Perspectives of Members of a State Organization for Gifted and Talented Education in a Western State toward the Identification of Twice-Exceptional Students

Hussain Alamer PhD
Ministry of Education Saudi Arabia
Fatma Alabdullziz PhD
Mohammed Al Mana College for Medical Sciences

Abstract
Twice-exceptionality is the phenomenon of a student who presents both a disability and gifted/talented characteristics. One of the most challenging aspects of this phenomenon is how a disability can mask or hide gifted/talented characteristics; how gifted/talented characteristics might mask a disability; or how both might mask each other. Given the paradoxical nature of twice-exceptionality, it is understandable how twice-exceptional students can easily be overlooked in the demanding day-to-day reality of school, even if teachers have knowledge of twice-exceptionality. The purpose of this study was to examine if teachers, parents, and other professionals could identify twice-exceptionality given specific clues. For this pilot study, the author surveyed professionals in the field of gifted/talented to measure their ability to recognize twice-exceptional characteristics after reading fictional scenarios that represented possible real-life situations. All participants were members of the Colorado Association of Gifted and Talented (CAGT) in Colorado USA. A total of 107 respondents responded to an electronic survey with the highest response rate for any one question of 78. The results indicated that professionals failed to recognize twice-exceptionality because of how well the characteristics were masked. The findings indicated that more needs to be done to inform educators of the phenomenon of twice-exceptionality.

Keywords: gifted education, gifted/talented, special education, students with disabilities, twice-exceptionality.

Introduction
Much has been written about students with disabilities (Gallagher, 1994, Bailey & Rose, 2011) and students who are gifted and talented (Al-Hroub, 2013, Beckley, 1998, Baum, 1990, Brody and Mills, 1997). However, it has only been in the past thirty years that educators and researchers have identified and studied students who are twice-exceptional – those students with both disability and giftedness (Baldwin, Omdal, & Pereles, 2015). Probably the most notable reason it has taken so long to identify and define twice-exceptionality is because of the masking effect each exceptionality has on the other (Baum, 1990; Bianco, 2005; Dare, & Nowicki, 2015; McCallum, Bell, Coles, Miller, Hopkins, & Hilton-Prillhart, 2013). This masking effect makes it difficult even for trained educators to identify twice-exceptional students. It may also be in a large part responsible for why so many twice-exceptional students do not get the services they need to excel in school. It is possible that many thousands of children manage to get through school with below average grades when they might have excelled if their twice-exceptionality had been identified and they had been given the
opportunity to take part in programming designed specifically for their special needs. Low-incidence disabilities and giftedness have not received much attention from researchers, mainly because they don’t occur often (Bailey & Rose, 2011). Learning disabilities (LDs) are considered high-incidence disabilities and are often difficult to recognize. When co-occurring with giftedness, the masking effect is usually even more pronounced and more difficult to identify. For the purpose of this study, LDs and giftedness co-occurring as twice-exceptionality are discussed mainly because LDs and giftedness have been studied separately more often than together. The purpose of this article was to explore the history, characteristics, and definitions of twice-exceptionality and to report on the findings of a pilot survey designed that tested participants ability to identify twice-exceptional students.

History

By the mid-19th and early 20th centuries, with advances in medical and psychological theories and understanding of human development, tragic conditions concerning people with any form of exceptionality began to change (National Association for Gifted Children, 2013). When educating children became more standardized, more concern was developed for how to educate and support children with disabilities and who were gifted and talented. When Terman (cited in Orange, 1977) revised the Stanford-Binet Intelligences Scales in the early 20th century in an effort to study the phenomenon of genius, he hoped that IQ scores would be able to predict adult success, though it could not do that to the degree he had hoped (Becker, 2003; Orange, 1977). Gifted and talented children in general education classes rarely received separate or specialized programming in the school system. For children with disabilities, educational opportunities were only available at specialized institutions (Oakes, Wells, Jones, & Datnow, 2012).

The United States congress passed Public Law 94-142, the Education for All Handicapped Children Act in 1975. The act was later reauthorized, and the name changed to Public Law 101-476 and became known as the Individuals with Disabilities Act (IDEA) (Hardman & Dawson, 2008). IDEA included several mandates allowing all students with disabilities to attend public school, including the right to a free, appropriate public education (FAPE). There was nothing originally in IDEA related to students who were gifted/talented. That was left up to the individual states. However, when students are both gifted/talented and present one or more disabilities, they must be considered using the regulations of IDEA because of the disability, not the giftedness (Yell, 2012). In order to provide appropriate educational opportunity for twice-exceptional students, which are students with one or more disabilities and who are gifted/talented, individual states need to have processes in place to provide for both types of special education. Gallagher (1994) clarified that because it was difficult to identify and define twice-exceptionality, many students were being overlooked within the education system. Willard-Holt, Weber, Morrison, and Horgan (2013) provided research that indicates twice-exceptional students continue to be left out due to the difficulties with identification. The purpose of this study was to examine where the difficulty was found in identifying the characteristics of twice-exceptionality in order to provide more information on how to create the professional development and curriculum for the educators who will be working with twice-exceptional students in general education classrooms.
Exceptionalities Defined

Twice-exceptionality refers to students who present as gifted and/or talented and have an identifiable disability, which is often a learning disability (LD or a specific learning disability (SLD). It is necessary to define disabilities, especially LDs and SLDs, as well as provide definitions for gifted/talented. Even with definitions in place, being able to identify twice-exceptionality continues to be challenging.

Gifted/Talented

Gallagher (1994) suggested that gifted/talented students should be defined as students with special needs, in much the same way as students with learning disabilities are defined. Bailey and Rose (2011) were more specific in using “intelligence, achievement, and potential” as necessary parts of the definition, as well as “achievement in a field that is rare and particularly outstanding” (p. 2). Bianco (2005) also referred to the potential abilities of students and suggested that gifted/talented students required special education programs. Researchers have gone beyond defining giftedness by high IQ ratings (Heller & Feldhusen, 1986). There are still many definitions of gifted/talented. When the United States began mandating free, appropriate education for students with disabilities, rules and regulations covering special programs for gifted/talented students were rare. It has been left up to individual states to define giftedness and to determine if they would require services or not.

Colorado is one state that does offer rules to provide special education for gifted/talented students through the Exceptional Children’s Educational Act (ECEA Rules, 1 CCR 301-8, 2220-R-1.00, et seq., 2013, Sections 2220-R-12.00, 12.01 through 12.08 (2)(e)(v)) and defines giftedness. Colorado has chosen to exceed federal requirements by establishing rules for special educational programs for early childhood education. There is also a separate statute that refers to twice-exceptionality (ECEA Rules, 1 CCR 301-8, 2220-R-1.00, et seq., 2013, §12.01 (12).

Learning Disabilities

Physical disabilities are often visible and noticeable, such as hearing and vision impairment, or mobility disability. However, learning disabilities are often invisible, but no less disabling (Bailey & Rose, 2011). The National Joint Committee for Learning Disabilities (NJCLD) worked to create a more thorough definition of learning disability than the 1975 federal definition. This 1981 definition states:

Learning disabilities is a generic term that refers to a heterogeneous group of disorders . . . . Even though a learning disability may occur concomitantly with other handicapping conditions . . . or environmental influences . . . it is not the direct result of those conditions or influences. (Hammill, Leigh, McNutt, & Larsen, 1988, p. 109).

A learning disability does not always occur alone, but may be hidden by other disabilities, and at times an LD or SLD may be mistaken for behavioral problems. This adds to the confusion faced by educators (Hammill, et al., 1988). There are also times when the LD is masked by giftedness or giftedness is masked by the LD (Baum, 1990), which makes identifying twice-exceptionality much more difficult.
Twice-exceptional

One of the most unidentified, and therefore underserved, student populations today is the group of students who have are gifted/talented and have a disability: twice-exceptional students (Baldwin, Omdal, & Pereles, 2015). There are three main reasons twice-exceptionality is difficult to identify. The first is that a learning disability that is recognized may hide any potential giftedness. On the other hand, giftedness or talent in a student may allow a student to overcome many of the challenges of a learning disability, which would then mask the disability. Finally, the disability and the giftedness mask each other, with each cancelling out the effect of the other, which often allows a student to present as simply being an average student (Bailey & Rose, 2011). This is the masking effect noted by Baum (1990) and Bianco (2005). Beckley (1998) noted that all too often twice-exceptional students who do not have typical learning styles, often are classified as problem students who aren’t learning up to their potential. Bianco and Leech (2010) warned that when educators rely on the disability labeling, it is much more difficult to believe that any student with a disability might also be gifted. Zirkel (2004) suggested that when students are referred for special education programming because of a disability, any giftedness that presents itself is often considered as a chance or accidental occurrence. It is also much less likely that once a student is in a special education program for disability needs, that she will then be referred for special education for giftedness (Beckley, 1998). Throughout these challenges of identifying twice-exceptionality has been a lack of a complete definition. The most recent definitions came from the National Twice-Exceptional Community of Practice, which stated:

Twice-exceptional (2e) individuals evidence exceptional ability and disability, which results in a unique set of circumstances. Their exceptional ability may dominate, hiding their disability; their disability may dominate, hiding their exceptional ability; each may mask the other so that neither is recognized or addressed.

2e students, who may perform below, at, or above grade level, require the following:
• Specialized methods of identification that consider the possible interaction of the exceptionalities
• Enriched/advanced educational opportunities that develop the child’s interests, gifts and talents while also meeting the child’s learning needs
• Simultaneous supports that ensure the child’s academic success and social-emotional well-being, such as accommodations, therapeutic interventions, and specialized instruction.

Working successfully with this unique population requires specialized academic training and ongoing professional development. (in Baldwin, Omdal, & Pereles, 2015, p. 3).

Purpose of the Study

The purpose of this study was to examine if teachers, parents, and other professionals could identify twice-exceptionality given specific clues. In reality, clues to whether a student is twice-exceptional may not be noticeable because of the masking effect mentioned earlier. Research has been conducted about teachers in the field and some of the problems they experience in identifying exceptional students within the general education classroom setting.
Researchers have suggested that more might be done to prepare teachers to be better able to identify twice-exceptionality before they go into the classroom (Baum, 1990, Bianco, 2005). More research needs to be done to examine what processes teachers and others use to identify twice-exceptionality, what gaps are evident in the identification process, and how to better inform teacher candidates who are planning on entering general education classrooms to identify twice-exceptionality.

**Research Questions**

RQ1: When presented with three scenarios of three different, distinct, fictional students whose twice-exceptional characteristics are masked, would the respondent be able to identify twice-exceptionality characteristics?

RQ2: Which combination of characteristics were most easily identifiable as being twice-exceptional?

**Methodology**

For this pilot study, the researcher worked closely with the Executive Board of the Colorado Association of Gifted and Talented (CAGT). The CAGT is a state organization for educators of students who are gifted and talented. The organization serves Colorado and the western region of the United States of America with information and resources for all who are involved with gifted/talented students. Membership is open to educators, parents, and other stakeholders.

This mixed-method study used an electronic survey (Survey Monkey) to collect data. A descriptive design was used to allow for rich, thick analysis of the survey results. The final report was shared with the CAGT Executive Board.

**Participants and Setting**

All participants were members of the CAGT who had some knowledge of twice-exceptionality and who agreed to take part in the study. A form of convenience sampling was used as the participants in this survey research since all participants were all members of the same organization. Participants were sent an email asking for their participation. They clicked on an electronic link stating that their participation was entirely voluntary before they were able to begin the survey. As the survey was all online, participants were able to complete the survey in their own surroundings.

Responses to the demographic questions indicate that the participants were not a diverse group. The majority, 75% ranged in age between 35 – 55 and 89% were female. Most of the participants were college graduates, with the majority, 62% holding master’s degrees. Participants were asked to self-identify race/ethnicity. Of the 63 who self-identified, 48 (76%) identified as White/Caucasian.

**Procedure**

1. Only members of the organization were invited to participate in this survey. Participants were informed that the survey was voluntary, they could quit taking the survey at any time, and no identifying information was ever made available to the researcher.
2. The Executive Director of the organization and two other board members reviewed and approved the interview questions (see appendix A) before the link was sent to the Executive Director.

3. The Executive Director personally sent emails to members. The email contained a brief description of the nature of the research, a word of encouragement to participate and a link to the survey site.

4. The survey site (Survey Monkey) recorded all the responses and analyzed the data. All data has been stored in a Survey Monkey, password protected account available only to the researcher.

5. No identifying information was attached to any of the documents or transcripts. No identifying information was made available to the researcher or Survey Monkey at any time.

Data Collection and Analysis

The survey site compiled the data and issued a report based on the number of responses for each question. Graphs were also available for the researcher to use. Although questions were rated on the percentage of responses for each question, many questions allowed the participant to select “Other” and submit a written response.

For this pilot study, a 21-question survey was created to determine if participants would be able to identify characteristics of twice-exceptionality (See Appendix A). The survey instrument was reviewed by three experts in the field to assure content reliability. Members of the state gifted and talented organization were chosen to test the survey because they are professionals in the field of gifted and talented, and it was assumed that they would be more able to identify twice-exceptionality. The total number of participants responding was 107, however, not all participants answered all 21 questions. For the analysis, a descriptive approach was used rather than a statistical analysis approach. This descriptive approach includes the individual comments respondents made on the survey for a richer narrative of the respondents’ experience with twice-exceptionality.

Results

After responding to the demographic questions, participants read three scenarios of fictional students who may or may not be twice-exceptional (Appendix A). Following each scenario, the same two questions were asked: a) Choose one of the following that best describes the student you just read about, for which there are character specific choices, plus “Other”; and b) What resources or support might you recommend for this student?”

The first scenario was of a seventh-grade boy named Joe who was described as aggressive and argumentative but gets good enough grades on tests to keep from failing. His IQ scores were high, but he showed low academic achievement and problematic behavior. At times he would become excited about something that he was interested in and even argue that the teacher was wrong about some detail or other. His teachers and parents were confused and concerned about his behavior. In this scenario, of the 76 responses (see Table 1), almost 95% answered that Joe should be evaluated for identification in special programming. The remaining 5% selected the other choices.
Table 1.
Responses for scenario one, first question: “Choose one of the following that best describes the student you just read about.”

<table>
<thead>
<tr>
<th>Choices</th>
<th>Percentages</th>
<th># of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joe is a typical problem student.</td>
<td>1.32%</td>
<td>1</td>
</tr>
<tr>
<td>Joe is a troublemaker and because of his delinquency, his chances of succeeding in school are limited.</td>
<td>1.32%</td>
<td>1</td>
</tr>
<tr>
<td>Joe should be evaluated for identification in special programming.</td>
<td>94.73%</td>
<td>72</td>
</tr>
<tr>
<td>Joe is simply not working up to his potential. He could do better if he tried.</td>
<td>2.63%</td>
<td>2</td>
</tr>
<tr>
<td>Total Responses</td>
<td>100.00%</td>
<td>76</td>
</tr>
</tbody>
</table>

Under the response marked “Other” to which respondents could add comments, two suggested that Joe was twice-exceptional and three suggested that Joe was gifted.

For resources, 85.9% said that Joe should be evaluated for gifted/talented programming, 8.97% said that Joe should be evaluated for special needs programming, 3.85% said that Joe should be referred for counseling, and 1.28% responded that no evaluation was needed (see Table 2.)

Table 2.
Responses for scenario one, second question: “What resources or support might you recommend for this student?”

<table>
<thead>
<tr>
<th>Choices</th>
<th>Percentages</th>
<th># of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluated for special needs programming?</td>
<td>8.97%</td>
<td>7</td>
</tr>
<tr>
<td>Evaluated for gifted and talented programming?</td>
<td>85.9%</td>
<td>67</td>
</tr>
<tr>
<td>No evaluation needed.</td>
<td>1.28%</td>
<td>1</td>
</tr>
<tr>
<td>Refer for counseling.</td>
<td>3.85%</td>
<td>3</td>
</tr>
<tr>
<td>Total Responses</td>
<td>100.00%</td>
<td>78</td>
</tr>
</tbody>
</table>

The second scenario concerned the fifth grade Becky who was above average on aptitude and achievement tests and regularly got good grades. However, she did not do exceptional work and she was considered a good student with no problems. Becky seemed shy, she rarely participates, was often distracted or seemed to be daydreaming. When asked direct
questions, she always responded, usually with the correct answer. She never chose leadership roles, spent most of her time alone and reading, and would rather go to the library than attend optional assemblies. She had been diagnosed by a psychologist with an unspecified emotional disorder because of recent displays of hypervigilance and exaggerated startle behavior. In this case, almost 82% of the 76 respondents chose “Becky should be evaluated for identification in special programming.” Responses for the other choices were more evenly distributed than in scenario one (see Table 3).

Table 3.
Responses for scenario two, question one: “Choose one of the following that best describes the student you just read about.”

<table>
<thead>
<tr>
<th>Choices</th>
<th>Percentages</th>
<th># of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Becky is a typical shy student.</td>
<td>5.63%</td>
<td>4</td>
</tr>
<tr>
<td>Becky is an average student who could do better if she can come out of her “shell”.</td>
<td>4.23%</td>
<td>3</td>
</tr>
<tr>
<td>Becky only needs a little more encouragement in the classroom.</td>
<td>8.45%</td>
<td>6</td>
</tr>
<tr>
<td>Becky should be evaluated for identification in special programming.</td>
<td>81.69%</td>
<td>58</td>
</tr>
<tr>
<td>Total Responses</td>
<td>100%</td>
<td>71</td>
</tr>
</tbody>
</table>

When responding to “Other”, no respondents specified twice-exceptionality, however, one respondent suggested evaluation for both special needs and g/t. Four others responded that Becky should “also” be evaluated for g/t, should already have been evaluated for g/t, or g/t programming should also be included, suggesting that the respondents may have accepted the disability label, but would also evaluate for possible giftedness.

In recommending resources or support, a full 67.14% responded “evaluate for gifted and talented programming” and 24.28% respond that Becky should be referred for counseling. The other two choices were evenly split with 4.29% each (see Table 4).

Table 4.
Responses for scenario two, second question: “What resources or support might you recommend for this student?”

<table>
<thead>
<tr>
<th>Choices</th>
<th>Percentages</th>
<th># of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluated for special needs programming?</td>
<td>4.29%</td>
<td>3</td>
</tr>
<tr>
<td>Evaluated for gifted and talented programming?</td>
<td>67.14%</td>
<td>47</td>
</tr>
<tr>
<td>No evaluation needed.</td>
<td>4.29%</td>
<td>3</td>
</tr>
</tbody>
</table>
The third scenario was about a fourth grader named Stan who had just below average grades, was an agreeable student, but had some difficulty with reading and language. He did excellent work on projects assigned, but poorly on examinations. He had trouble memorizing spelling and math, but he loved to create things in his woodworking and art classes. Although he got along well with others, he cried easily if teased. There was a discrepancy between his intelligence scores and his school performance overall and Stan was often frustrated in class. The school psychologist had identified Stan as having a non-specific learning disability. There were only 65 responses to this question (see Table 5). Of those 65, 83.08% said Stan should be evaluated for identification in special programming, 13.85% chose that Stan was probably dealing with test anxiety and could learn skills to deal with this. The final two responses were evenly split with 1.54% each.

**Table 5.**
*Responses for scenario three, question one: “Choose one of the following that best describes the student you just read about.”*

<table>
<thead>
<tr>
<th>Choices</th>
<th>Percentages</th>
<th># of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stan should be evaluated for identification in special programming.</td>
<td>83.08%</td>
<td>54</td>
</tr>
<tr>
<td>Stan is probably dealing with test anxiety and can learn skills to deal with this.</td>
<td>13.85%</td>
<td>9</td>
</tr>
<tr>
<td>Stan is a typical fourth grade student.</td>
<td>1.54%</td>
<td>1</td>
</tr>
<tr>
<td>Stan needs to learn more self-control and how to focus at school.</td>
<td>1.54%</td>
<td>1</td>
</tr>
<tr>
<td>Total Responses</td>
<td>100.01%</td>
<td>65</td>
</tr>
</tbody>
</table>

The “Other” comments included three suggestions to evaluate Stan for twice-exceptionality. Fewer respondents answered the question on what resources or support should be offered. Of the 63 responses, 65.08% responded “evaluate for gifted and talented programming”, while 26.98% responded “evaluate for special needs programming. Only 3.17% said no evaluation was necessary, and 4.76% responded that Stan should be referred for counseling. Given the responses, this scenario presented characteristics that may be more easily identified as twice-exceptional, as asked by the second research question (see Table 6).
Table 6.
Responses for scenario three, second question: “What resources or support might you recommend for this student?”

<table>
<thead>
<tr>
<th>Choices</th>
<th>Percentages</th>
<th># of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluated for special needs programming?</td>
<td>26.98%</td>
<td>17</td>
</tr>
<tr>
<td>Evaluated for gifted and talented programming?</td>
<td>65.08%</td>
<td>41</td>
</tr>
<tr>
<td>No evaluation needed.</td>
<td>3.17%</td>
<td>2</td>
</tr>
<tr>
<td>Refer for counseling.</td>
<td>4.76%</td>
<td>3</td>
</tr>
<tr>
<td>Total Responses</td>
<td>100.00%</td>
<td>63</td>
</tr>
</tbody>
</table>

Interestingly, for some of the participants, the descriptions of the fictional students seemed to resonate with them. This is reflected in some of their comments. For example, for the first scenario, three participants responded:

“Joe is complicated and needs a team of people supporting his needs and having his back.”

“Joe should be evaluated for gifted programming and connected with engaging curriculum and supportive, trained gifted teachers!”

“Joe has a high IQ but may be acting out because it is not properly challenged in school and feels he can't live up to his sisters' accomplishments. May be underachieving to draw attention to self.”

From question eight: “Becky has already been diagnosed with an emotional disorder, I would need to know what kind of treatment/alternate plan has been devised for Becky before recommending further evaluation” and “She needs support from her teachers to keep her interest level high and engage the student in discussions and cooperative groups”. Finally, from question 10, one participant wrote: “Stan would perhaps benefit from alternate forms of assessment- a paper/pencil assessment is not always going to give you the most adequate or informative information”.

The final section of questions concerned participants’ familiarity with the concept of twice-exceptionality. Of the 73 participants who answered question twelve, almost 100% responded having knowledge of twice-exceptionality. Of the 74 participants responding to the question of how to define twice-exceptionality, a full 91.9% responded correctly. The majority of 72 participants correctly chose that a twice-exceptional student should be referred to both gifted/talented programming and special needs programming, while 59.7% responded that a twice-exceptional student should also be referred for counseling. Even with the majority of participants stating familiarity with twice-exceptionality, few were able to identify twice-exceptionality when the masking effect was part of the fictional scenarios.

The majority of 70 participants (77.5%) responded that a student with twice-exceptionality would significantly benefit from a gifted/talented program, while the responses were less certain on how a twice-exceptional student would benefit from a special education
program, where 42.9% responded with “some benefit” and 48.6% responded “significantly”. Only 55.7% of 70 participants believe that they were only “somewhat likely” to be able to identify a student who was twice-exceptional. Participants agreed that more research is necessary as 95.7% responded that more research about twice-exceptionality is either somewhat or very important. Finally, most (84.3%) of the 70 participants who responded wanted to learn more about twice-exceptionality.

As noted, the respondents were all professionals who have a connection with the state gifted and talented organization, which explains their knowledge of the characteristics of twice-exceptionality. However, after being presented with scenarios of twice-exceptionality, only 5% said with some certainty that a student might be twice-exceptional and 12.77% said a student should be evaluated for twice-exceptionality. These were the only participants who were able to clearly identify the special characteristics that were present in students who are twice-exceptional. If a teacher identified a student as only gifted/talented, but who also has identified special needs, problems such as underachieving are likely to occur. When one characteristic masks the other, the whole student is not being served. The responses indicated that even for some professionals, it wasn’t easy to identify students who are twice-exceptional.

**Discussion**

**Findings**

This research was examining the masking effect to determine if respondents could easily identify twice-exceptionality. In response to the first research question, there is evidence that respondents were not able to clearly identify twice-exceptional characteristics of fictional students. In response to the second research question, the combination of characteristics demonstrated by the fictional character of Joe were most easily identifiable as being twice-exceptional. Joe was an older student, which might be one of the characteristics that made the discrepancy between his IQ scores and his academic achievement more noticeable. There were no other characteristics specific to twice-exceptionality that were evident in the other two scenarios.

Although many of the state organization members who participated in this survey were familiar with gifted/talented and twice-exceptionality, there were relatively low numbers who identified the fictional students as twice-exceptional. The low numbers who correctly identified students as twice-exceptional contradicted that over half of the participants stated that they were at least “somewhat likely” to be able to identify students who are twice-exceptional. This indicates that much more needs to be done to educate professionals and teachers about how the characteristics of students who are twice-exceptional are difficult to perceive. It is through studies such as this one that will help bring about that awareness.

**Limitations**

These results are not generalizable to the broader population of educators due to the lack of ethnic diversity of the respondents. The majority of the respondents were female and there was a self-reported familiarity with twice-exceptionality for 100% of the respondents. Also, a power analysis indicates that the sample size is too small to be able to generalize the results.
A limitation may be that with more detailed scenarios, a greater number of participants may have indicated that the scenarios described twice-exceptional students. It should be noted that the respondents were deliberately never given a choice of “twice-exceptional” as a possible response to any question.

Implications

This pilot study has demonstrated that professionals working with gifted and talented programs and who were interested in current trends in exceptionality were aware of twice-exceptionality. Moreover, they were able to identify students who might qualify as twice-exceptional and would know how to refer them for appropriate programming. Even though this group of professionals were knowledgeable, most of them agreed that more research needs to be done about twice-exceptionality and that they want to know more about twice-exceptionality. As professionals, many of them offered helpful suggestions on possible improvements to the scenarios and for the questions.

Recommendations for future research

Recommendation for future research would include using an experimental design testing the efficacy of using different forms of hypothetical stories for training purposes. Another area of research would be the effect of curriculum designed to teach twice-exceptionality with a focus on teacher preparation. Future researchers may want to compare any differences between using real cases with using hypothetical case studies. Although this current study has added to a growing body of knowledge, it is clear that much more research needs to be done.

Conclusion

Even though the participants indicated they had a fairly high level of knowledge regarding twice-exceptionality, the vast majority did not recognize the characteristics of twice-exceptional students when presented in the three scenarios. The scenarios were approved by a panel of four experts in the field as appropriately representing typical case studies. This may indicate that professional development and courses in twice-exceptionality need to include more experience with recognizing characteristics of real or realistic twice-exceptional students. This is a key part of teaching people about twice-exceptionality and points out the need for more tools for the purpose of recognizing, identifying, and serving students with twice-exceptionality.

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[1]. Al-Hroub, A. (2013). Identification of dual-exceptional learners. 1877-0428 © 2013 The Authors. Published by Elsevier Ltd. Selection and/or peer-review under responsibility of Academic World Education and Research Center. doi: 10.1016/j.sbspro.2014.01.169


Appendix A

Survey

The purpose of this survey is to collect data about education and individual understanding of certain student characteristics. This survey has three parts and should take no more than about twenty minutes of your time. Thank you for assisting us by answering the following questions.

Part 1: Demographics

1. How old are you?
   a. Under 25
   b. From 25 – 35
   c. From 35 – 45
   d. From 45 – 55
   e. Over 55

2. What is the highest level of education you have completed?
   a. Bachelor degree
   b. Master’s degree
   c. Doctoral degree
   d. Other (please explain) _____________

3. In which type of locale do you live?
   a. Urban
   b. Suburban
   c. Rural

4. What is your nationality/ethnicity?
   a. I self-identify as: _____________________
   b. I choose not to self-identify

Part 2: Scenario and Survey Questions

Please read one of the following scenarios. After reading the scenario, there will be two questions for you to answer. This process should take about ten minutes to complete.

Scenario 1:

Joe is a seventh grader who is often seen as a problem in school. He displays aggressive behavior, is non-compliant, rarely finishes any assignments, is argumentative and frequently challenges his teachers. He gets just good enough grades to keep from failing, usually based on test scores because he often doesn’t finish in class work or homework. He shows little interest in most academic subjects, but occasionally show excited interest in one or two subjects. At times he gets so excited, he will interrupt the teacher or even argue that the teacher is wrong. This behavior has increased each year that Joe has been in school. Even though his IQ scores are quite high, his academic work is inferior and his attitudes and behaviors are problematic. Recently he was arrested for breaking items in a local market because he was so excited, he was “out of control” and now is considered a juvenile delinquent, an opinion that seems supported by his school record.
In non-academic settings, Joe is boisterous and sometimes hyperactive. He often has trouble playing group games such as football, baseball, and basketball, because he is extremely competitive, and also bossy and dominating. He seems to take unnecessary risks and enjoys the degree of tension this poses.

Joe comes from a large family who are in an upper middle class income bracket. He has two older sisters and four younger brothers, and deeply resents the success of his older sisters in school and in the community where they are seen as delightful young ladies who behave appropriately. Both parents attend teacher conferences, and both parents seem confused and disturbed by their son’s behaviors and attitudes, which they also observe at home.

Questions about scenario 1:

1. Choose one of the following that best describes the student you just read about.
   a. Joe is a typical problem student.
   b. Joe is a trouble maker and because of his delinquency, his chances of succeeding in school are limited.
   c. Joe should be evaluated for identification in special programming.
   d. Joe is simply not working up to his potential. He could do better if he tried.
   e. Other – please be specific: ______________________________________

2. What resources or support might you recommend for this student?
   a. Evaluated for special needs programming?
   b. Evaluated for gifted and talented programming?
   c. No evaluation needed.
   d. Refer for counseling.
   e. Other – be specific: ________________________________

Scenario 2:

Becky is a 5th grader in elementary school who scores well above average on aptitude and achievement tests. She gets good grades in all of her classes, and has done so throughout her school years, but does not appear at the very top of her class and does not do exceptional work. Her teachers consistently rate her as a good student who poses no problems in class or to her teachers.

Becky is exceptionally quiet in the school environment, regardless of the setting. In class, she rarely participates in class discussions, but when asked directly, she will respond, and usually with the correct answer. Although she often appears distracted and seems to be in her own world. When the teacher suspects Becky of daydreaming and questions her, Becky is usually able to respond correctly.

She does not interact with other students, and when she is assigned to a small group to work jointly on a project, she does not initiate any action, but will do whatever the group asks her to do. In other settings in the school, recess, lunchtime, and study hall, she remains alone, often reading a book or daydreaming while other children are playing and talking with each other. Whenever there is an optional special occasion, like an assembly, guest speaker, movie, etc., Becky will ask to go to the library instead, where she looks at books, reads, or doodles in her notebook, usually abstract drawings or designs.
Becky really likes to swing when out on the playground, and will spend much time swinging back and forth when this is available. She engages in no other playground activity, and never actually plays with other children. She is shy and reserved, and two years ago, when teachers became concerned about displays of fear, apprehension, and extreme sensitivity to unexpected sounds or movements in exaggerated startle behavior, she was referred to a psychologist and diagnosed with emotional disorder.

Becky comes from a middle class family; her father is a local minister and her mother is a stay at home mom but is deeply involved with helping her husband in church work. Becky has four younger brothers, the oldest of whom is only two years younger than Becky and has always been in trouble both at school and at home, showing aggressive and violent behaviors and sudden outbursts of rage and temper tantrums. Usually only the mother comes to teacher conferences, and invariably the mother will refer to Becky as her little helper and then change the subject to the troubles she has with her other children, especially the first son.

Questions about scenario 2:

1. Choose one of the following that best describes the student you just read about.
   a. Becky is a typical shy student.
   b. Becky is an average student who could do better if she can come out of her “shell”.
   c. Becky only needs a little more encouragement in the classroom.
   d. Becky should be evaluated for identification in special programming.
   e. Other – please be specific: ________________________

2. What resources or support might you recommend for this student?
   a. Evaluate for special needs programming.
   b. Evaluate for gifted and talented programming.
   c. No evaluation needed.
   d. Refer for counseling.
   e. Other – be specific: ______________________________

Scenario 3:

Stan is a fourth grader in elementary school where he gets average to just below average grades. Although he is a pleasant agreeable child, he has difficulties especially with reading and language. If there are projects associated with a subject or assignment, he does exceptional work, sometimes the best of his entire class, but on academic tests over the subject matter, he does poorly. He has trouble remembering information he is supposed to memorize, such as spelling words and numeric tables such as the multiplication tables, and gets easily frustrated when he is engaged in strictly academic work. However, he takes pleasure and is successful using his hands to create things, and excels in woodworking and art classes. Recently he was awarded first prize in the school poster contest. He is a friendly little boy who gets along well with other children, especially girls, but is sometimes intimidated and teased by other boys because he is not tough and cries easily.

On intelligence scores he tests at above average, but his school performance does not support this level of ability. Sometimes he seems distracted, and often draws on his papers or homework. His drawing ability actually appears to be quite good. He also is easily excited, and shows his emotions readily. He himself does not understand why he has difficulty
remembering, and becomes visibly upset when he fails or does poorly. When teachers referred him for further assessment, the school psychologist identified him as having some learning disabilities and being easily distracted.

Questions about scenario 3:

1. Choose one of the following that best describes the student you just read about.
   a. Stan should be evaluated for identification in special programming.
   b. Stan is probably dealing with test anxiety and can learn skills to deal with this.
   c. Stan needs to learn more self-control and how to focus at school.
   d. Other – please be specific: ________________________________

2. What resources or support might you recommend for this student?
   f. Evaluate for special needs programming.
   g. Evaluate for gifted and talented programming.
   h. No evaluation needed.
   i. Refer for counseling.
   a. Other – be specific: ________________________________

Part 3: Knowledge

Please answer the following questions about your awareness of the topics:

1. Have you ever heard the term of “twice-exceptionality”?
   a. If yes, choose one of the following:
      (1) I’m familiar with twice-exceptional because of my own child.
      (2) I’m familiar with twice-exceptional because I know a child who is twice-exceptional.
      (3) I’ve studied or have experience with twice-exceptionality.

2. Choose the best statement that defines the term “twice-exceptionality”
   a. A student with two or more learning disabilities.
   b. A student with one or more disabilities who also shows some sign of gifted/talented.
   c. A student who is clearly gifted.
   d. A student with hidden disabilities.
   e. None of the above

3. For what programs should a student who is twice-exceptional be referred? (Choose all that apply.)
   a. Special Education
   b. Gifted/Talented program
   c. Counseling
   d. None of the above
   e. Other, be specific ________________

4. Choose one plan you think would work best for students who are twice-exceptional?
   a. Initiating an Independent Educational Plan (IEP)
   b. Initiating a 504 plan
   c. Not initiating a plan
d. Other, be specific ____________________

5. In your opinion, are 504 plans
   a. Underutilized
   b. Used just right
   c. Over utilized

6. How well do you think a student with disabilities who demonstrates some gift or
talent would benefit from gifted programming?
   a. Not at all
   b. Not much
   c. Some benefit
   d. Significantly

7. How well do you think a student with disabilities who demonstrates some gift or
talent would benefit from Special Education?
   a. Not at all
   b. Not much
   c. Some benefit
   d. Significantly

8. How well do you think you would be able to identify a student who is twice-
exceptional?
   a. Not at all
   b. Not likely
   c. Not sure
   d. Somewhat likely
   e. Completely

9. How important is it that twice-exceptionality be more fully researched?
   a. Not at all important
   b. Not important
   c. Neutral
   d. Important
   e. Very important

10. How important is it to you to learn more about twice-exceptionality?
    a. Not at all important
    b. Not important
    c. Neutral
    d. Important
    e. Very important