NAGC Framing Paper

Universal Educator Preparation in Gifted Education

National Association for Gifted Children

CONTRIBUTING AUTHORS:

Cindy M. Gilson, Shelagh Gallagher, Thomas W. Connors, Nielsen Pereira, Laytora O. Dash, & Catherine A. Little

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Introduction

Gifted students nationwide spend much of their school day in general education classrooms. Yet, current teacher preparation requirements in most states do not include a course on gifted education, leaving the majority of classroom teachers limited in their knowledge of how to understand gifted students' characteristics, address their learning needs, or accurately discern which students would benefit from more specialized gifted education programming (Farkas & Duffett, 2008; Ford et al., 2001; Rinn et al., 2022). Inattention to this component of educator preparation undoubtedly contributes to lackluster achievement among many gifted and advanced students (Rambo-Hernandez et al., 2021; Xiang et al., 2011), a pervasive Excellence Gap among high-ability students from different demographic groups (Plucker et al., 2010; Wyner et al., 2007), and inadequate program options for all advanced students nationwide (Tyner, 2024). Today, even teachers in specialized settings such as within-classroom cluster groups, pull-out programs, or self-contained classrooms are undereducated with respect to the needs of advanced students. Recently Tyner (2024) found that in 69% of 490 school districts with advance programs, fewer than 25% of teachers had an endorsement or credential in gifted or advanced education, and more than 50% of the districts did not require most teachers to engage in professional learning related to advanced education every two years.

The National Association for Gifted Children believes all educators should learn about the nature and needs of gifted students, beginning in preservice preparation and continuing in subsequent in-service learning, to improve advanced learning across the United States.

Building Tiers of Educator Expertise

In other specialized areas of education, educator preparation is comprised of opportunities for increasingly deep study, beginning with a foundations course at the undergraduate level. This undergraduate course presents core concepts and introduces classroom strategies; it often awakens a desire for future study. After graduation, interested educators can pursue additional knowledge and acquire a specialist license or endorsement; these can form the foundation for a master's degree or doctorate. Educators at all levels augment their knowledge throughout their careers with additional in-service learning to stay current with evolving trends in the field. This ladder of increasing expertise has many benefits:

1. General education teachers have enough information to adapt learning experiences for students in the regular classroom when time allows.
2. General education teachers can recognize when additional assistance from a specialist is warranted.
3. General education and specialist teachers share a common understanding of why some students need extra services and the varied options for delivering those services.
4. Specialist teachers acquire the additional knowledge needed to ensure students' time spent with them is both appropriate and qualitatively different from general classroom instruction.
5. All teachers remain current in their knowledge.

Gifted education is one of the few specialty areas with no required foundational course in preservice education to serve as the bottom rung of a professional learning ladder, and with limited requirements for in-service hours post-graduation at the top. The absence of these requirements for educator preparation has multiple adverse consequences for gifted students—and for many students who are not formally identified—including the perpetuation of misconceptions regarding the characteristics and needs of students with advanced ability, inadequate differentiation for advanced learning, and underidentification and inadequate access to services for students from traditionally marginalized groups.

Universal educator preparation in gifted education will fill a critical gap in educator expertise, benefitting gifted students and their classmates (Farkas & Duffett, 2008; Institute for Educational Advancement [IEA], 2018; Novak & Lewis, 2023; Şahin, 2021; World Council for Gifted and Talented Children [WCGTC], 2021).

Universal educator preparation refers to formal coursework and subsequent in-service professional learning for all educators, grounded in evidence-based information, about the factual, conceptual, and procedural knowledge and attitudes

requisite to effectively address and advocate for the comprehensive needs of students with advanced abilities from all backgrounds.

Professionals who will benefit from universal educator preparation in gifted education include preservice or resident teacher candidates (e.g., general education, special education, English language teaching) at the undergraduate or graduate level, as well as those studying to become school administrators, counselors, school psychologists, social workers, specialist teachers (e.g., art, music, health), and specialized instructional support personnel (collectively hereafter, educators).

Why All Educators Need to Know About Gifted Students' Educational Needs

The prevalence of advanced students in general education classrooms

Practitioners and researchers in general and gifted education have long understood the importance of meeting individual needs and accommodating learners in heterogeneous settings (Tomlinson, 2017; Tomlinson & McTighe, 2006; VanTassel-Baska & Brown, 2007). Highlighting the extent of cognitive heterogeneity in the general education classroom, Firmender et al. (2013) examined the reading achievement of 1,149 elementary-aged students. They discovered students' performance ranged from below the 10th to above the 90th percentiles. Peters et al. (2017) conducted a similar analysis using a broad sample of student achievement data, and they estimated that the percentage of above-grade-level learners nationally in elementary and middle school ranged from 14%-37% in mathematics and 20%-49% in language arts. This academic variability, in practical terms, means teachers must regularly try to address the needs of students well below, at, and well above grade level.

When combined with the reality that remediation frequently takes precedence over acceleration or advanced learning in many schools (Peters et al., 2017), it is reasonable to conclude that the needs of a substantial proportion of students in the general education classroom regularly go unaddressed. The absence of attention to advanced learning is not because teachers do not care, it is because they are not prepared. This situation can be remedied by requiring universal preparation in gifted education to develop general education teachers' skills and self-efficacy for implementing advanced learning practices that are evidence-based, inclusive, culturally relevant, and designed to respond to students with advanced abilities (Brevik et al., 2018; Ford et al., 2020; Whitley et al., 2019).

The need for knowledgeable administrators and specialized instructional support personnel

Capable administrative support is necessary to ensure that gifted students receive comprehensive services and programming. Administrators are the gatekeepers for school programs, deciding which are valuable and which are not. They also evaluate school programs and thus must know the criteria that indicate high quality. In the absence of information about gifted education, many administrators may inadvertently neglect gifted students and programs as they contend with the realities of diminishing budgets and pressure to ensure student proficiency on standardized testing. In doing so, they unintentionally deny advanced students the opportunity to learn. Some evidence suggests that there can be dramatic differences in access to gifted education services from one side of a school district to another (Siegle et al., 2016). Even administrators who support gifted education need a base of knowledge to hire appropriate staff and conduct effective program evaluations. The absence of universal administrator preparation in gifted education may be one reason why, after surveying nearly 500 school districts across the nation, Tyner (2024) concluded that "advanced programming in most elementary and middle schools is limited and of questionable value" (p. 17).

Similarly, counselors and other specialized instructional support personnel may misinterpret or misdiagnose sources of underachievement or nonachievement among gifted students. Of particular concern are students who are twice exceptional, having both advanced ability and learning challenges. Without a foundation of information, support personnel may fail to encourage strengths while addressing challenges. All students, including gifted students, deserve acceptance, understanding, and, when needed, appropriate and helpful correction. A course in gifted education for all educators could help make strides in gifted students' feelings of acceptance in school.

The pervasive underidentification of culturally, linguistically, and economically diverse (CLED) gifted students

The students who stand to lose most from this deficit in professional learning are gifted children of color, gifted students in poverty, and gifted students who are multilingual learners of English. Administrators and teachers sometimes operate from a deficit mindset regarding culturally, linguistically, and economically diverse (CLED) students, overlooking students with advanced abilities (Ford et al., 2001; Hattie, 2023; Ottwein & Mun, 2023). Without appropriate preparation, some administrators deny these students an appropriate education and ironically perpetuate the ideology that gifted students cannot be found in CLED populations, in part because those students are not provided opportunities to achieve (Danielian, 2021; Ottwein & Mun, 2023). For all these reasons, it is imperative that administrators also take coursework and engage in continuous professional learning in gifted education.

Benefits of Teacher Preparation in Gifted Education for Programming and Classroom Practice

Improved understanding of effective advanced learning practices

Universal preparation in gifted education will ensure all educators working with gifted and advanced students are aware of practices based solidly on research and sound theory. A primary example of a research-based practice that positively affects gifted students is academic acceleration (Lubinski, 2016; Steenbergen-Hu et al., 2016), which occurs in many formats and has a wealth of empirical support (Assouline et al., 2015; Rogers, 2004; Steenbergen-Hu & Moon, 2011). Despite a robust evidence base, many schools and parents resist acceleration due to a limited understanding of its benefits and pervasive misconceptions regarding possible psychological and social harm. Across two longitudinal studies, Bernstein et al. (2021) reported that concerns that children suffer socially or psychologically when accelerated were unfounded, as long as decisions were made on a case-by-case basis, by trained personnel. Increased educator preparation would strengthen understanding of acceleration and other evidence-based practices.

Higher level learning for many students

Differentiation practices are important for both general education teachers and gifted education specialists to master. A particularly important learning objective for teachers is to distinguish between differentiation that is appropriate for all students (e.g., choice in learning process or product, hands-on learning), and differentiation that is best reserved for gifted students and other students who are ready for additional challenge (e.g., adding challenge through increased depth, complexity, or abstractness). Evidence suggests that differentiation practices that add rigor to lessons and allow groups of gifted students to work together can have broad, positive impacts, especially when implemented within broader school reform efforts (Deunk et al., 2018). Among the benefits are increased academic success for all students (Bal, 2016; Puzio et al., 2020), enhanced support for gifted students (Steenbergen-Hu et al., 2016; Ziernwald et al., 2022), and increased student engagement. Research findings suggest that many students improve relative to their prior achievement when advanced curriculum is used in the regular classroom (Casa et al., 2016; Gallagher, 2017; Little et al., 2007). Prioritizing culturally responsive materials and practices also strengthens gifted students' learning experiences, ensuring that all students see themselves and one another reflected in the curriculum (Santamaria, 2009; Scott, 2014). However, regular classroom differentiation is rare, especially for students who need increased challenge, and positive results are dependent on teacher preparation (Ziernwald et al., 2022).

Ample evidence suggests that when general education teachers learn about gifted education curriculum planning, methods developing academic strengths, and increasing cultural competency through enrichment and inquiry, student agency and goal valuation increase (Brigandi et al., 2016; Goings & Ford, 2018; Renzulli & Reis, 2021; Santamaria, 2009). Specifically, planning to foster intellectual strengths and developing talent may lead to learning across domains as students engage creatively and demonstrate progress in motivation and task commitment (Reis & Peters, 2021; Subotnik et al., 2012, 2020). Further, enhanced preparation helps educators understand that fidelity to the program, curriculum, and instructional models is an essential element in ensuring learning gains, reinforcing the need for ongoing professional learning (Little et al., 2007; Maker, 2006; Moon & Park, 2016; VanTassel-Baska & Wood, 2010).

The demonstrated effectiveness of evidence-based practices in gifted education, including acceleration,

inquiry-based learning, lesson differentiation, and enrichment experiences (Bernstein et al., 2021; Buerk, 2021; Reis & Peters, 2021; Tomlinson et al., 2003), combined with the lack of consistent implementation and evaluation of such practices across all schools, reinforces the need for universal preparation that helps educators advocate for and serve gifted learners. All students can benefit from having teachers with high expectations and increased capacity to design learning experiences that can develop students' strengths, abilities, and talents (Hattie, 2012, 2023). In other words, "a rising tide lifts all ships" (Renzulli, 1998, p. 105).

Why All Educators Should Learn the Process of Identifying Gifted Students, From Referral to Selection

Prevalent misconceptions about gifted and advanced students

Universal educator preparation in gifted education is imperative to dispel myths about gifted students and to prepare teachers, administrators, and support personnel to advocate for best practice in equitable referral and identification practices. The lack of any coursework in gifted education can perpetuate biases and misconceptions about gifted students (Ford et al., 2023; Ottwein, 2020), including the myths that they are all "A" students, that they are all well-behaved and well-spoken, or that they will achieve at levels that match their potential even without academic intervention. All educators need to understand that some gifted students do not fit into the stereotypical model of well-behaved high achievers. In fact, when bored, some gifted students may misbehave or go off-task (Lavrijsen & Verschueren, 2020; Neumeister et al., 2007; Renzulli, 1999). Dispelling these myths is important, because general educators are often responsible for referring candidates for gifted identification programs (Rinn et al., 2022), and school teams composed of a diverse array of school and district personnel beyond gifted education participate in final decisions regarding which students will receive more intensive gifted education services.

The issue of bias in identification is particularly urgent with regards to equitable access to advanced programs. According to the National Center for Education Statistics (NCES, 2021), of the 49.4 million students in school in the fall of 2020, minoritized groups combined represented a larger percentage of the student population than White students (approximately 55% versus 46%). However, issues of underrepresentation of students from racially and ethnically diverse populations, low-income backgrounds, and those receiving special education services or classified as multilingual learners in gifted programs are pervasive in U.S. schools (Gentry et al., 2019; Peters et al., 2019). Educators' perceptions of giftedness can have an outsized impact on the equitable representation of CLED, female, impoverished, and LGBTQ+ students.

Part of this identification gap is because many general education teachers have not learned how giftedness might manifest differently in diverse populations. Evidence suggests that teachers without background knowledge are particularly likely to mischaracterize the behaviors of gifted CLED students; however, Swanson et al. (2022) found that professional learning for teachers in Title 1 schools helped to shift their "perceptions of CLED students from at-risk to at-potential" (p. 260). This finding is supported by other research indicating that when teachers learn about the traits, aptitudes, and behaviors typically associated with giftedness, they become better at referring and identifying gifted students from traditionally underrepresented groups (Hunsaker et al., 1997; Gallagher & Gallagher, 2013).

Universal educator preparation is also necessary to better inform educators about the intersections between giftedness and other forms of exceptionality. Many educators, including those in special education, are unaware that students can have both a disability and be identified as gifted (Chen et al., 2023). Bianco and Leech (2010) found that special education teachers are less inclined to refer students with disabilities for gifted programs than gifted and general education teachers.

Improving referral to and selection for advanced services

Identification practices vary widely nationwide, yet most involve teachers at some point, making universal educator preparation an avenue for systemic improved practice. Recent evidence demonstrates substantial differences between teachers in their use of rating scales as part of an identification process, suggesting that a student's classroom placement matters more to their referral for gifted services than their individual characteristics. Moreover, analysis of teacher rating scales suggest teachers are not always capable of distinguishing which students have advanced cognitive ability (McCoach et al., 2023). Universal preparation in gifted education would dramatically increase the pool of educators prepared to recognize student potential and to advocate for equitable identification measures at the school or district levels.

The Need for Universal Educator Preparation on the Social, Emotional, and Psychosocial Development of Gifted Students and Supportive Learning Environments

Establishing a welcoming learning environment is a proactive way to support students' social, emotional, and psychological development. Gifted students should ideally experience positive relationships with their teachers and peers within intentionally supportive and culturally responsive learning environments (Fugate et al., 2021; Gay, 2000; Gilson & Lee, 2023; Hattie, 2023; Ladson-Billings, 2014; Lee et al., 2021; Meyer & Rinn, 2021).

All stakeholders working with gifted students, including school counselors and social workers, will benefit from appropriate professional learning on research-based information related to gifted students' social, emotional, and psychosocial development. Although more research is needed, some evidence exists that gifted students can experience some social, emotional, and psychosocial development issues more frequently than others or have unique social and emotional needs (Rinn, 2024). However, many myths and misconceptions about gifted students are related to social, emotional, and psychosocial factors (Moon, 2019), which may directly affect their academic experiences and intellectual growth (Matthews, 2004).

School counselors and social workers require preparation in gifted education because they need to be prepared to proactively and reactively address the issues that may occur in some gifted students, such as underachievement (Fong et al., 2023) and perfectionism (Ogurlu, 2020). This is particularly important for some of the special populations of gifted students, such as multiexceptional students or highly gifted students, whom teachers may also perceive as being vulnerable to social and psychological challenges (Matheis et al., 2018; Preckel et al., 2015). It is also essential for educators to engage in learning that disrupts the mistaken belief that students with advanced ability are more often found in White, male, or affluent populations (Ottwein, 2020). Professional learning has the potential to help address some of these misconceptions and prepare educators to meet the needs of these students.

Universal preparation in gifted education is necessary to help all educators understand the importance of equity and intersectionality of voices, cultures, and language for all gifted students. Coupled with professional learning experiences and antiracist work in culturally responsive practices, universal preparation provides greater assurance of promoting more positive learning environments that benefit teachers and students (Brown, 2017; Lee et al., 2021). While more research is needed, infusing culturally responsive pedagogy in gifted education has the potential to help educators build student self-efficacy and motivation for learning, meaningful teacher-student relationships, student-centered learning spaces that are safe, and a culture of understanding for students' lived experiences (Banks, 1993; Gay, 2000; Lee et al., 2021). Universal educator preparation in gifted education should result in stronger administrative support and positive relationships between teachers and their gifted and advanced students.

Universal Preparation in Gifted Education as a Foundation for Tiered Program Services

Universal educator preparation in gifted education entails a comprehensive system of educator preparation, from preservice coursework to options for postgraduate study, to required continued in-service learning. This comprehensive preparation system supports a multitiered program for advanced students, including regular classroom differentiation for many students, pull-out or cluster grouping for some advanced students, and self-contained services for others.

Professional learning about gifted education should be intentionally and meaningfully included within all contexts and settings for professional preparation based on educators' differentiated needs—from general education teachers to specialists and support personnel working with gifted students in specialized settings to administrators (WCGTC, 2021). In this way, universal preparation in gifted education forms the foundation of tiered student program services that begin at the classroom level and expand out to a broader program level. For example, general education teachers may be able to meet many above-average students' needs through curriculum differentiation, enrichment, and within class acceleration. A single course in the needs of gifted and advanced students, with subsequent in-service learning experiences, would prepare general education teachers to help these students.

Gifted education specialists and other curriculum specialists who work within the general education

classroom through a coaching or co-teaching model (Mofield, 2020) will need more intensive preparation, such as add-on licensure. Some students' abilities are very advanced, requiring more substantial interventions in cluster groups, pull-out programs, or self-contained settings led by teachers with graduate-level specialist licensure or higher degrees (WCGTC, 2021). These teachers need specialized training including advanced content knowledge, techniques for encouraging complex, abstract, creative, and interdisciplinary thinking, and methods of encouraging self-directed learning and original research. Although gifted education is sometimes seen as primarily an elementary school program, the need for this kind of training is equally important in middle and secondary school as gifted students mature and become capable of more complex reasoning (Gallagher, 2009).

Existing Policies Related to Professional Learning in Gifted Education

The status of preservice learning requirements

Under the status quo, there is no federal mandate requiring educators to learn about gifted students and their needs, nor is there a requirement in most states. Table 1 summarizes the status of requirements related to gifted education preparation for general education teachers and for specialists who work with gifted students (Rinn et al., 2022).

When asked about requirements for preservice teacher candidates, only four of 49 states (i.e., Idaho, Iowa, Maine, and Virginia) had a requirement for teacher candidates to learn some content related to gifted education in a university course. By implication, the vast majority of classrooms across the U.S. are led by teachers who are unprepared to meet the needs of their advanced students.

The status of professional learning requirements for administrators and support personnel

Of the 48 states that responded to the survey questions about professional learning in gifted education for administrators, counselors, and special education teachers, the majority reported not having a state requirement for PL was determined by the local education agency (LEA; Rinn et al., 2022). Only three states require professional learning for administrators, and only two states require PL for counselors and special education teachers. Figure 1 summarizes these results. The absence of administrator preparation may partially explain why the *State of the States in Gifted Education* (Rinn et al., 2022) report also revealed an absence of consistent services for gifted students nationwide. Only 28 of the 52 states (including Puerto Rico and the Department of Defense) reported having a mandate for gifted programming and services.

The status of professional learning requirements for gifted education specialists

According to the *State of the States in Gifted Education* (Rinn et al., 2022) only 23 of the 46 responding U.S. states require any level of postgraduate professional preparation for gifted specialists (e.g., gifted and talented [GT] endorsement, licensure, certification, or multiple options), while 18 allowed LEAs to develop their local requirements. A total of 17 out of the 46 states—one-third of the states in the nation—had no requirements for preparing preservice or in-service teachers to work with gifted students. Data related to current state policies regarding professional learning requirements for gifted education specialists is summarized in Figure 1.

Without federal and state mandates, it seems likely that only educators with the time, desire, and financial

TABLE 1 Responses to Questions Regarding Professional Learning in NAGC State of the States Report (Rinn et al., 2022)

Question	No[1]	Determined by LEA	Yes
Are all pre-service teacher candidates in your state required to take university coursework in gifted education?	45	(no option)	4
Is professional learning for administrators on the nature and needs of gifted students required in your state?	25	20	3
Is professional learning for counselors on the nature and needs of gifted students required by your state?	24	22	2
Is professional learning for special education professionals on the nature and needs of gifted students required in your state?	26	20	2

[1] Reported in raw numbers.

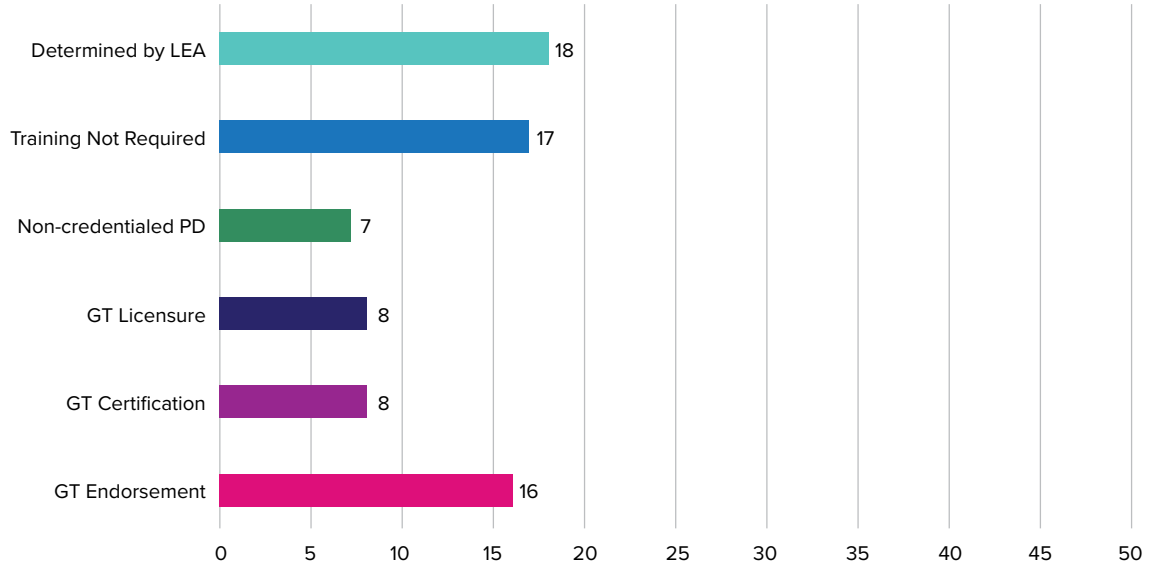

FIGURE 1 Frequency of professional learning requirements for gifted education specialists in U.S. states (Rinn et al., 2022).

[1] Multiple responses possible

[2] All response options refer to postgraduate higher education courses or in-service workshops

resources will pursue postgraduate certification or advanced degrees in order to become educated in the nature and need of gifted students.

While all gifted students stand to benefit from instituting universal education requirements, gifted students of color and gifted students in poverty will gain the most. One benefit to gifted CLED students is the infusion of understanding that gifted students exist in all cultures, regions, and income levels across all branches of education. A second, equally important, benefit is that when all educators learn accurate introductory knowledge about the aims of gifted education, more are likely to pursue endorsement or licensure, including teachers from diverse backgrounds. Research suggests that more Black and Hispanic students participate in gifted programs in schools with higher proportions of Black and Hispanic teachers (Grissom & Redding, 2016). Beyond this, all students benefit when they see educators from all backgrounds leading in gifted education classrooms and programs.

Public and Policy Support for Universal Educator Preparation in Gifted Education

The absence of policy persists despite support for professional learning in gifted education for all educators among teachers and the general public. Support is already embedded in key policies, education standards, and principles.

Support for professional learning in gifted education among teachers and the public

Researchers have reported that classroom teachers favor professional learning in gifted education (Farkas & Duffett, 2008; Şahin, 2021; Sayı, 2018). For example, Farkas and Duffett (2008) surveyed 900 teachers to understand their perceptions about how gifted students fare in schools. They found that 90% of the respondents favored “having more professional development for teachers to develop skills for teaching advanced kids” (p. 70). Most teachers reported that academically advanced students were not a high priority in their schools, which supports the necessity of universal educator preparation in gifted education to shift administrators’ attitudes (Farkas & Duffett, 2008). More recently, Şahin (2021) conducted a qualitative metasynthesis of 30 teacher preparation studies in gifted education from 2000-2020 and found that there was a need for further training in nine of the studies, and teachers expressed the need for more professional learning in three of the studies.

A majority of the public also wants teachers to know how to address the needs of gifted students. The results of a 2014 survey of 1,414 U.S. adults, assessing their attitudes toward gifted education, indicated that 82% of respondents reported they felt “a great deal of concern”

or were "somewhat concerned" that teachers were not sufficiently trained to meet the needs of gifted students. In a later question, 86% of respondents reported they "support requirements that any teacher who serves gifted children receives special training" (p. 5). Based on this and other findings, IEA (2018) recommended advocating for preservice preparation for all teachers and for professional learning and supplemental services in schools.

Policy support for universal educator preparation in gifted education

The absence of universal educator preparation in gifted education persists despite evidence of support for the concept among the public, and in some policy language. Table 2 presents additional support for universal educator preparation in gifted education based on literature from public research, key policies, gifted education standards and principles, and teacher preparation standards.

Gifted education in general education preparation standards

Despite the prevalence of advanced students in the general education classrooms, lagging achievement among critical demographic groups, and desire among teachers and the public for better educator preparation, there is surprisingly little emphasis on gifted education in teacher preparation standards. The Council for Accreditation of Educator Preparation (CAEP, 2022) promotes the need for inclusive practices as a standard in accrediting teacher education programs. Although this document does not explicitly mention gifted education, the standards communicate an expectation for preservice teachers to identify and plan for gifted learners, student teachers, cooperating educators, and university supervisors who use edTPA in Special Education (Stanford Center for Assessment, Learning & Equity, 2019) or the Candidate Preservice Assessment of Student Teaching Form (CPAST; The Ohio State University, 2021). For example, the edTPA handbook recommends that preservice teachers know how to differentiate for gifted learners. One hundred educator preparation programs across the United States use the CPAST. The pedagogy and dispositions emphasized within CPAST take a high-level look at qualities that student teachers should exhibit. Gifted students are mentioned twice in the document relative to specific populations and differentiation practices.

What the Research Says About Professional Learning for Educators

Several researchers have reported that there is an empirical-based need to expand in-service teachers' understanding of gifted students and practices (Allotey et al., 2020; Antoun et al., 2020; Lassig, 2009; Şahin, 2021; Sánchez-Escobedo et al., 2020), as well as preservice

TABLE 2 Existing Sources of Public and Policy Support for Universal Educator Preparation in Gifted Education

Federal Policy Support	The Every Student Succeeds Act (ESSA, 2015) reauthorization allows Title II funding to support the identification of students who are gifted and talented, or high ability, and the provision of instructional practices to support these students. This indicates support from the federal level for professional learning in gifted education.
Professional Standards Support	The National Board Teaching Standards state that teachers pursuing National Board Certification should "understand the similarities and differences in using specific instructional strategies with a widely diverse population of students, such as those who are deaf, those who are gifted or severely developmentally delayed, and those who have additional disabilities" (National Board for Professional Teaching Standards, 2010, p. 61) (emphasis added).
Advocacy Support	The Council for Exceptional Children (CEC) and the National Association for Gifted Children (NAGC) advocate for universal educator preparation in gifted education. Standards include the Knowledge and Skill Standards for All Teachers (n.d.). NAGC-CEC *Teacher Preparation Standards in Gifted Education* (2013) and *Advanced Standards in Gifted Education Teacher Training* (2013) include specific standards and key elements for what effective gifted educators and specialists must know, understand, and do. *Standards for Faculty in Gifted Education Teacher Preparation Programs* (NAGC, 2016) is a resource to ensure educators have access to highly qualified instructors in gifted education.
International Support	The World Council for Gifted & Talented Children (2021) *10 Global Principles for Professional Learning in Gifted Education* acknowledges universal preparation in gifted must "Include provisions for educating administrators, counselors, psychologists, special educators, and others about the needs of gifted students" (p. 3). The principles include recommendations for tiered professional learning plans of increasing length and complexity based on educators' needs and contexts.

teachers' self-efficacy and motivation for working with gifted students (Matheis et al., 2017). Literature from general education provides insight into the effects of professional learning on teacher change. Using a synthesis of 27 meta-analyses, Hattie (2023) reported that professional learning programs had an overall medium positive effect size of 0.44, with specific effect sizes that were larger for teacher learning (d = 0.90) and teachers' behavior (d = 0.60), but lower for teachers' reactions to the professional development (d = 0.42), and influence on student learning (d = 0.37). Included in his study was Timperley et al.'s (2007) synthesis of 97 international studies, which concluded that professional learning can have a robust, positive, and large effect on student learning (overall effect size = 0.66). Similarly, Yoon et al. (2007) conducted a systematic review of nine studies on general education professional learning and found that teacher professional learning can increase student achievement.

Specific to gifted education, Şahin (2021) conducted a qualitative metasynthesis of 30 sources on the effects of gifted education teacher preparation and teachers' beliefs. Participants in the studies included pre- and in-service teachers, students, parents, and other educators. Seven of the 30 sources indicated that "trainings increase teachers' positive attitudes, awareness, and are successful" (Şahin, 2021, p. 106). Although the research literature on the direct effects of professional learning in gifted education is still emerging or has mixed results, some researchers present evidence that professional learning in gifted education can lead to positive changes or increases in the following:

- Attitudes about gifted students and self-efficacy (e.g., Garces-Bacsal et al., 2022; Opoku et al., 2023; Swanson et al., 2022; Wadaani, 2023)
- Knowledge about gifted education and practices (e.g., Brigandi et al., 2019; Opoku et al., 2023; Sánchez-Escobedo et al., 2020)
- Gifted education practices (e.g., Garces-Bacsal et al., 2022; Reis & Westberg, 1994; Swanson et al., 2022)
- Teachers' observations of improvement in student academics and behavior (Garces-Bacsal et al., 2022)

Additionally, some researchers who have investigated the effects of coursework on gifted education at universities or colleges have shared positive effects such as the following:

- Higher scores on observations of in-service teaching practices for those with PL compared to those without professional learning (Hansen & Feldhusen, 1994)
- More frequent curriculum modifications for high-ability/gifted students compared to in-service teachers without professional learning (Westberg & Daoust, 2003)
- Increased perceptions of preservice teachers' knowledge about the nature and needs of gifted students and confidence in adjusting instruction for high-ability students (Bangel et al., 2010)
- Attitude changes due to a combination of preservice education and professional learning (Wadaani, 2023)

These selected studies indicate that professional learning in gifted education may effectively develop positive teacher attitudes and increase teacher self-efficacy for teaching gifted students. This increased understanding and skill could enhance gifted students' learning experiences and outcomes. A shift towards universal educator preparation in gifted education, coupled with further research, could expand the field's understanding of which specific factors of professional learning at the university, college, and local school district levels are the most effective.

Summary

Gifted and advanced students deserve an appropriately challenging education, yet they spend most of their time with teachers who are not prepared to recognize or meet their needs. Teachers deserve preparation that helps them address *all* of the students in their classroom. The absence of a foundation course in gifted education leaves general education teachers unprepared to meet the needs of 10%-30% of their students. Instituting a foundational preservice course, and requiring ongoing learning, will have widespread systemic benefits, including:

- Accurate understanding of the aims of gifted education.
- Better understanding of differentiation for higher level learning.
- Increased recognition of, and empathy for, gifted students and their characteristics among teachers and school counselors.
- Improved student referrals for intensive, advanced programming, with special benefit to students in poverty, students of color, multiexceptional, and LGBTQ+ students.

- Increased early identification of advanced ability, particularly among children in poverty, children of color, and children in rural settings who are vulnerable to underachievement relative to their potential.
- Increased access and opportunity to advanced learning across school districts.
- Improved interactions between general educators and gifted education specialists.
- Better program support and evaluation by district administrators.

Together, these improvements create a compelling argument to ensure that all educators receive the education they need to achieve success with gifted, talented, and advanced students.

Recommendations

Universal Educator Preparation Design:

- All educators at any level should be required to complete at least the equivalent of three undergraduate credit hours, specific to gifted education, as part of their preservice preparation.
- Specialists in gifted education who work with gifted students in more intensive settings (i.e., cluster groups, resource consultation, pull-out programs, self-contained classrooms, schools for gifted students) should complete more intensive, comprehensive, evidence-based, and high-quality LEA endorsement training, or licensure and/or certificate-based training at an Institute of Higher Education (IHE).
- Universal educator preparation in gifted education should be equity-driven (Banks & Banks, 1995, Ford et al., 2018, 2020; Novak & Lewis, 2022) and emphasize changing educators' beliefs and attitudes about gifted students, including those from diverse groups. When advocating for universal teacher preparation in gifted education, professional learning providers must prepare educators to consistently infuse culturally responsive practices.
- Universal educator preparation in gifted education should be informed by research-based best practices for exemplary teacher education programs, adult learning, differentiated professional learning, and/or online learning as applicable (e.g., self-directed learning and choice; opportunities to observe actual classroom methods, translate theory into practice, and receive formative feedback; Darling-Hammond, 2000; Edinger, 2020; Hattie, 2012; Hayden et al., 2023; Hines et al., 2023; Novak & Weber, 2018; Swanson et al., 2022).
- Consistent with ESSA (2015) recommendations, professional learning in gifted education should be "sustained (not stand-alone), intensive, collaborative, job-embedded, data-driven, and classroom focused" (p. 296).

Advocacy at the Federal and State Levels:

- Advocates and leaders in the field of gifted education should identify and engage with national, regional, state, and local stakeholders to advocate for universal educator preparation, beginning with a required preservice undergraduate foundation course for all educators.
- Federal and state education agencies should require that educators working primarily with gifted students take courses in gifted education that lead to a certificate or advanced degree and participate in ongoing in-service professional learning about gifted students as a component of license renewal.
- Federal and state education agencies should include recommendations for in-service professional learning about gifted students as a component of license renewal.
- Federal and state agencies should discourage awarding licensure based exclusively on standardized testing (e.g., Praxis) as the norm for all educators interested in working with gifted students, as it is difficult to assess skills in teaching for advanced and complex thinking solely through a multiple-choice test.

Future Research:

- Additional high-quality research should be conducted to evaluate the effectiveness of universal educator preparation and PL in gifted education across different contexts.

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1300 I Street, NW
Suite 400E
Washington, DC 20005
nagc.org