inventory: Percentage Reporting "Very Interested," by Degree Program

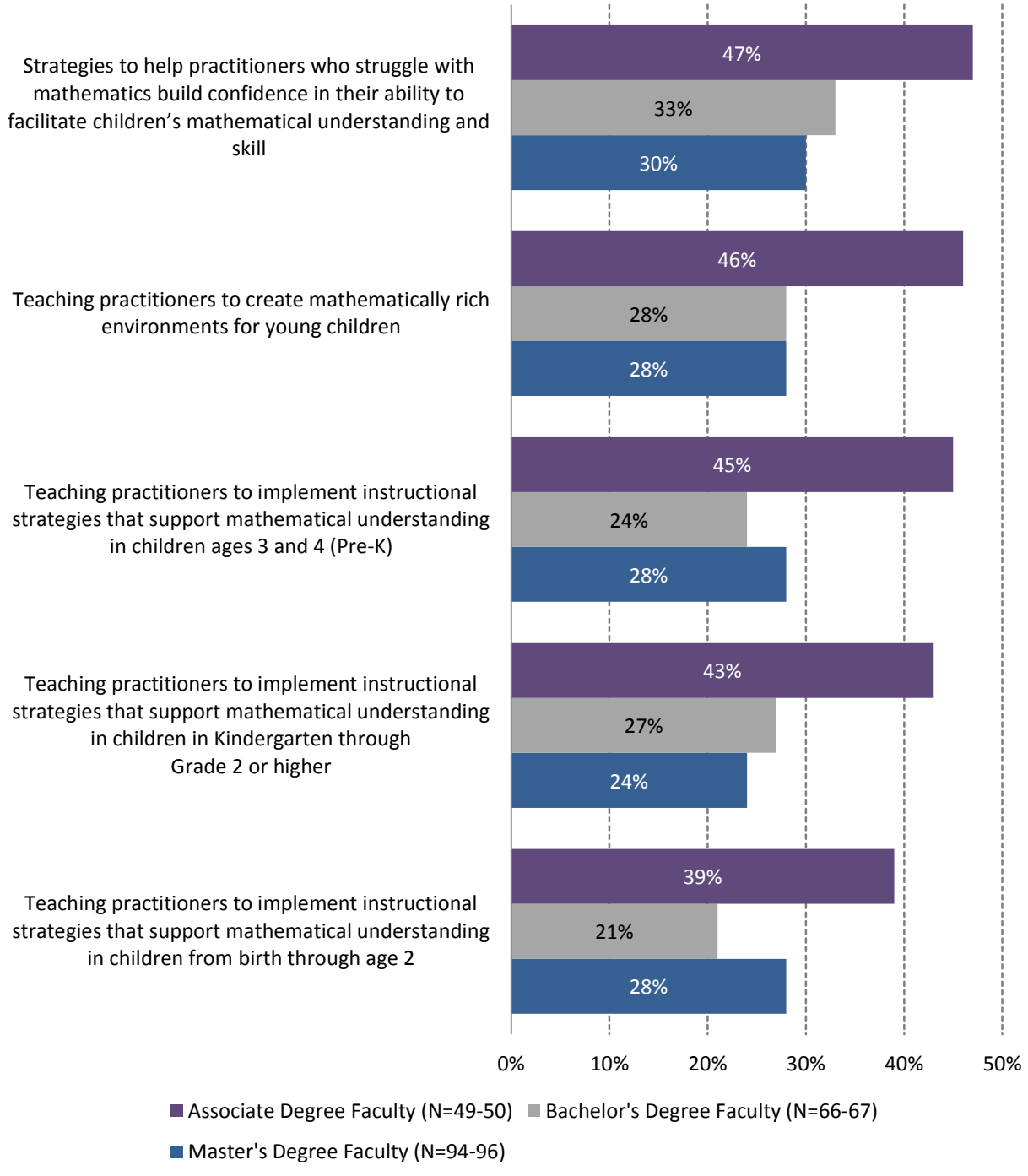


Figure 5.15: Level of Interest in Professional Development on Family Engagement, Reported by Faculty Participating in the New York Early Childhood Higher Education Inventory: Percentage Reporting "Very Interested," by Degree Program

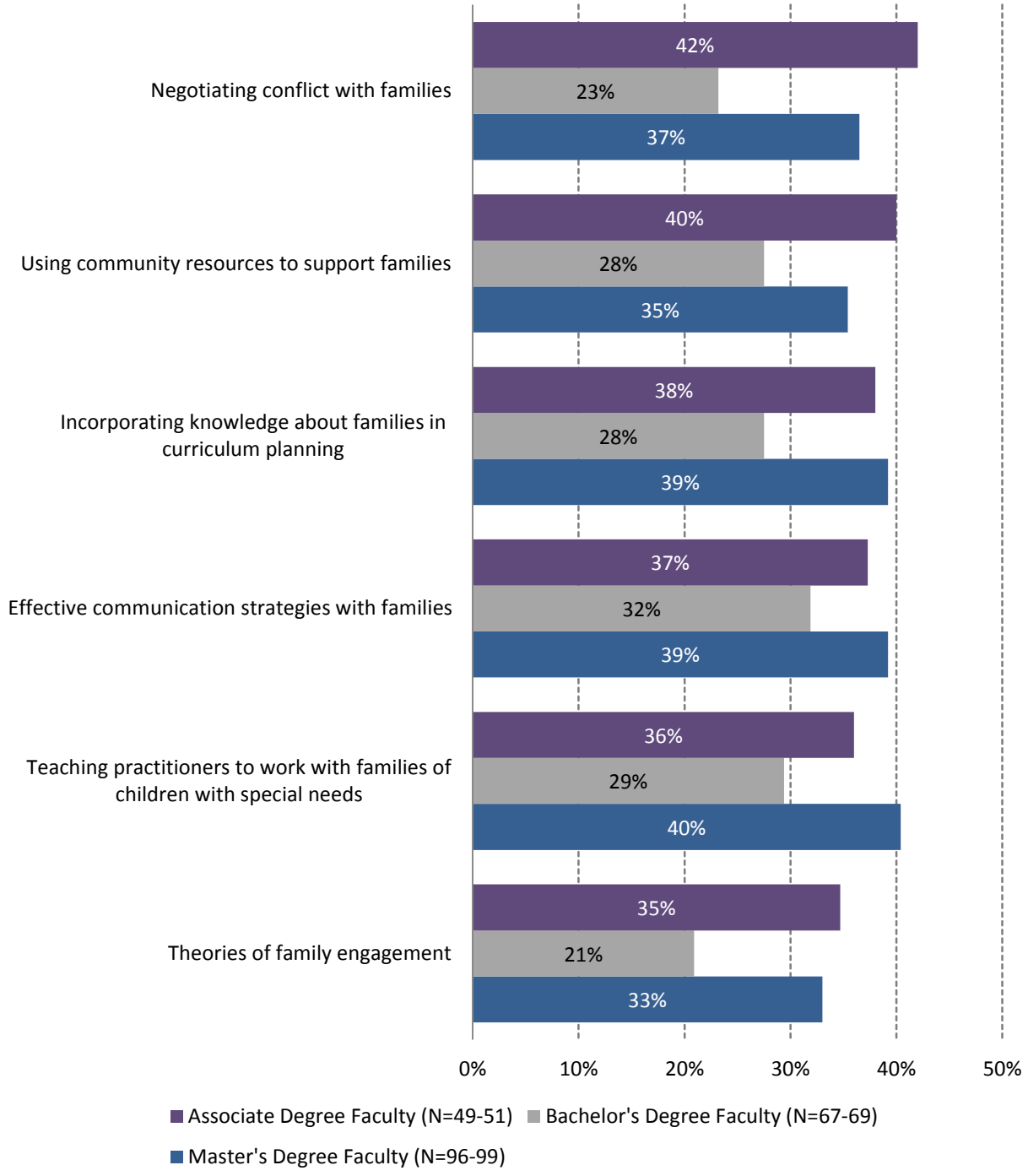
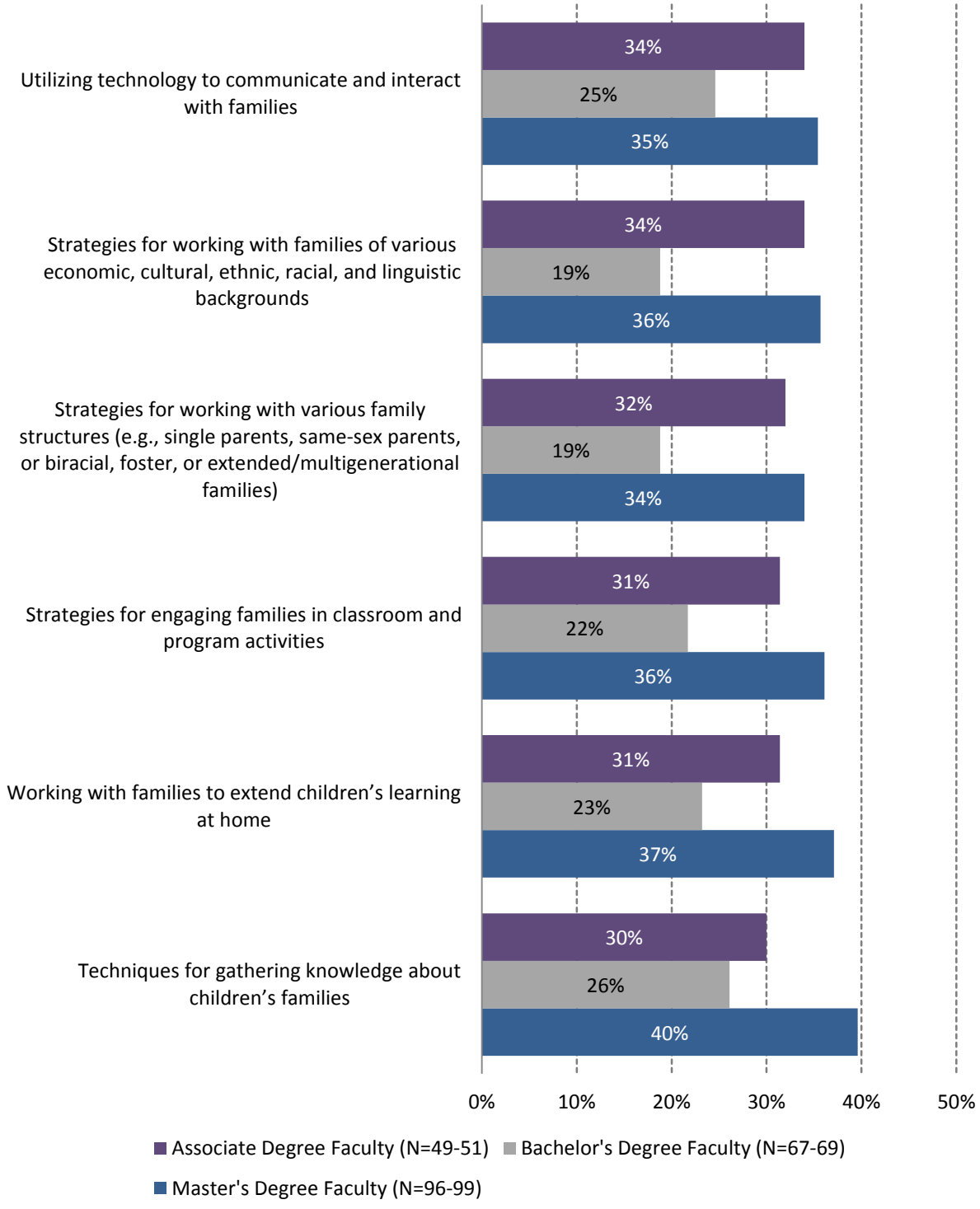


Figure 5.15: Level of Interest in Family Engagement Professional Development Reported by Faculty Participating in New York Early Childhood Higher Education Inventory: Percentage Reporting "Very Interested", by Degree Program (Continued)



APPENDIX

Appendix 1: Introduction

Table A1-1. Early Childhood Associate Degree Programs in New York

Name of Institution	Associate Degree Program(s)
CUNY: Borough of Manhattan Community College	A.S. Child Care/Early Childhood Education
CUNY: Hostos Community College	A.S. Liberal Arts: Electives in Teacher Education (Early Childhood concentration) A.A.S. Early Childhood Education
CUNY: Kingsborough Community College	A.S. Early Childhood/Childcare A.S. Educational Studies: Early Childhood Concentration
SUNY: Broome	A.S. Liberal Arts: General Studies Education (Birth – Grade 2 focus) A.A.S. Early Childhood
SUNY: Canton	A.S. Early Childhood Studies
SUNY: Cayuga Community College	A.S. Liberal Arts and Science: Early Childhood Concentration A.A.S. Early Childhood
SUNY: Cobleskill	A.S. Child and Family Services A.A.S. Early Childhood
SUNY: Corning Community College	A.A.S. in Early Childhood Studies
SUNY: Dutchess Community College	A.S. Early Childhood/Childhood (Dual Certification) A.A.S. in Early Childhood
SUNY: Empire State College	A.A. Early Childhood Studies A.A. Child Development A.S. Early Childhood Studies A.S. Child Development
SUNY: Erie Community College	A.A.S. Early Childhood
SUNY: Finger Lakes Community College	A.A. Early Childhood Education
SUNY: Fulton-Montgomery Community College	A.A.S. Early Childhood Education

Table A1-1. Early Childhood Associate Degree Programs in New York (Continued)

Name of Institution	Associate Degree Program(s)
SUNY: Genesee Community College	A.A. Teacher Education Transfer A.A.S. Teaching Assistant
SUNY: Herkimer	A.A.S. Early Childhood
SUNY: Hudson Valley Community College	A.A.S. Early Childhood
SUNY: Jamestown Community College	A.S. Early Childhood Education (Liberal Arts & Sciences) A.S. Human Services: Early Childhood Concentration A.A.S. Early Childhood
SUNY: Jefferson	A.A.S. Early Childhood
SUNY: Mohawk Valley Community College	A.S. Transfer: Liberal Arts and Sciences: Childhood Education (Birth – 6th grade)
SUNY: Monroe Community College	A.A. Liberal Arts and Sciences: Early Childhood Education (Teacher Education Transfer)
SUNY: Nassau Community College	A.A. Early Childhood Education A.S. Early Childhood Education
SUNY: Onondaga Community College	A.S. Human Services: Early Childhood Specialization
SUNY: Orange	A.A.S. Early Childhood Development and Care
SUNY: Rockland Community College	A.S. Liberal Arts and Sciences: Early Childhood Education (Transfer)
SUNY: Schenectady County Community College	A.S. Teacher Education Transfer A.A.S. Early Childhood
SUNY: Suffolk County Community College	A.S. Early Childhood Education A.A.S. Early Childhood Education
SUNY: Tompkins Cortland Community College	A.S. Liberal Arts and Science: Early Childhood Concentration A.A.S. Early Childhood Education
SUNY: Westchester Community College	A.A.S. Early Childhood

Table A1-2. Early Childhood Bachelor's and Graduate Degree Programs in New York

Name of Institution	Bachelor's Degree Program(s)	Graduate Degree Program(s)
Adelphi University		M.A. Early Childhood Education (Pre-certification) M.A. Early Childhood Education (In-service) M.S. Early Childhood Education (In-service single certification) M.S. Early Childhood Special Education (Pre-service dual certification)
Alfred University	B.S. Early Childhood/Childhood Education	
Bank Street College of Education		M.S. Education: Early Childhood General Education (Birth-Grade 2) M.S. Education: Early Childhood and Childhood General Education (Birth-Grade 6) M.S. Education: Early Childhood Special and General Education Dual Certification (Preschool to grade 2) M.S. Education: Early Childhood Special Education M.S. Education: Infant and Family Development and Early Intervention/Special Education (already certified in General Education) M.S. Education: Infant and Family Development and Early Intervention/Early Childhood Special and General Education (Initial Certification) M.S. Education: Curriculum and Instruction
Canisius College	B.A. Early Childhood/Childhood Dual Program B.A. Early Childhood Education	
Cazenovia College	B.S. Inclusive Early Childhood Education	
College of Mount St. Vincent	B.A. Early Childhood B.A. Double Certification: Early Childhood and Childhood	
College of New Rochelle		M.S. Education: Early Childhood Education (Birth-Grade 2)

		M.S. Early Childhood Special Education (already certified) M.S. Early Childhood Education and Early Childhood Special Education (Dual certification) M.S. Literacy Education (Birth-Grade 6) M.S. Literacy Education (Birth-Grade 12)
College of Saint Rose	B.S. Early Childhood Education B.S. Early Childhood Education and Special Education	M.S. Education: Early Childhood Education M.S. Education: Literacy (Birth-Grade 6) M.S. Education: Special Education (Birth-Grade 2)
Columbia University		M.A. Early Childhood Education M.A. Early Childhood Special Education M.A. Early Childhood Education/Early Childhood/Special Education (Dual certification) M.A. Education: Early Childhood Program: Early Childhood Policy Concentration M.A. Education: Early Childhood Program: Early Childhood Policy Concentration (Fewer credits than EDM) Ed.D. Early Childhood Program: Early Childhood Policy Concentration Ph.D. Early Childhood Program: Early Childhood Policy Concentration
Concordia College	B.A. Early Childhood	M.S. Education: Early Childhood Special Education M.S. Education: Early Childhood General/Special Education
CUNY: Brooklyn College	B.A. Early Childhood Education Teacher (Birth-Grade 2) B.A. Early Childhood Education Teacher/Special Education (Birth-Grade 2)	M.S. Education: Early Childhood Education Teacher Options A, B, and C: based upon teaching experience, previous course work, and teaching certificates student holds. M.S. Education: Special Education-Teachers of Students with Disabilities in Early Childhood Education (Option A) Options A and B: Students take different education courses and credit options depending on their previous course work, teaching experience, and

		certificates they hold.
CUNY: City College of New York	B.S. Early Childhood Education	M.S. Education: Early Childhood Education: Initial Certification M.S. Education: Early Childhood Education: Professional Certification M.S. Education: Early Childhood Education: Not for Certification
CUNY: College of Staten Island	B.A. Science, Letters, and Society: Early Childhood Education	
CUNY: Hunter College		M.S. Education: Early Childhood M.S. Education: Early Childhood with Bilingual Extension M.S. Education: Early Childhood Special Education M.S. Education: Early Childhood Special Education Annotation in Severe and Multiple Disabilities
CUNY: Lehman College	New early childhood degree programs in development	M.S. Education: Early Childhood Education M.S. Education: Early Childhood Education: Integration of Bilingual Education M.S. Early Childhood and Early Childhood Special Education – Dual Degree M.S. Early Childhood Special Education with a Bilingual Ext. M.S. Literacy (B-6) Early Childhood and Childhood M.S. Early Childhood Special Education M.S. Early Childhood Special Education Dual: Early Childhood General Education and Early Childhood Special Education and Bilingual Special Education
CUNY: Medgar Evers College	B.A. Early Childhood/Special Education	
CUNY: Queens College		M.A. Teaching: Early Childhood Education (Birth-Grade 2) M.S. Education: Early Childhood Education (Birth-Grade 2) M.S. Education: Special Education (Birth-Grade 2) M.S. Education: Literacy Education (Birth-Grade 6)
Daemen College	B.S. Early Childhood Education/Special Education (Birth-Grade 2)	M.S. Early Childhood Education/Special Education (Birth-Grade 2)

Dominican College of Blauvelt	B.A. Early Childhood/Childhood Teacher Certification Program B.S. Early Childhood/Childhood Teacher Certification Program	
Dowling College	B.A. Early Childhood Education	M.S. Literacy Education (Birth-Grade 6) M.S. Childhood (with Early Childhood additional certification as a pathway)
Fordham University		M.S. Teaching in Early Childhood Education M.S. Teaching in Early Childhood and Childhood Education M.S. Teaching in Early Childhood and Early Childhood Special Education M.S. Education in Early Childhood Special Education
Hofstra University	B.A. Early Childhood Education and Childhood Education (Dual certification) B.A. Early Childhood Education	M.A. Early Childhood Education M.A. Special Education: Focus in Early Childhood M.S. Education: Early Childhood Education M.S. Education: Dual Early Childhood and Childhood Education M.S. Education: Special Education Early Childhood Intervention M.S. Education: Early Childhood Special Education M.S. Education: Early Childhood Inclusive Special Education M.S. Education: Special Education (Early Childhood) and Literacy Studies (Birth-Grade 6)
Iona College	B.S. Early Childhood/Childhood Education Dual Certification (Birth-Grade 6)	M.S. Teaching: Early Childhood and Childhood (Birth-Grade 6) M.S. Education: Literacy (Birth-Grade 6)
Keuka College	B.S. Unified Early Childhood/Special Education	M.S. Literacy (Birth-Grade 6)
Le Moyne College		M.S. Education II: Literacy Education (Birth-Grade 6)
Long Island University: Brentwood		M.S. Early Childhood Education M.S. Childhood Education/Literacy (Birth-Grade 2) M.S. Education: Literacy (Birth-Grade 6) M.S. Dual Degree in Early Childhood Education and Childhood Education
Long Island University:		M.S. Education: Childhood/Early Childhood Urban Education

Brooklyn		M.S. Education: Early Childhood (Birth-Grade 2)
Long Island University: Hudson		M.S. Education: Early Childhood and Childhood Education M.S. Education: Early Childhood and Early Childhood Special Education M.S. Education: Early Childhood and Literacy
Long Island University: Post	B.S. Early Childhood Education (Birth – Grade 2)	M.S. Early Childhood Education (Birth-Grade 2) M.S. Literacy (Birth-Grade 6)
Long Island University: Riverhead		M.S. Literacy Education (Birth-Grade 6)
Manhattanville College	B.A. Early Childhood Education (Birth-Grade 2) B.A. Childhood Education and Early Childhood Education (Grades 1-6 and Birth-Grade 2)	M.A. Teaching: Early Childhood Education (Birth-Grade 2) M.A. Teaching: Early Childhood (Birth-Grade 2) and Childhood Education (Grades 1-6) Master's of Professional Studies: Special Education: Early Childhood (Birth-Grade 2) Master's of Professional Studies: Special Education: Early Childhood and Childhood Master's of Professional Studies: Literacy Specialist (Birth-Grade 6) Master's of Professional Studies: Early Childhood and Special Education: Early Childhood Master's of Professional Studies: Literacy (Birth-Grade 6) and Special Education (Grades 1-6)
Medaille College	B.S. Early Childhood/Childhood Education (five concentrations with ECE)	M.S. Education: Literacy (Birth-Grade 12)
Mercy College	B.S. Psychology or Behavioral Sciences (concentration in early childhood)	M.S. Early Childhood Education M.S. Early Childhood Education and Childhood Education M.S. Early Childhood Education/Childhood/Special Education B.S./M.S. in Psychology or Behavioral Sciences (concentration in early childhood)
Molloy College	B.S. Early Childhood and Childhood Education	M.S. Early Childhood and Childhood Education M.S. Teaching of English to Speakers of

		Other Language (TESOL) (Pre K-Grade 12)
Nazareth College	B.A. Inclusive Early Childhood/Childhood Education (four certification options) B.S. Inclusive Early Childhood/Childhood Education (four certification options)	M.S. Education: Inclusive Early Childhood Education (Birth-Grade 2) M.S. Education: Inclusive Early Childhood Education: Students with Disabilities (Birth-Grade 2) M.S. Literacy Education (Birth-Grade 6)
Niagara University	B.A. Early Childhood and Childhood Education B.A. Early Childhood Development and Cognition	M.S. Education: Early Childhood Education and Special Education
Nyack College	B.S. Early Childhood Education B.S. Early Childhood Education and Childhood Education	
NYU Steinhardt	B.S. Early Childhood Education and Special Education	M.A. Early Childhood Education M.A. Students with Disabilities (Birth-Grade 2) Ph.D. Early Childhood and Childhood Education
Pace University		M.S. Teaching: Early Childhood Development, Learning, and Intervention M.S. Education: Literacy Specialist (Early Childhood Concentration)
Roberts Wesleyan College	B.S. Early Childhood/Students with Disabilities & Special Education	
Sarah Lawrence College		M.S. Education: Early Childhood Education M.S. Education: Dual Degree in Early Childhood/Childhood Education
St. Bonaventure University	B.S. Elementary/Early Childhood Education	M.S. Education: Childhood Literacy (Birth-Grade 6)
St. John's University		M.S. Education: Early Childhood Education M.S. Education: Early Childhood Education and Teaching Students with Disabilities (Birth-Grade 2)
St. Joseph's College	B.A. Child Study	M.A. Infant/Toddler Early Childhood Special Education M.A. Literacy and Cognition (Birth-Grade 6) M.A. Special Education: Severe Disabilities (Birth-Grade 12)
St. Thomas Aquinas College		M.S. Education: Early Childhood and Childhood Literacy (Birth-Grade 6)
SUNY: Binghamton		M.S. Education: Childhood, Early Childhood, and Literacy (Birth-Grade 6)

University		M.S. Education: Childhood, Early Childhood and Special Education (Birth-Grade 6) M.S. Education: Literacy Education (Birth-Grade 6)
SUNY: Buffalo State	B.S. Early Childhood and Childhood (Birth-Grade 6) B.S. Early Childhood Education (Birth-Grade 2)	M.S. Education: Childhood and Early Childhood Curriculum and Instruction M.S. Education: Childhood and Early Childhood Education M.S. Education: Literacy Specialist (Birth-Grade 12) M.S. Education: Special Education: Early Childhood Program Ph.D. Curriculum, Instruction, and Science of Learning: Early Childhood Education Concentration
SUNY: Cobleskill	B.S. Early Childhood	
SUNY: Cortland	B.S. Early Childhood and Childhood Education (Birth-Grade 6) B.S. Early Childhood Education (Birth-Grade 2)	
SUNY: Empire State College ***These are the most common degrees. Students also create their own degrees or concentrations.***	B.A. Early Childhood Studies B.A. Child Care Management B.A. Child Development B.S. Early Childhood Studies B.S. Child Care Management B.S. Child Development	
SUNY: Fredonia	B.S. Education: Early Childhood Education (Birth-Grade 2) B.S. Education: Early Childhood/Childhood Education	
SUNY: Geneseo	B.S. Early Childhood and Child Education	M.A. Education: Early Childhood Education M.A. Education: Reading & Literacy (Birth-Grade 12)
SUNY: New Paltz	B.S. Early Childhood and Childhood Education (Birth-Grade 6)	M.S. Literacy Education (Birth-Grade 6) M.S. Second Language Education (PK-12) M.S. Education: Childhood Education: Early Childhood Concentration M.S. Special Education: Early Childhood Special Education (Birth-Grade 2)
SUNY: Oneonta	B.S. Early Childhood/Childhood	M.S. Education: Literacy Education

	Education (dual certification)	(Birth-Grade 6) M.S. Education: Special Education: Early Childhood Education
SUNY: Oswego		M.S. Literacy (Birth-Grade 6)
SUNY: Potsdam	B.A. Childhood/Early Childhood Education (Birth-Grade 6)	M.S. Education: Literacy Specialist: Early Childhood and Childhood Education (Birth-Grade 6) M.S. Education: Special Education: Early Childhood Special Education (Birth-Grade 2)
SUNY: University at Albany		M.S. Early Childhood Education M.S. Literacy (Birth-Grade 6) or (Grades 5-12) or (Birth-Grade 12) M.S. Special Education (Grades 1-6)/Literacy (Birth-Grade 6)
SUNY: University at Buffalo		M.A. Education: Early Childhood (Birth-Grade 2) M.A. Education: Early Childhood/ Childhood Education (Birth-Grade 6)
Syracuse University	B.S. Inclusive Early Childhood Special Education	M.S. Early Childhood Special Education
The Sage Colleges		M.S. Education: Literacy Education (Birth-Grade 6)
Touro College and University System		M.S. Early Childhood Education and Special Education
University of Rochester		M.S. Early Childhood (Non-teacher Certification) M.S. Early Childhood Education (Initial Certification) M.S. Early Childhood Education (Current Teachers) M.S. Professional Study: Generalist (Early Childhood) and Early Childhood/ Childhood Urban Training and Leadership M.S. Inclusion Early Childhood Education M.S. Reading & Literacy (Birth-Grade 6)
Wagner College		M.S. Education: Early Childhood Education/Special Education
Yeshiva University	B.A. Early Childhood Education (Birth-Grade 2)	

Appendix 2: Early Childhood Higher Education Programs: Detailed Tables

Table A2-1. Required Coursework Related to Child Development and Learning: Age-Group Focus, by Degree Program

Age Group	Associate Degree	Bachelor's Degree	Master's Degree
Knowledge about children's development in different domains (e.g., language development, cognitive development)			
Birth to two years	93%	96%	92%
3 and/or 4 years (Pre-K)	96%	92%	94%
K-grade 2 or higher	82%	92%	98%
N	*27*	*25*	*51*
Development of children's early literacy skills			
Birth to two years	92%	100%	83%
3 and/or 4 years (Pre-K)	96%	92%	94%
K-grade 2 or higher	81%	92%	98%
N	*26*	*24*	*52*
Development of children's scientific understandings			
Birth to two years	80%	68%	77%
3 and/or 4 years (Pre-K)	96%	82%	93%
K-grade 2 or higher	72%	91%	98%
N	*25*	*22*	*43*
Development of dual language learners			
Birth to two years	77%	76%	82%
3 and/or 4 years (Pre-K)	94%	81%	89%
K-grade 2 or higher	71%	91%	98%
N	*17*	*21*	*45*
Understanding the effects of culture, gender, class, and race on child development			
Birth to two years	96%	96%	90%
3 and/or 4 years (Pre-K)	96%	92%	94%
K-grade 2 or higher	85%	92%	98%
N	*26*	*24*	*51*
Child development theory and its relationship to teaching			
Birth to two years	96%	96%	90%
3 and/or 4 years (Pre-K)	96%	92%	92%
K-grade 2 or higher	82%	92%	96%
N	*27*	*24*	*49*

Table A2-1. Required Coursework Related to Child Development and Learning: Age-Group Focus, by Degree Program (Continued)

Age Group	Associate Degree	Bachelor's Degree	Master's Degree
Understanding the effects of disability on child development			
Birth to two years	93%	87%	90%
3 and/or 4 years (Pre-K)	96%	83%	94%
K-grade 2 or higher	78%	91%	98%
N	*27*	*23*	*49*

Table A2-2: Required Coursework Related to Teaching Diverse Child Populations: Age-Group Focus, by Degree Program

Age Group	Associate Degree	Bachelor's Degree	Master's Degree
Teaching children who are experiencing poverty			
Birth to two years	91%	87%	92%
3 and/or 4 years (Pre-K)	95%	91%	94%
K-grade 2 or higher	76%	91%	96%
N	*21*	*23*	*48*
Teaching children with challenging behaviors			
Birth to two years	85%	87%	74%
3 and/or 4 years (Pre-K)	96%	91%	89%
K-grade 2 or higher	77%	91%	96%
N	*26*	*23*	*46*
Teaching children with special needs			
Birth to two years	85%	86%	90%
3 and/or 4 years (Pre-K)	96%	82%	94%
K-grade 2 or higher	78%	96%	98%
N	*27*	*22*	*51*
Teaching children from multiple cultural and ethnic backgrounds			
Birth to two years	93%	86%	90%
3 and/or 4 years (Pre-K)	96%	82%	92%
K-grade 2 or higher	85%	96%	96 %
N	*27*	*22*	*51*
Teaching children who are dual language learners			
Birth to two years	77%	94%	85%
3 and/or 4 years (Pre-K)	94%	89%	96%
K-grade 2 or higher	77%	94%	98%
N	*17*	*18*	*47*

Table A2-3: Required Coursework Related to Teaching and Curriculum: Age-Group Focus, by Degree Program

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
Teaching science skills to children			
Birth to two years	68%	64%	65%
3 and/or 4 years (Pre-K)	96%	77%	90%
K-grade 2 or higher	68%	91%	95%
N	*22*	*22*	*40*
Teaching math skills to children			
Birth to two years	67%	61%	65%
3 and/or 4 years (Pre-K)	96%	78%	88%
K-grade 2 or higher	71%	91%	98%
N	*24*	*23*	*43*
Teaching literacy skills to children			
Birth to two years	80%	71%	83%
3 and/or 4 years (Pre-K)	96%	83%	94%
K-grade 2 or higher	72%	92%	98%
N	*25*	*24*	*52*
Teaching art to children			
Birth to two years	82%	70%	87%
3 and/or 4 years (Pre-K)	96%	80%	100%
K-grade 2 or higher	64%	80%	97%
N	*22*	*20*	*31*
Teaching social studies to children			
Birth to two years	67%	65%	66%
3 and/or 4 years (Pre-K)	95%	74%	88%
K-grade 2 or higher	62%	91%	98%
N	*21*	*23*	*41*
Using play in the curriculum			
Birth to two years	85%	79%	91%
3 and/or 4 years (Pre-K)	96%	83%	96%
K-grade 2 or higher	74%	88%	94%
N	*27*	*24*	*46*
Supporting and extending children's physical skills			
Birth to two years	89%	80%	92%
3 and/or 4 years (Pre-K)	96%	85%	94%
K-grade 2 or higher	73%	70%	92%
N	*26*	*20*	*36*

Table A2-3: Required Coursework Related to Teaching and Curriculum: Age-Group Focus, by Degree Program (Continued)

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
Supporting children's social development			
Birth to two years	85%	79%	89%
3 and/or 4 years (Pre-K)	96%	83%	92%
K-grade 2 or higher	74%	92%	96%
N	*27*	*24*	*47*
Implementing integrated curriculum			
Birth to two years	82%	71%	81%
3 and/or 4 years (Pre-K)	96%	83%	96%
K-grade 2 or higher	74%	92%	98%
N	*27*	*24*	*48*

Table A2-4: Required Coursework Related to Teaching Skills in Early Childhood Settings: Age-Group Focus, by Degree Program

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
Observation, assessment, and documentation to inform teaching and learning			
Birth to two years	78%	88%	87%
3 and/or 4 years (Pre-K)	100%	79%	90%
K-grade 2 or higher	67%	88%	98%
N	*27*	*24*	*52*
Classroom management			
Birth to two years	78%	79%	76%
3 and/or 4 years (Pre-K)	100%	88%	87%
K-grade 2 or higher	63%	92%	94%
N	*27*	*24*	*46*
How to use different teaching techniques			
Birth to two years	77%	83%	80%
3 and/or 4 years (Pre-K)	100%	88%	90%
K-grade 2 or higher	69%	92%	98%
N	*26*	*24*	*51*

Appendix 3: Early Childhood Higher Education Faculty: Detailed Tables

Table A3-1: Coursework Taught Related to Child Development and Learning: Age-Group Focus, by Degree Program

If topic taught in past two years, age-group focus of the coursework:

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Knowledge about children's development in different domains (e.g., language development, cognitive development)			
Birth to 2 years	90%	80%	79%
3 to 4 years	92%	84%	87%
K-2 or above	68%	82%	88%
N	*60*	*73*	*101*
Development of children's early literacy skills			
Birth to 2 years	90%	76%	75%
3 to 4 years	91%	85%	87%
K-2 or above	67%	78%	82%
N	*57*	*67*	*87*
Development of children's scientific understandings			
Birth to 2 years	73%	53%	60%
3 to 4 years	96%	80%	80%
K-2 or above	67%	80%	77%
N	*45*	*49*	*60*
Development of dual language learners			
Birth to 2 years	79%	65%	70%
3 to 4 years	96%	84%	76%
K-2 or above	61%	77%	79%
N	*28*	*43*	*63*
Understanding the effects of culture, gender, class, and race on child development			
Birth to 2 years	83%	77%	79%
3 to 4 years	92%	84%	87%
K-2 or above	71%	84%	90%
N	*59*	*70*	*93*
Child development theory and its relationship to teaching			
Birth to 2 years	88%	78%	79%
3 to 4 years	93%	82%	88%
K-2 or above	70%	83%	90%
N	*59*	*71*	*96*

Table A3-1: Coursework Taught Related to Child Development and Learning: Age-Group Focus, by Degree Program (Continued)

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Understanding the effects of disability on child development			
Birth to 2 years	84%	79%	78%
3 to 4 years	96%	89%	86%
K-2 or above	73%	87%	90%
N	*45*	*61*	*90*

Table A3-2: Coursework Taught Related to Teaching Diverse Child Populations: Age-Group Focus, by Degree Program

If topic taught in past two years, age-group focus of the coursework:

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Teaching children who are experiencing poverty			
Birth to 2 years	83%	74%	76%
3 to 4 years	87%	83%	88%
K-2 or above	75%	90%	89%
N	*52*	*70*	*96*
Teaching children with challenging behaviors			
Birth to 2 years	79%	70%	69%
3 to 4 years	84%	84%	89%
K-2 or above	65%	88%	89%
N	*57*	*67*	*93*
Teaching children with special needs			
Birth to 2 years	77%	75%	75%
3 to 4 years	83%	85%	89%
K-2 or above	69%	87%	90%
N	*48*	*60*	*96*
Teaching children from diverse cultural and ethnic backgrounds			
Birth to 2 years	84%	78%	73%
3 to 4 years	86%	89%	90%
K-2 or above	70%	91%	90%
N	*56*	*63*	*101*

Table A3-2: Coursework Taught Related to Teaching Diverse Child Populations: Age-Group Focus, by Degree Program (Continued)

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Teaching children who are dual language learners			
Birth to 2 years	91%	72%	65%
3 to 4 years	88%	90%	89%
K-2 or above	56%	86%	84%
N	*32*	*50*	*81*

Table A3-3: Coursework Taught Related to Teaching and Curriculum: Age-Group Focus, by Degree Program

If topic taught in past two years, age-group focus of the coursework:

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Teaching science skills to children			
Birth to 2 years	76%	44%	55%
3 to 4 years	96%	82%	75%
K-2 or above	67%	77%	81%
N	*46*	*39*	*47*
Teaching math skills to children			
Birth to 2 years	77%	50%	57%
3 to 4 years	92%	75%	70%
K-2 or above	67%	75%	77%
N	*48*	*44*	*53*
Teaching literacy skills to children			
Birth to 2 years	85%	67%	71%
3 to 4 years	91%	80%	79%
K-2 or above	70%	75%	85%
N	*53*	*60*	*79*
Teaching art to children			
Birth to 2 years	83%	63%	75%
3 to 4 years	94%	81%	77%
K-2 or above	62%	68%	79%
N	*47*	*41*	*48*

Table A3-3: Coursework Taught Related to Teaching and Curriculum: Age-Group Focus, by Degree Program (Continued)

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Teaching social studies to children			
Birth to 2 years	75%	50%	53%
3 to 4 years	89%	79%	78%
K-2 or above	70%	86%	85%
N	*47*	*42*	*58*
Using play in the curriculum			
Birth to 2 years	88%	75%	79%
3 to 4 years	93%	86%	90%
K-2 or above	75%	82%	87%
N	*59*	*65*	*86*
Supporting and extending children's physical skills			
Birth to 2 years	90%	72%	82%
3 to 4 years	94%	83%	88%
K-2 or above	64%	78%	89%
N	*52*	*54*	*66*
Supporting children's social development			
Birth to 2 years	89%	75%	80%
3 to 4 years	92%	83%	86%
K-2 or above	77%	82%	86%
N	*61*	*71*	*91*
Implementing integrated curriculum			
Birth to 2 years	77%	69%	71%
3 to 4 years	91%	84%	82%
K-2 or above	73%	89%	89%
N	*56*	*62*	*91*
Implementing researched-based curriculum (e.g. High-Scope, Creative Curriculum)			
Birth to 2 years	79%	67%	69%
3 to 4 years	95%	86%	83%
K-2 or above	69%	73%	81%
N	*42*	*51*	*70*

Table A3-4: Coursework Taught Related to Teaching Skills in Early Childhood Settings: Age-Group Focus, by Degree Program

If topic taught in past two years, age-group focus of the coursework:

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Observation, assessment, and documentation to inform teaching and learning			
Birth to 2 years	86%	67%	70%
3 to 4 years	93%	86%	84%
K-2 or above	68%	85%	90%
N	*59*	*72*	*103*
Classroom management			
Birth to 2 years	84%	66%	66%
3 to 4 years	91%	84%	81%
K-2 or above	68%	89%	90%
N	*56*	*64*	*93*
How to use different teaching techniques (e.g., planning, instructing, facilitating)			
Birth to 2 years	86%	64%	67%
3 to 4 years	95%	89%	86%
K-2 or above	69%	88%	90%
N	*55*	*66*	*98*

Table A3-5: Professional Development Experiences in Last Three Years, by Degree Program

If participated in any professional development, topic of experience:

Topic of Professional Development	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Diverse Child Population			
Teaching practitioners to work with children from diverse cultural backgrounds	44%	57%	61%
Teaching practitioners to work with children who are dual language learners	15%	33%	43%
Teaching practitioners to work with children with special needs	25%	49%	61%
N	*48*	*61*	*73*
Adult Learners			
Strategies and techniques for mentoring/coaching of adult students	48%	23%	28%
Strategies to supervise adult students in clinical/field experiences	25%	30%	29%
Strategies to provide quality academic/career advising to adult students	33%	13%	15%
Using technology to promote adult learning	52%	34%	34%
Teaching adult students who are English language learners	10%	10%	14%
Teaching culturally and ethnically diverse college students	35%	21%	27%
Teaching economically diverse college students	29%	13%	21%
N	*48*	*61*	*85*
Teaching Skills and Assessment			
Teaching practitioners to use technology with children	30%	47%	43%
Child assessment (e.g., portfolios, using particular assessment tools such as the Work Sampling System)	52%	47%	57%
Early childhood program assessment (e.g., Environment Rating Scale)	33%	26%	31%
Early childhood teacher assessment (e.g., CLASS)	17%	16%	22%
Teaching practitioners developmentally appropriate practice in infant and toddler settings	33%	24%	30%
N	*46*	*62*	*83*
Administration and Leadership			
Early childhood systems and policy	37%	23%	27%
Organizational development	22%	8%	15%
Theories of leadership	30%	19%	20%
N	*46*	*62*	*85*

Table A3-6: Professional Development Experiences Related to Early Mathematical Development in Last Three Years, by Degree Program

If participated in any professional development, topic of experience:

Topic of Professional Development	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Teaching practitioners to create mathematically rich environments for young children	81%	67%	72%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children from birth through age 2	19%	29%	45%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children ages 3 and 4 (Pre-K)	52%	57%	48%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children in Kindergarten through grade 2 or higher	29%	71%	72%
Strategies to help practitioners who struggle with mathematics build confidence in their ability to facilitate children's mathematical understanding and skill	29%	52%	38%
N	*21*	*21*	*29*

Table A3-7: Professional Development Experiences Related to Family Engagement in Last Three Years, by Degree Program

If participated in any professional development, topic of experience:

Topic of Professional Development	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Theories of family engagement	46%	23%	29%
Strategies for working with various family structures (e.g. single-parent, same-sex parents, biracial, foster, extended/multigenerational families)	42%	29%	24%
Strategies for working with families of various economic, cultural, ethnic, racial, and linguistic backgrounds	67%	52%	64%
Working with families to extend children's learning at home	46%	45%	47%
Strategies for engaging families in classroom and program activities	50%	55%	47%
Teaching practitioners to work with families of children with special needs	50%	48%	49%
N	*24*	*31*	*55*

Table A3-8: Professional Development Topics that Would Be Helpful, by Degree Program

Topic of Professional Development	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Diverse Child Populations			
Teaching practitioners to work with children from diverse cultural backgrounds	39%	40%	42%
Teaching practitioners to work with children who are dual language learners	49%	61%	68%
Teaching practitioners to work with children with special needs	55%	40%	37%
N	*51*	*67*	*97*
Adult Learners			
Strategies and techniques for mentoring/coaching of adult students	31%	18%	32%
Strategies to supervise adult students in clinical/field experiences	18%	18%	31%
Strategies to provide quality academic/career advising to adult students	12%	18%	18%
Using technology to promote adult learning	39%	30%	35%
Teaching adult students who are English language learners	35%	25%	35%
Teaching culturally and ethnically diverse college students	29%	22%	27%
Teaching economically diverse college students	28%	24%	28%
N	*51*	*67*	*97*
Teaching Skills and Assessment			
Teaching practitioners to use technology with children	41%	42%	47%
Child assessment (e.g., portfolios, using particular assessment tools such as the Work Sampling System)	37%	37%	27%
Early childhood program assessment (e.g., Environment Rating Scale)	26%	28%	25%
Early childhood teacher assessment (e.g., CLASS)	45%	40%	26%
Teaching practitioners developmentally appropriate practice in infant and toddler settings	33%	37%	31%
N	*51*	*67*	*97*
Administration and Leadership			
Early childhood systems and policy	39%	37%	35%
Organizational development	31%	24%	29%
Theories of leadership	29%	27%	30%
N	*51*	*67*	*97*

Appendix 4: Challenges Facing Early Childhood Degree Programs, and Additional Resources Needed: Family Engagement and Early Math

Table A4-1: Challenges Facing New York Early Childhood Degree Programs: Lack of Resources, by Degree Program

Challenges	Associate Degree	Bachelor's Degree	Master's Degree
Inequitable distribution of resources compared to other programs in the institution	0%	21%	26%
Faculty administrative responsibilities that interfere with time with students (e.g., lack of time for teaching, advising)	30%	43%	58%
Lack of recognition of the value of early childhood from within the department or school	15%	14%	26%
Lack of articulation between 2-year and 4-year college early childhood degree programs	45%	7%	7%
Insufficient ability to recruit students	45%	71%	36%
Insufficient number of full-time faculty	25%	36%	42%
Insufficient number of part-time faculty	0%	14%	0%
Insufficient resources to offer enough courses/sections to meet student needs	5%	7%	13%
Insufficient access to quality field experience sites	40%	36%	32%
Insufficient course content focused on children younger than five	0%	21%	23%
Insufficient ability to support students to complete the program (e.g., basic skills support, tutoring)	20%	29%	13%
Insufficient academic support for students for whom English is a second language	20%	29%	19%
N	*20*	*14*	*31*

Table A4-2: Challenges Facing New York Early Childhood Degree Programs: Faculty Expertise, by Degree Program

Challenges	Associate Degree	Bachelor's Degree	Master's Degree
Need for additional faculty expertise in teaching infants and toddlers	46%	46%	50%
Need for additional faculty expertise in teaching preschool-age children	0%	46%	23%
Need for additional faculty expertise in math pedagogy for young children	39%	64%	41%
Need for additional faculty expertise in science pedagogy for young children	39%	73%	36%
Need for additional faculty expertise in promoting literacy in young children	23%	36%	5%
Need for additional faculty expertise in the social/emotional development of young children	0%	36%	14%
Need for additional faculty expertise in teaching young children who are dual language learners	77%	82%	32%
Need for additional faculty expertise in teaching young children with special needs	69%	36%	23%
Need for additional faculty expertise in working with diverse populations of young children	15%	27%	14%
Need for additional faculty expertise in working with diverse populations of college students	8%	55%	14%
Need for additional faculty expertise in working with and engaging diverse populations of families	23%	27%	9%
Need for additional faculty expertise in teaching infants and toddlers	46%	46%	50%
N	*13*	*11*	*22*

Appendix 5: Family Engagement and Early Mathematics

Table A5-1: Importance of Including Selected Topics in Early Childhood Higher Education Programs: Percentages of Faculty Members Reporting "Very Important," by Age Group and Degree Program

Topic	Birth to 2 years	3 and/or 4 years	K-grade 2 or higher
Associate Degree Faculty (N=66-67)			
Understanding the domains and sequences of mathematical knowledge in young children and how to promote their mathematical understanding and ability to solve problems	32%	66%	84%
Understanding the components and sequences of literacy development in young children and how to promote their skills related to oral and written language	73%	79%	90%
Understanding socio-emotional development and its relationship to learning, and how to support children's socio-emotional skills	88%	93%	94%
Understanding normal and atypical motor development in young children and its relationship to learning, and how to foster motor skill development	78%	75%	64%
Understanding and implementing an integrated strategy to engage families in ongoing and reciprocal partnerships, and the relationship of such partnerships to outcomes for children	85%	87%	81%
Bachelor's Degree Faculty (N=77)			
Understanding the domains and sequences of mathematical knowledge in young children and how to promote their mathematical understanding and ability to solve problems	31%	57%	91%
Understanding the components and sequences of literacy development in young children and how to promote their skills related to oral and written language	62%	86%	96%
Understanding socio-emotional development and its relationship to learning, and how to	81%	94%	94%

support children's socio-emotional skills			

Table A5-1: Importance of Including Selected Topics in Early Childhood Higher Education Programs: Percentages of Faculty Members Reporting "Very Important," by Age Group and Degree Program (Continued)

Topic	Birth to 2 years	3 and/or 4 years	K-grade 2 or higher
Bachelor's Degree Faculty (continued)			
Understanding normal and atypical motor development in young children and its relationship to learning, and how to foster motor skill development	78%	77%	61%
Understanding and implementing an integrated strategy to engage families in ongoing and reciprocal partnerships, and the relationship of such partnerships to outcomes for children	86%	87%	83%
Master's Degree Faculty (N=119-121)			
Understanding the domains and sequences of mathematical knowledge in young children, and how to promote their mathematical understanding and ability to solve problems	24%	59%	88%
Understanding the components and sequences of literacy development in young children and how to promote their skills related to oral and written language	57%	82%	95%
Understanding socio-emotional development and its relationship to learning, and how to support children's socio-emotional skills	90%	91%	91%
Understanding normal and atypical motor development in young children and its relationship to learning, and how to foster motor skill development	77%	71%	55%
Understanding and implementing an integrated strategy to engage families in ongoing and reciprocal partnerships, and the relationship of such partnerships to outcomes for children	88%	87%	81%

Table A5-2: Family Engagement: Age-Group Focus, by Degree Program

If topic required for the degree program, age-group focus of the coursework:

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
Theories of family engagement			
Birth to two years	91%	87%	86%
3 and/or 4 years (Pre-K)	95%	83%	91%
K-grade 3 or higher	71%	87%	98%
N	*21*	*23*	*43*
Working with various family structures			
Birth to two years	92%	86%	86%
3 and/or 4 years (Pre-K)	92%	81%	91%
K-grade 3 or higher	71%	91%	100%
N	*24*	*21*	*43*
Working with families of children with special needs			
Birth to two years	88%	85%	87%
3 and/or 4 years (Pre-K)	92%	75%	92%
K-grade 3 or higher	71%	98%	98%
N	*24*	*20*	*47*
Working with families of various ethnic, racial, and linguistic backgrounds			
Birth to two years	92%	81%	90%
3 and/or 4 years (Pre-K)	92%	76%	92%
K-grade 3 or higher	76%	95%	96%
N	*25*	*21*	*49*
Engaging families in classroom, program and/or school activities			
Birth to two years	92%	77%	83%
3 and/or 4 years (Pre-K)	92%	82%	91%
K-grade 3 or higher	75%	91%	98%
N	*24*	*22*	*46*
Effective communication strategies with families			
Birth to two years	92%	82%	90%
3 and/or 4 years (Pre-K)	92%	82%	92%
K-grade 3 or higher	75%	91%	98%
N	*24*	*22*	*48*
Utilizing technology to communicate with families			
Birth to two years	88%	79%	85%
3 and/or 4 years (Pre-K)	94%	84%	91%
K-grade 3 or higher	77%	90%	97%
N	*17*	*19*	*33*

Table A5-2: Family Engagement: Age-Group Focus, by Degree Program (Continued)

If topic required for the degree program, age-group focus of the coursework:

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
Working with families to help them enhance their children's learning at home			
Birth to two years	90%	81%	87%
3 and/or 4 years (Pre-K)	95%	86%	87%
K-grade 3 or higher	79%	91%	94%
N	*19*	*21*	*46*
Using knowledge about children's families in curriculum planning			
Birth to two years	86%	82%	84%
3 and/or 4 years (Pre-K)	95%	86%	93%
K-grade 3 or higher	76%	91%	98%
N	*21*	*22*	*45*
Negotiating conflicts and differences between families and teachers			
Birth to two years	90%	90%	88%
3 and/or 4 years (Pre-K)	95%	84%	93%
K-grade 3 or higher	68%	90%	98%
N	*19*	*19*	*41*
Building community partnerships			
Birth to two years	90%	85%	83%
3 and/or 4 years (Pre-K)	90%	85%	93%
K-grade 3 or higher	74%	95%	98%
N	*19*	*20*	*40*
Child referrals to community resources			
Birth to two years	94%	90%	90%
3 and/or 4 years (Pre-K)	94%	80%	92%
K-grade 3 or higher	72%	90%	97%
N	*18*	*20*	*39*
Utilizing community resources			
Birth to two years	94%	86%	88%
3 and/or 4 years (Pre-K)	94%	81%	93%
K-grade 3 or higher	69%	91%	100%
N	*16*	*21*	*40*

Table A5-3: Teaching Math Skills to Children: Age-Group Focus, by Degree Level

If topic required for the degree program, age-group focus of the coursework:

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
Number sense for children			
Birth to two years	70%	55%	69%
3 and/or 4 years (Pre-K)	96%	73%	91%
K-grade 2 or higher	70%	96%	100%
N	*23*	*22*	*35*
Operations and algebraic thinking for children			
Birth to two years	48%	55%	40%
3 and/or 4 years (Pre-K)	91%	68%	77%
K-grade 2 or higher	67%	96%	100%
N	*21*	*22*	*35*
Measurement skills for children			
Birth to two years	65%	55%	40%
3 and/or 4 years (Pre-K)	96%	77%	94%
K-grade 2 or higher	70%	96%	100%
N	*23*	*22*	*35*
Geometry skills for children			
Birth to two years	68%	55%	44%
3 and/or 4 years (Pre-K)	91%	73%	85%
K-grade 2 or higher	68%	96%	100%
N	*22*	*22*	*34*
Children's mathematical reasoning/practices			
Birth to two years	65%	59%	51%
3 and/or 4 years (Pre-K)	96%	77%	83%
K-grade 2 or higher	70%	96%	97%
N	*23*	*22*	*35*

Table A5-4: Development of Children's Mathematical Understanding: Age-Group Focus, by Degree Level

If topic required for the degree program, age-group focus of the coursework:

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
Building on children's natural interest in mathematics and their intuitive and informal mathematical knowledge			
Birth to two years	74%	68%	73%
3 and/or 4 years (Pre-K)	91%	77%	92%
K-grade 2 or higher	61%	96%	97%
N	*23*	*22*	*37*
Encouraging children's inquiry and exploration to foster problem solving and mathematical reasoning			
Birth to two years	78%	68%	70%
3 and/or 4 years (Pre-K)	91%	77%	92%
K-grade 2 or higher	61%	96%	97%
N	*23*	*22*	*37*
Using everyday activities as natural vehicles for developing children's mathematical knowledge			
Birth to two years	83%	64%	78%
3 and/or 4 years (Pre-K)	91%	77%	89%
K-grade 2 or higher	57%	96%	95%
N	*23*	*22*	*37*
Introducing explicit mathematical concepts through planned experiences			
Birth to two years	55%	55%	50%
3 and/or 4 years (Pre-K)	91%	73%	89%
K-grade 2 or higher	64%	96%	100%
N	*22*	*22*	*36*
Creating a mathematically rich environment			
Birth to two years	68%	64%	77%
3 and/or 4 years (Pre-K)	91%	77%	89%
K-grade 2 or higher	64%	96%	97%
N	*22*	*22*	*35*
Supporting English learners in developing mathematical knowledge as they concurrently acquire English			
Birth to two years	63%	65%	70%
3 and/or 4 years (Pre-K)	88%	70%	88%
K-grade 2 or higher	88%	95%	97%
N	*8*	*20*	*33*

Table A5-4: Development of Children's Mathematical Understanding: Age-Group Focus, by Degree Level (Continued)

Age-Group Focus	Associate Degree	Bachelor's Degree	Master's Degree
Developing children's mathematical vocabulary			
Birth to two years	62%	55%	62%
3 and/or 4 years (Pre-K)	91%	77%	92%
K-grade 2 or higher	62%	96%	97%
N	*21*	*22*	*39*
Assessing children's mathematical development			
Birth to two years	61%	55%	57%
3 and/or 4 years (Pre-K)	83%	73%	94%
K-grade 2 or higher	72%	96%	100%
N	*18*	*22*	*35*

Table A5-5: Capability of Teaching Coursework on Teaching Math Skills to Children, as Reported by Faculty Members, by Age Group and Degree Level

Early Math Topic	Birth - 2 years	3 - 4 years	K-grade 2 or higher
Associate Degree Faculty			
Number sense for children (N=65)	74%	83%	71%
Operations and algebraic thinking for children (N=64)	58%	75%	59%
Measurement skills for children (N=65)	69%	85%	69%
Geometry skills for children (N=65)	66%	83%	66%
Children's mathematical reasoning/ practices (N=65)	69%	82%	66%
Bachelor's Degree Faculty			
Number sense for children (N=75)	69%	75%	68%
Operations and algebraic thinking for children (N=73)	41%	62%	62%
Measurement skills for children (N=75)	55%	72%	67%
Geometry skills for children (N=75)	55%	65%	63%
Children's mathematical reasoning/ practices (N=75)	52%	73%	64%
Master's Degree Faculty			
Number sense for children (N=116)	54%	67%	65%
Operations and algebraic thinking for children (N=114)	18%	43%	61%
Measurement skills for children (N=115)	50%	65%	64%
Geometry skills for children (N=114)	51%	62%	59%
Children's mathematical reasoning/ practices (N=115)	50%	68%	63%

Table A5-6: Capability of Teaching Coursework on Development of Children's Mathematical Understanding, as Reported by Faculty Members, by Age Group and Degree Level

Early Math Topic	Birth - 2 years	3 - 4 years	K-grade 2 or higher
Associate Degree Faculty			
Building on children's natural interest in mathematics and their intuitive and informal mathematical knowledge (N=64)	81%	89%	66%
Encouraging children's inquiry and exploration to foster problem solving and mathematical reasoning (N=64)	78%	89%	67%
Using everyday activities as natural vehicles for developing mathematical knowledge (N=64)	83%	89%	69%
Introducing explicit mathematical concepts through planned experiences (N=63)	71%	81%	65%
Creating a mathematically rich environment (N=63)	78%	87%	71%
Supporting English learners in developing mathematical knowledge as they concurrently acquire English (N=62)	47%	53%	45%
Developing children's mathematical vocabulary (N=64)	72%	83%	67%
Assessing children's mathematical development (N=64)	67%	81%	61%
Bachelor's Degree Faculty			
Building on children's natural interest in mathematics and their intuitive and informal mathematical knowledge (N=74)	69%	78%	62%
Encouraging children's inquiry and exploration to foster problem solving and mathematical reasoning (N=74)	69%	76%	72%
Using everyday activities as natural vehicles for developing mathematical knowledge (N=74)	73%	77%	72%
Introducing explicit mathematical concepts through planned experiences (N=74)	57%	70%	65%
Creating a mathematically rich environment (N=74)	62%	73%	72%
Supporting English learners in developing mathematical knowledge as they concurrently acquire English (N=74)	32%	43%	45%

Table A5-6: Capability of Teaching Coursework on Development of Children's Mathematical Understanding, as Reported by Faculty Members, by Age Group and Degree Level (Continued)

Early Math Topic	Birth - 2 years	3 - 4 years	K-grade 2 or higher
Developing children's mathematical vocabulary (N=74)	61%	73%	69%
Assessing children's mathematical development (N=74)	51%	68%	58%
Master's Degree Faculty			
Building on children's natural interest in mathematics and their intuitive and informal mathematical knowledge (N=112)	60%	68%	66%
Encouraging children's inquiry and exploration to foster problem solving and mathematical reasoning (N=112)	58%	68%	70%
Using everyday activities as natural vehicles for developing mathematical knowledge (N=113)	61%	69%	72%
Introducing explicit mathematical concepts through planned experiences (N=113)	50%	64%	60%
Creating a mathematically rich environment (N=112)	54%	64%	61%
Supporting English learners in developing mathematical knowledge as they concurrently acquire English (N=112)	37%	46%	45%
Developing children's mathematical vocabulary (N=113)	54%	66%	66%
Assessing children's mathematical development (N=113)	48%	63%	59%

Table A5-7: Coursework Taught Related to Early Math Skills: Age-Group Focus

If topic taught in past two years, age-group focus of the coursework:

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Supporting English learners in developing mathematical knowledge as they concurrently acquire English			
Birth to 2 years	72%	33%	43%
3 to 4 years	92%	74%	70%
K-2 or above	72%	85%	81%
N	*25*	*27*	*37*
Assessing children's mathematical development			
Birth to 2 years	78%	45%	52%
3 to 4 years	97%	82%	86%
K-2 or above	61%	84%	91%
N	*36*	*38*	*42*
Introducing explicit mathematical concepts through planned experiences			
Birth to 2 years	68%	41%	41%
3 to 4 years	95%	80%	75%
K-2 or above	54%	85%	82%
N	*41*	*39*	*44*
Creating a mathematically rich environment			
Birth to 2 years	79%	46%	55%
3 to 4 years	98%	81%	79%
K-2 or above	64%	83%	83%
N	*42*	*41*	*47*
Developing children's mathematical vocabulary			
Birth to 2 years	77%	44%	48%
3 to 4 years	95%	84%	76%
K-2 or above	61%	81%	84%
N	*43*	*43*	*50*
Building on natural interest in mathematics and a child's intuitive and informal mathematical knowledge			
Birth to 2 years	76%	52%	61%
3 to 4 years	96%	84%	80%
K-2 or above	64%	80%	77%
N	*45*	*44*	*51*

Table A5-7: Coursework Taught Related to Early Math Skills: Age-Group Focus (Continued)

Topic	Associate Degree Faculty	Bachelor's Degree Faculty	Master's Degree Faculty
Encouraging children's inquiry and exploration to foster problem solving and mathematical reasoning			
Birth to 2 years	77%	49%	51%
3 to 4 years	98%	84%	78%
K-2 or above	64%	80%	80%
N	*44*	*45*	*51*
Using everyday activities as natural vehicles for developing children's mathematical knowledge			
Birth to 2 years	83%	54%	60%
3 to 4 years	91%	83%	76%
K-2 or above	63%	78%	79%
N	*46*	*46*	*58*

Table A5-8: Interest in Professional Development on Teaching Math Skills

Professional Development Topic	1 - Not interested	2	3	4	5 - Very interested	Total
Associate Degree Faculty						
Number sense (counting and cardinality) for children (N=49)	10%	12%	25%	22%	31%	100%
Measurement skills for children (N=49)	12%	6%	27%	27%	29%	100%
Geometry skills for children (N=49)	12%	10%	16%	27%	35%	100%
Operations and algebraic thinking for children (N=50)	10%	10%	22%	24%	34%	100%
Children's mathematical reasoning (N=49)	6%	8%	22%	29%	35%	100%
Assessing children's mathematical understanding (N=49)	4%	6%	27%	25%	39%	100%
Integrating mathematical understanding and skills in all aspects of curriculum (N=50)	6%	6%	20%	32%	36%	100%
Creating a mathematically rich learning environment (N=50)	8%	8%	16%	28%	40%	100%
Integrating mathematical understanding into children's daily activities (N=48)	10%	8%	19%	25%	38%	100%
Bachelor's Degree Faculty						
Number sense (counting and cardinality) for children (N=66)	15%	24%	21%	18%	21%	100%
Measurement skills for children (N=66)	14%	21%	23%	20%	23%	100%
Geometry skills for children (N=66)	12%	23%	20%	23%	23%	100%
Operations and algebraic thinking for children (N=67)	13%	21%	21%	19%	25%	100%
Children's mathematical reasoning (N=66)	12%	17%	21%	24%	26%	100%
Assessing children's mathematical understanding (N=66)	12%	17%	20%	18%	33%	100%
Integrating mathematical understanding and skills in all aspects of curriculum (N=67)	10%	16%	18%	21%	34%	100%
Creating a mathematically rich learning environment (N=67)	10%	21%	16%	21%	31%	100%
Integrating mathematical understanding into children's daily activities (N=66)	12%	21%	17%	20%	30%	100%

Table A5-8: Interest in Professional Development on Teaching Math Skills (Continued)

Professional Development Topic	1 - Not interested	2	3	4	5 - Very interested	Total
Master's Degree Faculty						
Number sense (counting and cardinality) for children (N=96)	19%	24%	21%	15%	22%	100%
Measurement skills for children (N=96)	17%	24%	21%	13%	26%	100%
Geometry skills for children (N=95)	12%	23%	20%	18%	24%	100%
Operations and algebraic thinking for children (N=96)	16%	22%	23%	16%	24%	100%
Children's mathematical reasoning (N=95)	14%	20%	22%	16%	28%	100%
Assessing children's mathematical understanding (N=95)	12%	17%	26%	16%	28%	100%
Integrating mathematical understanding and skills in all aspects of curriculum (N=96)	13%	19%	18%	21%	30%	100%
Creating a mathematically rich learning environment (N=96)	13%	16%	21%	19%	32%	100%
Integrating mathematical understanding into children's daily activities (N=96)	14%	18%	20%	17%	32%	100%

Table A5-9: Interest in Professional Development on Mathematical Understanding

Professional Development Topic	1 - Not interested	2	3	4	5 - Very interested	Total
Associate Degree Faculty (N=49-50)						
Teaching practitioners to create mathematically rich environments for young children	6%	6%	18%	24%	46%	100%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children from birth through age 2	4%	14%	20%	22%	39%	100%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children ages 3 and 4 (Pre-K)	4%	8%	18%	25%	45%	100%

Table A5-9: Interest in Professional Development on Mathematical Understanding (Continued)

Professional Development Topic	1 - Not interested	2	3	4	5 - Very interested	Total
Teaching practitioners to implement instructional strategies that support mathematical understanding in children in Kindergarten through grade 2 or higher	8%	4%	22%	22%	43%	100%
Strategies to help practitioners who struggle with mathematics build confidence in their ability to facilitate children's mathematical understanding and skill	4%	4%	12%	33%	47%	100%
Bachelor's Degree Faculty (N=66-67)						
Teaching practitioners to create mathematically rich environments for young children	9%	19%	22%	21%	28%	100%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children from birth through age 2	9%	23%	27%	20%	21%	100%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children ages 3 and 4 (Pre-K)	9%	17%	26%	24%	24%	100%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children in Kindergarten through grade 2 or higher	9%	15%	27%	21%	27%	100%
Strategies to help practitioners who struggle with mathematics build confidence in their ability to facilitate children's mathematical understanding and skill	6%	12%	24%	24%	33%	100%
Master's Degree Faculty						
Teaching practitioners to create mathematically rich environments for young children	13%	17%	19%	23%	28%	100%

Table A5-9: Interest in Professional Development on Mathematical Understanding (Continued)

Professional Development Topic	1 - Not interested	2	3	4	5 - Very interested	Total
Teaching practitioners to implement instructional strategies that support mathematical understanding in children from birth through age 2	13%	21%	22%	16%	28%	100%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children ages 3 and 4 (Pre-K)	14%	14%	21%	24%	28%	100%
Teaching practitioners to implement instructional strategies that support mathematical understanding in children in Kindergarten through grade 2 or higher	15%	14%	26%	21%	24%	100%
Strategies to help practitioners who struggle with mathematics build confidence in their ability to facilitate children's mathematical understanding and skill	13%	11%	22%	25%	30%	100%

Table A5-10: Interest in Professional Development on Family Engagement

Professional Development Topic	1 - Not interested	2	3	4	5 - Very interested	Total
Associate Degree Faculty						
Theories of family engagement (N=49)	6%	8%	10%	41%	35%	100%
Strategies for working with various family structures (e.g. single parent, same sex parents, biracial, foster, extended/ multigenerational families) (N=50)	6%	10%	12%	40%	32%	100%
Strategies for working with families of various economic, cultural, ethnic, racial, and linguistic backgrounds (N=50)	4%	10%	14%	38%	34%	100%

Table A5-10: Interest in Professional Development on Family Engagement (Continued)

Professional Development Topic	1 - Not interested	2	3	4	5 - Very interested	Total
Working with families to extend children's learning at home (N=51)	4%	6%	8%	51%	31%	100%
Strategies for engaging families in classroom and program activities (N=51)	4%	8%	14%	43%	31%	100%
Teaching practitioners to work with families of children with special needs (N=50)	6%	8%	10%	40%	36%	100%
Negotiating conflict with families (N=50)	4%	8%	14%	32%	42%	100%
Effective communication strategies with families (N=51)	6%	8%	18%	31%	37%	100%
Techniques for gathering knowledge about children's families (N=50)	4%	6%	26%	34%	30%	100%
Using community resources to support families (N=50)	4%	8%	12%	36%	40%	100%
Incorporating knowledge about families in curriculum planning (N=50)	4%	6%	16%	36%	38%	100%
Utilizing technology to communicate and interact with families (N=50)	2%	8%	24%	32%	34%	100%
Bachelor's Degree Faculty						
Theories of family engagement (N=67)	5%	12%	22%	40%	21%	100%
Strategies for working with various family structures (e.g., single parent, same sex parents, biracial, foster, extended/ multigenerational families) (N=69)	4%	10%	23%	44%	19%	100%
Strategies for working with families of various economic, cultural, ethnic, racial, and linguistic backgrounds (N=69)	4%	9%	26%	42%	19%	100%
Working with families to extend children's learning at home (N=69)	3%	10%	20%	44%	23%	100%

Table A5-10: Interest in Professional Development on Family Engagement (Continued)

Professional Development Topic	1 - Not interested	2	3	4	5 - Very interested	Total
Strategies for engaging families in classroom and program activities (N=69)	3%	10%	25%	41%	22%	100%
Teaching practitioners to work with families of children with special needs (N=68)	4%	10%	21%	35%	29%	100%
Negotiating conflict with families (N=69)	6%	12%	25%	35%	23%	100%
Effective communication strategies with families (N=69)	3%	10%	25%	30%	32%	100%
Techniques for gathering knowledge about children's families (N=69)	3%	10%	29%	32%	26%	100%
Using community resources to support families (N=69)	4%	10%	25%	33%	28%	100%
Incorporating knowledge about families in curriculum planning (N=69)	3%	12%	25%	33%	28%	100%
Utilizing technology to communicate and interact with families (N=69)	1%	9%	28%	38%	25%	100%
Master's Degree Faculty						
Theories of family engagement (N=97)	9%	13%	21%	24%	33%	100%
Strategies for working with various family structures (e.g., single parent, same sex parents, biracial, foster, extended/ multigenerational families) (N=97)	7%	12%	21%	26%	34%	100%
Strategies for working with families of various economic, cultural, ethnic, racial, and linguistic backgrounds (N=98)	7%	10%	20%	27%	36%	100%
Working with families to extend children's learning at home (N=97)	8%	10%	24%	21%	37%	100%
Strategies for engaging families in classroom and program activities (N=97)	7%	13%	26%	18%	36%	100%

Table A5-10: Interest in Professional Development on Family Engagement (Continued)

Professional Development Topic	1 - Not interested	2	3	4	5 - Very interested	Total
Teaching practitioners to work with families of children with special needs (N=99)	7%	11%	21%	20%	40%	100%
Negotiating conflict with families (N=96)	12%	14%	18%	21%	37%	100%
Effective communication strategies with families (N=97)	7%	11%	27%	16%	39%	100%
Techniques for gathering knowledge about children's families (N=96)	8%	13%	24%	16%	40%	100%
Using community resources to support families (N-96)	8%	15%	21%	21%	35%	100%
Incorporating knowledge about families in curriculum planning (N=97)	8%	13%	25%	14%	39%	100%
Utilizing technology to communicate and interact with families (N=96)	7%	10%	27%	20%	35%	100%

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