Twice-Exceptional Learners: Effects of Teacher Preparation and Disability Labels on Gifted Referrals

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Abstract

The goal of this mixed methods study was to explore differences among teachers ($n = 52$ special education teachers, $n = 195$ general education teachers, and $n = 30$ gifted education teachers) on their perceptions of students with disabilities and their willingness to refer them to a gifted and talented program. In this follow-up to an earlier work, data reveal that teachers' decisions for referral are significantly influenced by their teaching credentials and by the presence or absence of a disability label. When compared to teachers of gifted students and general education teachers, special education teachers are least likely to refer students to a gifted program, with disabilities and without. Results further indicate that all teachers are much less willing to refer students with disability labels to gifted programs than identically described students with no disability labels.

Keywords

twice-exceptional, gifted, teacher perceptions, gifted referrals

The potential for giftedness exists in all segments of the population, including students with disabilities. For many reasons, students with disabilities—or twice-exceptional learners—remain underrepresented and underserved in gifted programs throughout the country (Davis & Rimm, 2004; L. J. Johnson, Karnes, & Carr, 1997). Given that one of the most common methods for screening students for gifted identification includes teachers' observations and nominations (Davis & Rimm, 2004; Hallahan, Kauffman, & Pullen, 2009), teachers' perceptions of students with disabilities and their knowledge of gifted characteristics become a critical component for initial identification of potential giftedness among twice-exceptional learners.

Twice-exceptional students have been described as students "with special intellectual-processing problems [learning, communication, and/or behavioral disabilities] that nevertheless, maintain an extraordinary high general intellectual potential" (Gallagher, 1988, p. 110). In the absence of accurate prevalence data, the highest incidence of giftedness among students with disabilities is most likely among students with learning disabilities (LDs; Miller & Terry-Godt, 1996), given the increased attention in identifying characteristics of this subpopulation of twice-exceptional learners. For many gifted students with LDs and other twice-exceptional learners, the students' disabilities frequently mask their gifted abilities, thus causing both exceptionalities to appear less

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extreme. The result is average or below-average performance on many standardized and informal measures of aptitude and achievement (Baum, 1990; Baum, Owen, & Dixon, 1991; Cline & Schwartz, 1999; Kalbfleisch & Iguchi, 2008), making identification of either exceptionality more challenging. Some have suggested that most gifted students with LDs are not identified for either their disabilities or their exceptional abilities until much later in life (Baum, 1990; Brody & Mills, 1997). Based on the results of Ferri, Gregg, and Heggoy's study (1997) examining the profiles of college students, this may be true. Ferri et al. found that gifted individuals with LDs "were less likely to be identified as having a learning disability in elementary school and more likely to be identified for the first time during their college careers than were college students demonstrating nongifted/LD profiles" (p. 557).

Although we have a growing body of research addressing gifted students with LDs (F. A. Karnes, Shaunessy, & Bisland, 2004; Reis & Colbert, 2004; Winebrenner, 2003), little research has focused on identifying the characteristics and needs of gifted students with emotional and behavioral disorders (EBDs; Morrison & Omdal, 2000; Reid & McGuire, 1995). Researchers have found that gifted students with EBDs are regularly overlooked for gifted services because their negative behaviors contradict commonly held perceptions of gifted students. Reid and McGuire (1995) reviewed research relating to factors identified by teachers as being critical for school success. Among these factors, compliant behaviors (e.g., observing classroom rules, demonstrating appropriate classroom behavior) are consistently rated higher and more valued by classroom teachers than are academic ability and performance on academic tasks. "Thus, one would logically infer that the critical success factors identified by teachers are likely representative of the skills teachers also view as important descriptors of the performance necessary for students to be nominated for gifted programs" (p. 3).

Among the many obstacles hindering the identification of twice-exceptional students for gifted programs are teachers' stereotypic expectations of gifted learners and lowered expectations for students with disabilities (Cline & Hegeman, 2001; Minner, Prater, Bloodworth, & Walker, 1987). Other frequently cited obstacles include lack of teacher training in gifted education (Cline & Schwartz, 1999; Davis & Rimm, 2004; Starko, 2008) and the separation among the disciplines of exceptional student education, gifted education, and general education in teacher preparation programs (Yewchuck, 1986).

Teachers' stereotypic expectations work against the identification of twice-exceptional students in several ways. First, without minimal training in the nature and needs of gifted students, teachers tend to believe that gifted students are globally gifted; that is, they perform at high levels in all academic and social areas, test well, and need little support to succeed. According to researchers in the field of gifted education (Cline & Hegeman, 2001; Cline & Schwartz, 1999; Winner, 1996; Yewchuck, 1986), many of the misconceptions concerning the globally gifted student are rooted in the findings of the early Terman studies (1925). Terman's case studies and composite portraits of predominantly Caucasian gifted students from upper socioeconomic backgrounds led many to believe that "gifted children exceeded norms in all areas of development, were good looking and were motivated and mature" (Cline & Schwartz, 1999, p. 38). Although researchers have long since acknowledged that gifted students, with and without disabilities, can and do have uneven profiles and do not always excel in all areas, the globally gifted myth lingers and is prevalent in today's educational system (Little, 2001).

The effects of disability labels on teachers' perceptions of students have been extensively researched (Algozzine & Sutherland, 1977; Blatt, 1972; Dunn, 1968; Foster, Schmidt, & Sabatino, 1976; Foster & Ysseldyke, 1976; Rolison & Medway, 1985; Salvia, Clark, & Ysseldyke, 1973; Taylor, Smiley, & Ziegler, 1983). Researchers have identified that preservice and in-service teachers have lower

expectations for students with disabilities in public school classrooms and even in college classrooms (Beilke & Yssel, 1999; Minner & Prater, 1984).

Despite the fact that most gifted students spend all or most of their day in general education classrooms (Starko, 2008), teachers are not adequately prepared to identify and serve gifted students with or without disabilities (Croft, 2003; Starko, 2008). According to the 2006–2007 *State of the States in Gifted Education* report (National Association of Gifted Children, 2007), only four states (Kansas, Montana, Oregon, Virginia) require gifted and talented training as part of their initial teacher preparatory programs. Undergraduate education majors typically take one required special education course (e.g., Exceptional Learner) that may include discussion from one chapter devoted to the gifted learner (Clinkenbeard & Kolloff, 2001; Davison, 1996). As a result of little or no preparation, teachers do not feel sufficiently prepared to work with gifted students. According to the National Commission on Teaching and America's Future (1996), only 20% of all teachers feel very well prepared to meet the diverse needs of gifted students. Too few classroom teachers know how to recognize the characteristics of gifted learners (Croft, 2003); fewer still recognize the paradoxical nature of gifted students with disabilities (Bianco, 2005).

Similarly, special education teacher preparation provides little or no training in the characteristics or needs of gifted children. The focus in training and practice placed on detecting and remediating deficits may inhibit special educators from recognizing areas of noticeable strength (Miller & Terry-Godt, 1996) or knowing how to provide opportunities for students to demonstrate their gifts and talents. Although special education teachers may provide services for students with disabilities in any number of settings or through a variety of approaches, their role does not preclude noting and nurturing potential giftedness among the students whom they serve and making the appropriate referrals for evaluation and possible placement in gifted programs. The special education teacher's role becomes critical for gifted students with disabilities given that most twice-exceptional students are first identified and recognized for their disability, not their gifts and talents (Davis & Rimm, 2004).

In terms of the federal government, the education of gifted children is quite unlike the education of students with disabilities; that is, the federal government neither mandates services nor funds district-level gifted education programs. Although many states and local school districts recognize that gifted and talented students have special needs, state laws vary widely, resulting in great disparities among the types of services offered for gifted learners and among the teacher preparation requirements for those delivering the services. For teachers working in specialized programs for gifted and talented students, only 18 states require that they take graduate courses or have teaching certificates or endorsements in gifted education (see report of the National Association of Gifted Children, 2007). State requirements for certification in gifted/talented education range from 6 credit hours (Arizona and South Carolina) to 24 (Colorado). The emphasis in training and practice is placed on understanding the inherent and diverse academic, social, and emotional needs of gifted students; achieving expertise in types of high-level differentiation of content and instructional methods; and focusing instruction in areas of students' strengths (Croft, 2003). Teachers of gifted students typically have little or no training in the characteristics or needs of students with disabilities (L. J. Johnson et al., 1997; M. B. Karnes, 1979).

The initial screening and referral process for gifted students relies on teachers' observations and perceptions of students (Richert, 1997). Although teacher referral is widely used for initial identification of gifted students, it is one of the least reliable and least valid methods of identification (Davis & Rimm, 2004). Teachers typically nominate only those students who conform to their

expectations of what gifted students look like, how they perform on various measures of achievement, and how they behave in the classroom. This tendency apparently translates into teachers' referring high-achieving, well-behaved, Caucasian, English-speaking male students from upper-middle-class families (Davis & Rimm, 2004). Research suggests that without training, teachers are ineffective at accurately identifying gifted students in their classrooms (Gear, 1976, 1978) and that personal biases and stereotypic expectations affect whom they choose to refer for gifted services (Powell & Siegle, 2000; Siegle, 2001).

Little is known about the effects of disability labels on teachers' referrals to gifted programs and what differences may exist among the referrals of teachers with different training. More than a decade ago, Minner's research (1989, 1990; Minner et al., 1987) demonstrated that general education teachers and teachers of the gifted are negatively influenced by certain disability labels when making referral decisions for gifted programs. More recently, Bianco (2005) examined the effects of the disability labels (LDs and EBDs) on general and special education teachers' referrals to gifted programs and discovered that such labels do influence teachers' referral decisions. Moreover, general education teachers are more likely than their special education colleagues to refer students with disabilities for gifted services. Although we have limited evidence that disability labels influence general and special education teachers' referral decisions for gifted programs (Bianco, 2005; Minner, 1989, 1990; Minner et al., 1987), we do not know how teachers of the gifted compare to the other two teacher groups when considering twice-exceptional learners. Why teachers—general education teachers, special education teachers, and teachers of the gifted—refer students with disabilities for gifted programs or not remains unexplored. Given the underrepresentation of students with disabilities receiving gifted services and the important roles that teachers play in the referral process for twice-exceptional students, these issues need further exploration.

This is a follow-up to earlier work (Bianco, 2005) that investigated general education and special education teachers. The present study adds to the former by adding teachers of the gifted. First, regarding the purpose of the current study, we wanted to examine the differences in referral recommendations among the three teacher groups (general education, special education, and teacher of the gifted). Second, we wanted to examine the influence that the disability labels *LD* and *EBD* have on public school teachers' referral recommendations for gifted programs. Last, we analyzed teachers' reasons for referral choices by teacher type. We investigated three questions: Do referral ratings for gifted programs differ among general education teachers, special education teachers, and teachers of the gifted? Do referral ratings for gifted programs differ among teachers who believe that the student has a LD, an EBD, or no exceptional condition? and Is there an interaction between labeled conditions and teacher certification type?

Method

This mixed methods study employed a fully mixed concurrent equal-status design (Leech & Onwuegbuzie, 2009). This design involves mixing qualitative and quantitative approaches across more than one step of the research process. The qualitative and quantitative approaches were mixed at the stages of data collection, analysis, and interpretation.

Participants

This study comprised 277 participants (52 special education teachers, 195 general education teachers, and 30 teachers of the gifted) who were teachers working in one south Florida school district. All were working at the elementary school level and had completed at least a bachelor's degree in education. Participant selection and group membership were determined on the basis of data obtained from

a demographic data sheet. We controlled for teaching credentials and demographic composition with regard to socioeconomic status of the student population at assigned school sites. Participants meeting established criteria were selected for the study—namely, certification in general education; certification in special education with licensure in LDs, varying exceptionalities, or emotional handicaps; or a gifted education endorsement.

Socioeconomic status was determined per school by the percentage of the student population receiving free and reduced-price lunch. Because low socioeconomic status may be a confounding variable, this research included only teachers working at elementary schools that had 30% or less of the student population receiving free and reduced-price lunch. Although teachers at 41 elementary schools met specified criteria and were asked to participate in this study, participants were limited to teachers from 19 schools where school administrators granted permission to conduct research at their school site.[1]

Special education teachers. Fifty-two special education teachers participated in this study—all of whom were female. They had completed at least a bachelor's degree in education with certification credentials in one or more of the following areas: varying exceptionalities (n = 33), LDs (n = 40), and emotional handicaps (n = 5). Most special education teachers had bachelor's degrees (n = 19) or master's degrees (n = 31). Two special education teachers had specialist degrees, and no special education teacher had completed a doctorate.

Their mean age was between 40 and 50 years old, and they had an average of 10.67 years of teaching experience. Special education teachers holding dual certification in general education (n = 26) were included in the study.

General education teachers. In sum, 195 general education teachers participated in this study: 186 women and 9 men. These participants had completed at least a bachelor's degree in education with certification in elementary education: 100 had bachelor's degrees, 67 had master's degrees, 4 had specialist degrees, and 4 held doctoral degrees. Their mean age was between 40 and 50 years old, and they had an average of 11.42 years of teaching experience. General education teachers holding dual certification in any area of exceptional student education, including gifted education, were not included.

Teachers of the gifted and talented. The smallest group in this study included teachers with an endorsement in gifted education (n = 30). All but one were women (n = 29). These participants had completed at least a bachelor's degree in education with certification in elementary education and an added endorsement in gifted education (Florida Rule No. 6A-4.01791 requires teachers to complete 15 semester hours of specialized course work in gifted education[2] for an added endorsement). There was about an even distribution of gifted teachers with either bachelor's degrees (n = 13) or master's degrees (n = 17). The mean age of teachers of the gifted was between 40 and 50 years old, with an average of 13.5 years of teaching experience.

Procedure

Participants were randomly assigned to one of three treatment conditions: no exceptionality label, LD label, or EBD label. Table 1 illustrates the number of teachers and teacher types randomly assigned to each group. Each group was provided with a vignette describing a student with gifted characteristics. The vignette stem describing "A.K.," a gifted student, remained constant across all conditions (see Figure 1). Approximately one third of each group received (a) only the vignette stem (no label), (b) the vignette stem plus appended label identifying the student as having LD ("A.K., a fourth grade student with learning disabilities (LD), is currently attending your school"), or (c) the vignette stem plus appended label identifying the student as having EBD (i.e., "A.K., a fourth grade student with emotional and behavior disorders (EBD), is currently attending your school").

Table 1. Types of Teacher by Vignette Label

	General education teachers	Special education teachers	Teachers of gifted
Vignette Label	*n* (%)	*n* (%)	*n* (%)
Control (no label)	58 (29)	18 (35)	9 (30)
Learning disabilities	77 (40)	16 (30)	11 (37)
Emotional and behavioral disorders	60 (31)	18 (35)	10 (33)
Total	195 (100)	52 (100)	30 (100)

Vignette Stem

A.K, a fourth grade student, is currently attending your school.

A.K. has been described as intense, inquisitive, energetic and imaginative. A.K. is committed to completing tasks that are self-selected and self-directed. This student is an independent learner often preferring unstructured, independent tasks to teacher directed or cooperative group activities. A.K. prefers finding solutions to problems independently and in sometimes unconventional ways.

A.K. is extremely sensitive to criticism (self-imposed and by others). This student is very self-critical and becomes easily frustrated and angry when mistakes are made or there is pressure for completing work within a deadline.

This student has many interests, particularly around themes of investigating UFOs and life on other planets. Given the opportunity, A.K. could spend hours investigating this line of interest.

Teachers have noted that A.K. dislikes and resists most routine practice tasks such as math drills, spelling tests, handwriting practices and any copy tasks.

Overall, A.K.'s language arts scores reflect above grade level achievement in reading and writing. A.K.'s reading skills are well above grade level. This student enjoys reading most anything on topics of interest including science and science fiction but dislikes and resists suggestions to expand reading to other areas.

While A.K. enjoys math and has a very good grasp of mathematical concepts, many careless computation errors are made especially when attempts are made at working too quickly. Recent scores on achievement tests reflect grade level achievement in mathematics, however classroom performance is lower than one would expect.

Socially, A.K. has a few close friends and is generally accepted by peers. A.K.'s friends enjoy hearing about the most recent UFO findings and are intrigued by this child's vivid imagination. Problems surface when A.K. dominates activities or becomes argumentative and spirited when challenged by peers or adults. While this problem has surfaced in the classroom and on the playground, it is most frequently observed during competitive activities (e.g. spelling bees, sports). This can sometimes be a problem for A.K., friends and teachers.

Figure 1. Vignette stem used in the study—that is, no labels are attached to it

After reading the vignettes, participants completed a survey consisting of six questions on a 4-point Likert-type scale (1 = *strongly agree*, 4 = *strongly disagree*). One of the six questions addressed the teachers' willingness to refer A.K. for possible placement in gifted

programs: "I would recommend that this student be referred for placement in our school's gifted program." The remaining five questions served as distracters: "I would recommend that this student join one of the after-school science clubs." "I would recommend that this student participate in our school sports program." "I would recommend that this student participate in our math-tutoring program." "I would recommend that this student be referred for counseling services provided at our school or by an outside agency." "I would recommend that this student participate in social skills training."

Data were collected by one of two methods: One, surveys were distributed and collected by the researcher during faculty meetings; two, surveys were distributed to teachers by school secretaries or the school's exceptional student education specialist and collected by the researcher at a later date. For data collected by the researcher at school sites, teachers were asked to complete a survey addendum, which asked them to reflect on their response to the gifted referral question: "Briefly state why you strongly agreed, agreed, disagreed or strongly disagreed with the statement."

Participants were not provided with the definitions for the terms *gifted*, *LD*, or *EBD*; however the *Florida Statutes and State Board of Education Rules* (Florida Department of Education, 2001) indicated definitions for these categories when the data were collected.[3]

Vignette: Content Validity

The vignette describing the hypothetical gifted student was developed on the basis of an extensive review of the literature and characteristics described in several gifted education textbooks (i.e., Colangelo & Davis, 2003; Coleman & Cross, 2001; Davis & Rimm, 2004). To ensure content validity, the researcher distributed the vignette to teachers certified in gifted education (i.e., experts) who were working in south Florida at a special school for gifted students. The experts read the vignette stem and responded to questions to determine if the characteristics describing resembled those displayed by gifted students whom they have observed. The participants unanimously agreed that the student's characteristics resembled those of a gifted student, and they made no suggestions to add or omit any characteristics.

Results

Quantitative Data Analysis

To answer the research questions, we analyzed mean scores from the survey instrument to determine statistical significance. A 3 × 3 factorial analysis of variance was used to evaluate the main effects of labeled conditions (three levels), teacher certification type (three levels), and the interaction between labeled condition and teacher type. Given a significant main effect and/or significant interaction effect, we conducted a post hoc analysis (Tukey test) to determine which differences between group means were significant. Effect size was determined by eta squared (Cohen, 1988).

We investigated three questions: Do referral ratings for gifted programs differ among general education teachers, special education teachers, and teachers of the gifted? Do referral ratings for gifted programs differ among teachers who believe that the student has a LD, an EBD, or no exceptional condition? and Is there an interaction between labeled conditions and teacher certification type? To investigate whether there was a significant difference in agreement to refer the student to a gifted program by student label type (control, LD, EBD) and by teacher type (general education, special education, gifted), we conducted an analysis of variance. The assumptions of independent observations, homogeneity of variances, and normal distributions of the dependent variable for each group were checked and met.

As illustrated in Table 2, two significant main effects were found. For the first research question (do referral ratings for gifted programs differ among general education teachers, special education teachers, and teachers of the

Table 2. Two-Way Analysis of Variance for Gifted Referral as a Function of Teacher Type and Label

Variable and source	*df*	*MS*	*F*	η^2	η
Gifted referral					
Label type	2	6.57	11.45**	.08	.28
Teacher type	2	4.86	8.48**	.06	.24
Label × Teacher Type	4	0.87	1.51	.02	.14
Error	268	0.57			

**$p < .001$.

gifted?), a significant main effect was revealed for teacher type, $F(2, 268) = 8.48$, $p < .001$, partial $\eta^2 = .06$. Tukey post hoc analysis revealed that teachers of the gifted ($M = 1.53$) were more likely to refer students than were general education teachers ($M = 1.98$, $p = .009$) and special education teachers ($M = 2.23$, $p = .001$). Closer examination of the mean scores by teacher type revealed that special education teachers were least likely to refer the hypothetical student for gifted services.

With regard to the second research question (do referral ratings for gifted programs differ among teachers who believe the student has a LD, an EBD, or no exceptional condition?), there was a significant main effect for label type, $F(2, 268) = 11.45$, $p < .001$, partial $\eta^2 = .08$. Table 3 shows the number of participants, the mean, and the standard deviation of gifted referral for each cell. Tukey post hoc analysis revealed that students labeled LD ($M = 2.14$, $p < .001$) and EBD ($M = 2.14$, $p < .001$) were less likely to be referred than the control group ($M = 1.98$). Furthermore, the overall mean score for the nonlabel group was lower than that for the group identified as EBD or LD. In other words, teachers were more likely to strongly agree or agree to refer nonlabeled students for gifted programs than identically described students with either of the two exceptionality labels.

With regard to the third research question (is there an interaction between labeled conditions and teacher certification type?), there was no significant interaction between the effects of teacher type and label type on gifted referral.

Qualitative Analysis

The qualitative portion of this study was designed to explore and understand the reasons why teachers with different preparation and credentials elected to refer the profiled students for gifted services or not. In sum, 159 teachers (57% of participants) were asked to complete an addendum to the survey, which asked them to reflect on their response to the gifted referral question: "Briefly state why you strongly agreed, agreed, disagreed, or strongly disagreed with the statement."

Data were analyzed using constant comparative analysis (Glaser & Strauss, 1967) and classical content analysis. Berelson (1952) defined the latter as "objective, systematic, and quantitative description of the manifest content of communication" (p. 489). Coding was done inductively. During the constant comparison open coding process, we broke down sentences into meaning units to which we attached labels. These meaning units resulted in the identification of the following codes: characteristics of the student, previous experience with similar students, student's need for challenge, advanced reading skills, science interests, the need for IQ data, the student's deficits, and a mismatch between the needs of the student and the program.

We assessed our interrater reliability with approximately 20% of the data. To do so, we first independently coded the data; then, we compared the codes, of which 98% were in agreement. To better understand the results from the analysis, we present the results from the classical content analysis by teacher type and label condition. Table 4 presents the overall results from the classical content analysis.

General education teachers in the control condition (no disability label). The majority (97%) of the general education teachers in the control condition strongly agreed or agreed that the student should be referred for gifted services.

Table 3. Means, Standard Deviations, and Sample Sizes for Gifted Referral as a Function of Teacher Type and Label

	Control			Learning disabilities			Emotional and behavioral disorders			Total	
Label type	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*M*	*SD*
General education	58	1.67	0.60	77	2.18	0.87	60	2.03	0.76	1.98	0.79
Special education	18	1.72	0.75	16	2.44	0.81	18	2.56	0.78	2.23	0.85
Gifted	9	1.11	0.33	11	1.45	0.69	10	2.00	0.82	1.53	0.73
Total	85	1.98	0.64	104	2.14	0.88	88	2.14	0.78	1.98	0.81

Table 4. Classical Content Analysis Results by Teacher Type and Student Label

Teacher type	Characteristics	Previous experience	Needs challenge	Advanced reading	Science	Need IQ data	Deficit mentioned	Mismatch
General education								
Control	27	2	15	7	0	1	0	0
LD	17	2	6	11	3	7	12	7
EBD	22	0	4	6	2	5	14	6
Gifted								
Control	7	2	3	0	0	0	0	0
LD	7	1	1	0	0	1	4	1
EBD	2	0	2	0	0	0	2	2
Special education								
Control	4	0	1	1	0	0	2	1
LD	4	0	3	0	0	4	2	3
EBD	0	0	1	0	0	2	1	1

Note: LD = learning disabilities; EBD = emotional and behavioral disorders.

Most comments referenced the student's gifted characteristics as the reason for referral: "He has gifted characteristics—is independent and unconventional thinker, spirited." Other frequent comments focused on advanced language arts and reading skills: "The key words for me were high reading skills, inquisitive, imaginative." Many comments also focused on the student's needing a more challenging learning environment: "I believe he or she is interested in more challenging concepts, they are frustrated when held down." There were no comments mentioning student's deficits or areas of weakness.

General education teachers in LD condition. Fewer general education teachers in the LD condition (69%) strongly agreed or agreed that the student should be referred for gifted services. The most frequent reasons for referring the student focused on the student's gifted characteristics, followed by student's advanced reading and skills in language arts.

Nearly one third of the teachers in the LD group did not refer the student for gifted services. The most frequent reasons for nonreferral included the need for more testing information (including IQ data) and the student's deficits causing a mismatch for gifted services. Representative quotes included "I need more testing information—what is his IQ?" and "A child in his circumstances would function better in a structured environment so he could learn to comply with certain behaviors and educational requirements."

General education teachers in the EBD condition. The majority of the general education teachers in the EBD condition (80%) strongly agreed or agreed that the student should be referred for gifted services. Most reasons for referring the student focused on gifted characteristics, the student's need for challenge, and advanced reading and language arts. Although these teachers agreed to refer this student for gifted services, their comments referenced the need for more testing data, the student's deficits, and a potential for mismatch for a gifted program: "Independent and self-motivated learner—difficulty fitting in with regular classroom—very self-critical- IQ would be a very important factor in the qualification process."

For general education teachers in the EBD group who did not agree to refer, their comments focused on the need for IQ data, the students' deficits, or a mismatch between student and gifted program. Representative quotes include "Need more testing" and "There is no severe behavior but problematic behavior. A gifted program would be premature and perhaps add a problem. I'd provide assistance and monitor—counseling for anger management would be appropriate. This student would not be a good fit for gifted program." No teachers in this group mentioned the student's strengths.

Teachers of the gifted in control condition (no disability label). All the teachers of the gifted in the control condition strongly agreed to refer student for gifted services. All comments focused on the student's gifted characteristics and need for challenge: "I teach gifted children—I felt like this scenario was pulled straight from my class. Many of the characteristics parallel the characteristics of gifted children." No comments referenced the student's deficits or the need for IQ data. Teachers of the gifted in the control group focused exclusively on the student's gifted characteristics and need for challenge when the *no disability* label was present.

Teachers of gifted students in LD condition. Most teachers of the gifted in the LD condition (75%) strongly agreed or agreed with referral for gifted services. The most frequent reasons included the characteristics of gifted students as well as the student's need for more challenges: "I have been teaching gifted kids for 15 years. After the first paragraph, I knew it sounded like the majority of my students." For teachers of the gifted who did not refer (29%), reasons focused on student's deficits with mention of a mismatch and the need for IQ data.

Teachers of the gifted in the EBD condition. Half the gifted teachers in the EBD group referred the student for gifted services. Of those, two teachers referenced the student's need for more challenge as a reason for referral, whereas one focused on describing the student's gifted characteristics.

The other half of the teachers did not refer the student for gifted services, because they believed that the student would not do well and would not fit in because of a mismatch: "Many characteristics of the gifted program tend to be competitive. This student would not do well and would not fit."

Special education teachers in the control condition (no disability label). The majority of the special education teachers in the control condition (83%) agreed to refer the student for gifted services. Of the teachers who agreed to referral, most referenced the student's characteristics and the advanced reading and language arts skills as reasons for referral. Even when referring the student for the gifted program, many special education teachers focused on negative characteristics that they believed were indicators of giftedness. For example, one teacher stated, "Poor social skills, resistance to criticism, and perseverating on his interests are all indicators of him being gifted." One teacher in this group did not refer, citing preferred placement: "Prefer placement in the regular class. He could be a tutor for others."

Special education teachers in the LD condition. More than half the special education teachers in LD condition (58%) agreed to refer the student for gifted services, citing the student's gifted characteristics and the need for challenge as reasons: "Agreed because of his

academic level. He seems to need to be challenged and has different learning style." Of those special education teachers who did not refer the profiled student, most focused their comments on needing IQ data or perceiving a mismatch for the student. The student's deficits were also frequently mentioned as reasons. For special education teachers who did not refer, they made no comments discussing the student's strengths or need for challenge. One teacher stated, "There is nothing in this vignette that suggests this student has gifted IQ."

Special education teachers in EBD condition. Five special education teachers were in the EBD condition. Of those, two agreed to refer (40%) whereas three did not (60%). Of those who did refer, one made no comment, and the other focused on the student's needing more challenge. For example, one teacher stated, "Student appears bored in class and might improve performance if challenged more." Of those special education teachers in the EBD group who did not refer, they focused their comments on the mismatch for gifted programs, the need for IQ data, and the student's deficits. For example, one special education teacher stated,

> I disagreed because the vignette stated that he became easily frustrated when angry—when there is pressure for completing work within deadlines—and gifted classrooms not only have a lot of cooperative learning—which he doesn't like—and the pressure of deadlines for him would not be good.

Discussion

The findings of this study clearly indicate that referral recommendations for gifted services are influenced by teacher preparation. We observed significant differences among teacher groups: When compared to teachers of gifted students and general education teachers, special education teachers are least likely to refer students with and without disabilities to a gifted program. This is troubling when one considers that twice-exceptional students are frequently first identified for their disability (Davis & Rimm, 2004) and that many go unrecognized as being gifted. Special education teachers' preparation and practice has a principal focus on identifying and remediating deficit areas; the focus becomes remediation of basic skills (Baum, 1990; Baum, Cooper, & Neu, 2001; Coleman & Cross, 2001; Siegle, 2001) and implementation of curriculum accommodations (Conover, 2002; Ellis, 1997). Although attention to basic skills and provision of accommodations and modifications are important and necessary for students with disabilities, restricted focus in these areas inhibit students' opportunities to use and demonstrate higher order thinking skills. Ellis (1997) noted many of the practices commonly associated with curriculum accommodations for students with disabilities—for example, reducing curriculum content and providing content area classes where content is simplified—and warned that they water down not only the curriculum but also our expectations of students.

The qualitative analysis of special education teachers' comments revealed their focus on students' weaknesses across conditions—even when referring the profiled student for gifted services. Furthermore, special education teachers frequently wanted IQ data to help them determine whether the student was indeed gifted. These findings are consistent with the literature on how teachers narrowly perceive giftedness.

Teachers of the gifted are significantly more likely to refer the profiled student for gifted services, with or without disabilities. Although this makes sense intuitively, what is it about their training that allows them to see beyond a student's disabilities and recognize his or her gifts and talents? In one of the few studies examining differences between teachers with and without graduate training in gifted education, Hansen and Feldhusen (1994) found that teachers with training and practice in gifted education are more likely to foster higher level thinking, place greater emphasis on creativity and thinking skills,

engage in more student-directed learning, use a greater variety of instructional methods and materials, and be less focused on grades. Perhaps specialized training in these areas filters teachers' perceptions of their students so that they first see areas of strength and interest.

In the current study, teachers of the gifted frequently cited the profiled student's gifted characteristics and need for challenge as reasons to refer. These teachers were able to recognize gifted characteristics across all conditions and were much more focused on the student's strengths and interests. Furthermore, these teachers were less concerned about a lack of IQ data to identify gifted characteristics.

In general, teachers with training in gifted education who participated in this study focused on the student's gifted characteristics, strengths, and interests. They were also less concerned about having IQ data on which to base their decision. As a result, they were more likely to correctly identify and refer the profiled student for gifted services; however, as with their general education and special education colleagues, disability labels negatively influenced their decisions to refer the profiled student for gifted services.

All teacher groups were clearly influenced by the disability labels *LD* and *EBD* when making referral decisions for gifted programs. The differences in referral decisions occurred between label groups versus the control group. In other words, teachers were much less willing to refer a student with a disability label for gifted services than an identically described students with no disability label. These findings are consistent with previous research (Bianco, 2005; Minner, 1990; Minner et al., 1987) in which teachers were significantly influenced by particular disability labels and less likely to refer students with disabilities to gifted programs. Baldwin (1999) reminded us that for many teachers, the concept of a student's being gifted and having a disability seems contradictory. The belief that gifted students must have intelligence quotients higher than 130 and excel in all areas creates barriers for the identification of students who, despite demonstrating gifted abilities in some areas, do not meet teachers' expectations and therefore go unrecognized and unidentified as gifted (Baldwin, 1999; Silverman, 2003; Swesson, 1994). Teachers' lowered expectation for students with disabilities apparently prohibits their referral to gifted programs (Swesson, 1994).

Limitations

Several limitations need to be taken into consideration when interpreting the results of this study. First, the sample of participants was not obtained in a random manner and was limited to teachers working in targeted schools (middle and high socioeconomic status) in one south Florida school district. Furthermore, although we asked 41 schools to participate in this study, the sample was limited to teachers working at the 19 schools where school administrators granted permission to conduct research at their school site. Another limitation relates to the vignettes used in this study. We asked teachers to make referral decisions under contrived conditions with limited information. The vignettes described a student with gifted characteristics. If additional information were provided to teachers, such as a more descriptive vignette that accurately portrayed the learning and behavior characteristics of a twice-exceptional student, perhaps this would have altered teachers' referral decisions. Finally, there may have been an interaction between type of teacher and label, but power was low for the interaction (.465); therefore, it might not have been detectable in this sample.

Implications for Practice

These findings hold several important implications for teacher training at the college and university level, as well as the state and local district professional development level. Inadequate teacher training has frequently been cited as a reason for the underidentification of gifted students with disabilities (L. J. Johnson et al., 1997; Silverman, 2003) and other underrepresented groups.

Preservice teacher preparation does not adequately prepare teachers to identify or serve gifted students. Information concerning the unique needs of gifted learners should be part of every teacher's training. Specifically, general education and special education teachers may benefit from training that includes learning the characteristics and needs of gifted students, including an intentional focus on twice-exceptional learners and other underrepresented gifted populations (e.g., culturally and linguistically diverse students). If an additional course cannot be added to already-crowded requirements, then teacher educators in all disciplines (special education, general education, English as a second language, etc.) should consider infusing gifted education topics in their courses through readings, assignments, field experiences, and discussions. Clinkenbeard and Kolloff (2001) offered examples of how this can be accomplished. Additionally, the recently released *Using the National Gifted Education Standards for University Teacher Preparation Programs* (S. Johnson, VanTassel-Baska, & Robinson, 2008) is a comprehensive resource for teacher educators in all disciples to infuse these standards into existing course work and field experiences.

Teacher educators, state departments of education, and local school districts are encouraged to collaborate on creating professional development opportunities and practitioner-friendly resources focusing on twice-exceptional learners. Examples of such work include the teacher resource guides for twice-exceptional learners from the Colorado Department of Education (2007) and the Montgomery County Public Schools, Maryland (2004). Educational planning for twice-exceptional students requires teachers to consider the complexity of students' needs by attending to the range of abilities, interests, and learning challenges. Special education and general education teachers would benefit from professional development opportunities focusing on teaching methods commonly used by teachers of gifted students (e.g., interdisciplinary thematic instruction, the use of mentors, problem-based learning, authentic assessments, strength-based accommodations). Bianco, Carothers, and Smiley (2009) illustrated how strength-based planning can be accomplished for gifted students with disabilities. Such materials and training can help teachers understand the paradoxical nature of twice-exceptional learners. Ideally, this type of training will result in increased identification of gifted students with disabilities and greater opportunities for twice-exceptional learners to participate in advanced studies or gifted programs.

Course work and/or in-service training could help teachers understand a multidimensional view of giftedness and increase awareness and identification of underidentified gifted students, including twice-exceptional learners. Teachers need to be aware of the limiting effect that their personal biases and stereotypes have on their students, particularly when these biases may prohibit some students from the benefits of additional services. Based on the results from this study, this awareness seems particularly suited for special education teachers.

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Notes

1. Data were collected during a time of political unrest in the United States. As a result, many school administrators did not want outside personnel in the schools, which limited the number of schools that allowed us to collect data.
2. Specifically, (a) nature and needs of gifted students, (b) curriculum and instructional, (c) guidance and counseling of gifted students, (d) educating special populations of gifted students, and (e) theory and development of creativity.
3. The *Florida Statutes and State Board of Education Rules* definitions (Florida Department of Education, 2001) for these categories when the data were collected included the following:

Gifted (6A-6.03019): One who has superior intellectual development and is capable of high performance.

Learning disabilities (6A-6.03018): Specific learning disabilities refers to a heterogeneous group of psychological processing disorders manifested by significant difficulties in the acquisition and use of language, reading, writing, or mathematics. These disorders are intrinsic to the individual and may occur across the life span. Although specific learning disabilities may occur concomitantly with other handicapping conditions or with extrinsic influences, the disabilities are not primarily the result of those conditions or influences.

Emotional handicap (6A-6.03016): An emotional handicap is defined as a condition resulting in persistent and consistent maladaptive behavior, which exists to a marked degree, which interferes with the student's learning process, and which may include but is not limited to any of the following characteristics:

1. An inability to achieve adequate academic progress which cannot be explained by intellectual, sensory, or health factors;
2. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers;
3. Inappropriate types of behaviors or feelings under normal circumstances;
4. A general pervasive mood of unhappiness or depression; or a tendency to develop physical symptoms or fears associated with personal or school problems.

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