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*Article*

## **HIGH SCHOOL GENERAL EDUCATION TEACHERS' PERCEPTIONS OF STUDENTS WITH SIGNIFICANT DISABILITIES**

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**Abstract:** Thanks to legislation that supports inclusion of students with significant disabilities in general education, content area teachers need to have appropriate knowledge, training, and self-efficacy to work successfully with these students in their classrooms. In this study, a survey of high school general education teachers investigated their perceived knowledge and capabilities related explicitly to teaching students with significant disabilities. We surveyed a range of subject areas, years of experience, and educational/training attained. The findings support existing, recent research highlighting the challenges of securing a high-quality inclusive learning experience for students with significant disabilities. Implications include the need for training and experience in special education topics for general education teachers to support their ability to teach students with significant disabilities in inclusive settings.

**Keywords:** *inclusion, high school, significant disabilities*

### **High School General Education Teachers' Perceptions of Students with Significant Disabilities in Inclusive Settings**

As they go through their college preparation programs, general education teachers focus on their content area material, classroom management skills, and assessing students. Often, these preparation programs prepare pre-service teachers to work with homogeneous groups (Kent & Giles, 2016). In reality, general education teachers work with a wide variety of students, including students with individualized education plans (IEPs) in their classrooms. More than 6.6 million students in the United States receive special education services to meet their academic and behavioral needs (Blackwell & Rossetti, 2014). Although special education teachers are usually trained as learning & behavior specialists (LBS), general education teachers are also part of the IEP team, attend and contribute to IEP meetings, and are responsible for implementing the IEP (Blackwell & Rossetti, 2014).

The inclusion movement has advocated over the last several decades to include more students with a variety of disabilities in general education classrooms, emphasizing access to the general curriculum. For these placements to be successful, general and special education teachers must collaborate to serve all students, yet this continues to be a barrier for inclusion (Carter & Hughes, 2006). Research has explored the effectiveness of traditional preparation programs for these two fields (Gehrke & Cocchiarella, 2013). Still, many preparation programs train these pre-service teachers separately, each requiring different coursework, different faculty instructors, and different clinical or field experiences. More often than not, this results in general and special education teachers having little understanding of each other's roles. Very few programs to date offer a dual certification, and those institutions typically only offer a dual certification for elementary educators.

Because of this divide in teacher preparation programs, general education teachers often lack the necessary skills to implement evidence-based practices (EBPs) for students with significant disabilities (e.g., autism, multiple disabilities, deafblind, severe disabilities, intellectual disabilities; (Carter & Hughes, 2006) and/or behavioral disabilities (Gable et al., 2012) in an inclusive environment. Most students with more significant disabilities continue to receive instruction in self-contained classrooms (de Boer et al., 2014; Kleinert et al., 2015). However, research supports the benefits of inclusion in general education classrooms using EBPs at the elementary level (Coleman et al., 2015; Smith et al., 2013; Spooner et al., 2014), middle/junior high school years (Browder et al., 2007; Hudson et al., 2016; Knight et al., 2015), at the high school level (Creech-Galloway et al., 2013; Jameson et al., 2012; Kroesch et al., 2020; Yakubova & Bouck, 2014).

Agran et al. (2002) surveyed special education teachers of students with severe disabilities about access to the general curriculum, including inclusion in a general education classroom, whether that access was appropriate, and whether co-planning (i.e., the general education and special education teachers planning curriculum together) occurred. Results indicated that although most special education teachers participated in some degree of inclusion (i.e., co-teaching in a general education classroom), most teachers believed that access to the general curriculum was not

appropriate for students with severe disabilities and had minimal participation in co-planning their students' access to the general curriculum.

## **Research Purpose and Questions**

With so much at stake for students with significant disabilities, we surveyed general education high school teachers on their perception of including students with more significant disabilities in their classes. Specifically, we focused our questions on their perception/self-rating related to IEP and IDEA terminology and the use of EBPs and supports. The research questions we addressed were: (1) How do general education teachers rate their understanding of implementing IEP components for students with significant disabilities who are placed in general education settings? (2) How do general education teachers rate their knowledge about specific disability areas? (3) How do general education teachers rate their knowledge about EBPs and research-based supports for students with significant disabilities?

## **Method**

### **Participants**

We collected names and email addresses of high school mathematics, science, social studies, language arts, and foreign language teachers to identify potential participants. After obtaining IRB approval, the first author and a graduate assistant created a database of participant email addresses and school names using the Illinois State Board of Education (2017) and individual high school websites. We sent an email to potential participants explaining the purpose of the study with a link to the survey using a database of contact information publicly available from the State Board of Education targeting 1,000 general education high school teachers. Participants responded to this invitation by first completing screening questions to ensure they were eligible to participate in the study. We required survey participants to be current high school teachers with at least one year of teaching experience in mathematics, science, social studies, language arts, and/or foreign language. If responses did not indicate that the person met these criteria, they were redirected to a page thanking them for their time. A total of 103 participants (10.3%) submitted surveys.

### **Instrument**

We developed a 35-item survey for this study. The first five items requested demographic information such as subject taught, highest degree earned, and years of experience (see Table 1). Then, participants read a statement (e.g., "I understand the legal requirements of the least restrictive environment in regards to students with severe disabilities") and rate whether they agreed or disagreed with the statement, using a 5-item Likert scale (1 = "Strongly Disagree" to 5 = "Strongly Agree"). Researchers wrote each item to target one of three specific areas regarding students with severe/multiple disabilities: (a) knowledge about IEPs (7 items), (b) knowledge about specific disability areas (using IDEA terminology; 6 items), and (c) knowledge about EBPs and supports to be used in an inclusive classroom (17 items). The survey questions can be found in Appendix A. These topics were not identified in the participant version of the survey. Additionally, we did not provide supplemental definitions, as we wanted to investigate what participants currently knew about these topics.

The original draft of the survey was reviewed for clarity and face validity by faculty colleagues who also had teaching and research expertise working with students with severe/multiple disabilities. Additionally, five high school general education teachers who were not part of the participant pool piloted the original draft. Using feedback from faculty reviewers and pilot teachers, we developed the final 30-item survey. As a reliability measure, we calculated the internal consistency of the final draft for each subgroup of items and the complete survey using Cronbach's alpha. This analysis returned good internal consistency for the full final version ( $\alpha = .93$ ). Participants ( $N=1,000$ ) received the link to the survey in their email with an introductory cover letter informing them of the study's purpose and IRB approval status and specific instructions for accessing and completing the survey online (Select Survey), including the confidentiality statement.

### **Survey Responses**

The informed consent for our survey, per IRB guidance, allowed participants to skip any item or item(s) they chose. Ultimately, this option limited the scope of the data we were able to analyze. Of the 103 completed surveys, 90 participants completed all of the demographic items and the Likert scale self-rating items. As a team, we decided to remove responses from participants who did not complete the entire survey, resulting in a final sample of 90 participants (87.3% of all responses received, but only 9% of the original recruitment pool).

### **Data Analysis**

We collected the response frequencies for each item and each response option on the Likert scale items. We then disaggregated those frequencies along with the three topic areas (IEPs, disability areas, and EBPs) and examined the distribution (i.e., how many responded "Strongly Disagree") and mean response for each item. For reporting purposes, some item response frequencies were converted to percentages.

## **Results**

We analyzed the results of participants' self-ratings about their knowledge about teaching students with significant disabilities within their general education classrooms using Statistical Package for the Social Sciences (SPSS) software, Version 26.

### **Participant Demographics**

We asked participants to tell us the gender they identify with, the content area subject they were currently teaching, years of teaching experience, and the highest degree completed. Out of 90 participants, 62 were female (69%), and 28 were male (31%). Twenty-seven participants were English/language arts teachers (30%), 23 were mathematics teachers (25.6%), 21 were science teachers (23.3%), 13 were social studies/social science teachers (14%), and 6 were foreign language teachers (6.7%). For reporting their years of teaching experience, participants answered one of five options: 0-5 years, 6-10 years, 11-15 years, 16-20 years, or more than 20 years. For

reporting their highest degree earned, participants selected from one of five options: completed bachelor's degree, completed bachelor's degree plus some graduate-level course credits, completed graduate (master's) degree, completed graduate degree plus some doctoral-level course credits, or completed their doctorate (Ed.D. or Ph.D.). For a full breakdown of the participants' demographics, see Table 1.

**Table 1**  
*Participant Demographic Information*

	<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Gender	Female	62	69%
	Male	28	31%
Subject taught	English	27	30%
	Foreign Language	6	6.7%
	Mathematics	23	25.6%
	Science	21	23.3%
	Social Studies	13	14.4%
Educational attainment	Bachelor's degree	11	12.2%
	Bachelor's +	19	21.1%
	Master's degree	20	22.2%
	Master's +	36	40.0%
	Doctorate degree	4	4.4%
Teaching experience	0-5 years	16	17.8%
	6-10 years	19	21.1%
	11-15 years	20	22.2%
	16-20 years	15	16.7%
	20+ years	20	22.2%

*N* = 90

### **Teacher Knowledge about IEP Implementation**

For all of the Likert scale items, teachers had the option of selecting from a range of scores, from 1 = "Strongly Disagree" to 5 = "Strongly Agree." The average response for the seven items in this section of the survey ranged from 1.67 to 2.66, indicating that participants did not feel comfortable with, or understood fully, the various aspects of implementing the IEP of students with significant disabilities. See Table 2 for a complete summary of these responses by survey item and Appendix A for the entire survey questions with mean ratings. Items 11 and 12 referred to two specific supports often found in IEPs of students with significant disabilities: collaborating with related service providers (i.e., occupational/physical or speech therapists) and collaborating with paraprofessionals. Overwhelmingly, participants reported that they did not feel comfortable or knowledgeable about collaborating with these colleagues: 87.7% disagreed or strongly disagreed with the statement about collaborating with related service providers, and

83.3% disagreed or strongly disagreed with the statement about collaborating with paraprofessionals.

**Table 2**  
*Teacher Knowledge about IEP Implementation*

<b>Item #</b>	<b>Topic</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>	<b>Did Not Respond</b>
6	Least restrictive environment (legal requirement)	24 (26.7%)	49 (54.4%)	7 (7.8%)	5 (5.6%)	5 (5.6%)	0
7	Access to general curriculum (legal requirement)	23 (25.6%)	53 (58.9%)	10 (11.1%)	1 (1.1%)	3 (3.3%)	0
8	Access to general curriculum (in practice)	11 (12.2%)	39 (43.3%)	16 (17.8%)	18 (20%)	6 (6.7%)	0
9	Teacher's role in IEP implementation	25 (27.8%)	47 (52.2%)	12 (13.3%)	3 (3.3%)	3 (3.3%)	0
10	Collaboration with special ed.	43 (47.8%)	38 (42.2%)	4 (4.4%)	3 (3.3%)	1 (1.1%)	0
11	Collaboration with RSPs*	39 (43.3%)	40 (44.4%)	4 (4.4%)	4 (4.4%)	1 (1.1%)	2 (2.2%)
12	Collaboration with paraprofessionals	36 (40%)	39 (43.3%)	6 (6.7%)	7 (7.8%)	2 (2.2%)	0
Section means		31.9%	48.4%	9.4%	6.5%	3.3%	1.4%

*Note.* Likert scale responses were 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

*N*=90

\* Related service providers

### Teacher Knowledge about Specific Disability Areas

This subset of survey items asked participants to rate how "capable" they felt of successfully including students with various disabilities. Each item asked about a specific disability area considered a significant disability under IDEA, such as intellectual disability or traumatic brain injury (see Table 3 for a complete summary of these responses by survey item). The average rating for the six items in this section ranged from 2.21 to 2.88, indicating that, on average, participants did not feel capable of working successfully with students with significant disabilities in their general education classrooms. Specifically, many participants indicated that they disagreed that they felt capable of working with students with moderate/severe intellectual disability (71.1% disagreed or strongly disagreed).

**Table 3**

*Teacher Knowledge about Specific Disability Areas*

Item #	Topic	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Did Not Respond
13	Student with a severe disability	17 (18.9%)	42 (46.7%)	16 (17.8%)	10 (11.1%)	3 (3.3%)	2 (2.2%)
14	Student with severe autism	9 (10%)	35 (38.9%)	22 (24.4%)	18 (20%)	3 (3.3%)	3 (3.3%)
15	Student with moderate to severe intellectual disability	17 (18.9%)	47 (52.2%)	12 (13.3%)	10 (11.1%)	1 (1.1%)	3 (3.3%)
16	Student with deafblindness	10 (11.1%)	33 (36.7%)	16 (17.8%)	19 (21.1%)	10 (11.1%)	2 (2.2%)
17	Student with severe traumatic brain injury	7 (7.8%)	26 (28.9%)	33 (36.7%)	15 (16.7%)	7 (7.8%)	2 (2.2%)
18	Student with multiple disabilities	11 (12.2%)	49 (54.4%)	15 (16.7%)	10 (11.1%)	3 (3.3%)	2 (2.2%)
Section means		13.2%	43%	21.1%	15.2%	5.0%	2.6%

*Note.* Likert scale responses were 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

*N*=90

### Teacher Knowledge about EBPs & Research-Based Supports

Many participants reported that they "understood and could implement" several EBPs common to teaching students with severe disabilities. 63.3% strongly agreed or agreed about implementing systematic instruction, and 70% strongly agreed or agreed about implementing constant time delay (see Table 4 for a complete summary of these responses by survey item). Interestingly, over two-thirds of participants disagreed or strongly disagreed that they could

implement the research-based supports or curriculum modifications and accommodations (67.8% and 68.9%, respectively). 77.8% of the participants disagreed or strongly disagreed that they could implement differentiation for students with significant disabilities in their general education classrooms.

**Table 4***Teacher Knowledge about EBPs & Research-Based Supports*

Item #	Topic	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Did Not Respond
19	Systematic instruction	2 (2.2%)	20 (22.2%)	8 (8.9%)	38 (42.2%)	19 (21.1%)	3 (3.3%)
20	Constant time delay	4 (4.4%)	10 (11.1%)	10 (11.1%)	45 (50%)	18 (20%)	3 (3.3%)
21	Progressive time delay	3 (3.3%)	11 (12.2%)	8 (8.9%)	47 (52.2%)	18 (20%)	3 (3.3%)
22	Most to least prompting	6 (6.7%)	12 (13.3%)	13 (14.4%)	41 (45.6%)	14 (15.6%)	4 (4.4%)
23	Least to most prompting	6 (6.7%)	12 (13.3%)	12 (13.3%)	42 (46.7%)	15 (16.7%)	3 (3.3%)
24	Simultaneous prompting	2 (2.2%)	16 (17.8%)	10 (11.1%)	42 (46.7%)	17 (18.9%)	3 (3.3%)
25	Differentiated instruction	17 (18.9%)	53 (58.9%)	10 (11.1%)	3 (3.3%)	4 (4.4%)	3 (3.3%)
26	Curriculum modification	15 (16.7%)	46 (51.1%)	15 (16.7%)	6 (6.7%)	3 (3.3%)	5 (5.5%)
27	Curriculum accommodations	16 (17.8%)	46 (51.1%)	11 (12.2%)	8 (8.9%)	3 (3.3%)	6 (6.7%)
28	Social Stories	7 (7.8%)	10 (11.1%)	13 (14.4%)	40 (44.4%)	15 (16.7%)	5 (5.5%)
29	Partial participation	4 (4.4%)	24 (26.7%)	13 (14.4%)	32 (35.6%)	11 (12.2%)	6 (6.7%)
30	Stimulus prompts	3 (3.3%)	11 (12.2%)	15 (16.7%)	41 (45.6%)	15 (16.7%)	5 (5.5%)
31	Students with AAC <sup>†</sup> devices	7 (7.8%)	18 (20%)	19 (21.1%)	22 (24.4%)	15 (16.7%)	9 (10%)
32	Assistive technology devices	9 (10%)	30 (33.3%)	19 (21.1%)	15 (16.7%)	6 (6.6%)	11 (12.2%)
33	Skill maintenance	2 (2.2%)	13 (14.4%)	15 (16.7%)	36 (40%)	14 (15.6%)	10 (11.1%)

34	Skill generalization	3 (3.3%)	9 (10%)	15 (16.7%)	40 (44.4%)	13 (14.4%)	10 (11.1%)
35	Willing to seek PD <sup>‡</sup> to meet needs of students with severe disabilities	32 (35.6%)	37 (41.1%)	7 (7.8%)	3 (3.3%)	1 (1.1%)	10 (11.1%)
Section means		9.2%	24.7%	13.9%	32.7%	13.1%	6.4%

*Note.* Likert scale responses were 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

*N*=90

<sup>†</sup> Augmentative and alternative communication

<sup>‡</sup> Professional development

## Discussion

General education teachers must implement and understand all components and collaborate as team members in the IEP process (Rotter, 2014). Yet, our respondents perceived themselves as not knowing how to implement an IEP for students with a significant disability. To support general education teachers' understanding of IEPs and the IEP development process, teacher preparation programs must better prepare teachers about their role on the IEP team. This presents a potential opportunity for collaboration with special education teachers at the pre-service level. In many special education preparation programs, teacher candidates participate in mock or simulated IEP meetings; including general education teacher candidates in these experiences could benefit both candidates in their development as pre-service teachers. Additionally, having pre-service general education teachers work with special education teachers in a co-taught environment as part of their clinical experiences could allow the general education teacher to implement modified and accommodated curricula for all students with and without disabilities.

Related service providers (e.g., speech pathologists, occupational therapists, physical therapists) and/or paraprofessionals are a common component of IEPs for many students with significant disabilities. Collaborating with related service providers and/or paraprofessionals is a considerable demand for general education teachers, including training staff members with fidelity. Paraprofessionals, for example, assume many types of duties within a classroom setting (e.g., instructional assistance, Mason et al., 2021). General education teachers need to understand these providers' roles in the student's education and IEP development. Yet, our respondents indicated not feeling comfortable or knowledgeable about collaborating with these individuals. Paraprofessionals could be utilized to implement EBPs (e.g., systematic instruction) and could be a true asset in the classroom (Mason et al., 2021; Walker et al., 2020) when working with students with significant disabilities. General education teachers should receive training on how to best collaborate with these essential professionals in their classrooms.

Based on the principles of applied behavior analysis, systematic instruction is a set of procedures that are often used for students with moderate and severe disabilities or, as we describe

throughout this manuscript, students with significant disabilities (Collins, 2012). Throughout the last several decades, special education professionals have used systematic instruction, a body of EBPs, to teach a variety of academic and functional skills to students with significant disabilities (Britton et al., 2017; Kroesch et al., 2020; Root & Browder, 2019). A surprising finding in our survey results was that the general education high school teachers we surveyed perceived themselves as having a good understanding of systematic instruction and how to implement it for students with significant disabilities. Yet, many (if not most) general education teacher preparation programs require only minimal and broad coursework in special education, often not including systematic instruction or other EBPs for working with students who have low-incidence disabilities. This broad coursework tends to focus instead on working with students with high-incidence disabilities.

The survey participants also indicated a lack of perceived ability to modify instruction to meet students with more significant disabilities in the general education classroom. Research has indicated that while modifying or differentiating instruction may be included in general education courses for pre-service teachers, making modifications that meet the more extensive support needs of students with significant disabilities is typically not covered in those courses. Since there was such a difference in the self-ratings (i.e., between implementing systematic instruction and modifying curriculum), teacher preparation programs and school professional developments should focus on implementing specific EBPs in the general education environment to meet the needs of all learners (Brown, 2020).

### **Implications for Research and Practice**

Since rates of inclusion of students with significant disabilities in general education settings remain low (Kleinert et al., 2015), our results were unsurprising in that participants, for the most part, did not feel that they were adequately knowledgeable or capable of successfully including these students in their classrooms. However, because our survey results indicated that that knowledge did not change much for general education teachers who had taught students with significant disabilities, simply increasing rates of general education inclusion for these students would not likely change these findings. Future research in teacher preparation should examine whether general education teachers are taught about students with significant disabilities. More specifically, research should explore the effect of coursework and field experiences on the preparation of pre-service and novice general education teachers working with students with significant disabilities in their classrooms.

Our survey asked participants to indicate whether they would be willing to seek out professional development opportunities that would help them address the needs of students with significant disabilities in their classrooms. The vast majority (76.7%) of responses to this question were either "disagree" or "strongly disagree." We feel that this requires deeper examination in both general and special education research. Future research could explore the beliefs and attitudes of general education teachers towards the inclusion of these students in general education settings and what influences those beliefs.

General education teachers should have students with significant support needs placed in their classrooms only after adequate training and support in the school system. With more than three-quarters of our study's participants indicating that they were unwilling to seek professional development, we believe schools should be responsible for training and supporting their general education teachers.

### **Limitations**

The results of our survey study should be viewed in light of some limitations and complications. First, to satisfy IRB expectations, we did not require participants to answer all survey items. As a result, many responses were considered incomplete and dropped from the analysis. In addition, the survey itself had some weaknesses. The wording of some questions may not have been clear enough to respondents. Additionally, we suspect many participants did not respond to questions where they did not understand or were unfamiliar with the topic (e.g., the various EBPs in systematic instruction). Our survey aimed to gather teachers' self-perceptions about their knowledge, simply their familiarity with the practices rather than measuring implementation of their knowledge. Future studies should explore teacher knowledge about these issues more deeply. The survey instrument should also undergo a more thorough expert review, piloting, and factor analysis to ensure more substantial validity and reliability in future studies. Finally, the response rate was low, and we should have adjusted our communication with the participant pool to encourage more responses. For example, a scheduled reminder email or communicating directly with school district leadership.

### **Conclusion**

Our study explored the perceived knowledge and self-ratings of knowledge in general education teachers with regard to the inclusion of students with significant disabilities in their classrooms. Most participants reported not having a firm understanding or strong sense of capability in successfully teaching students with significant disabilities within general education settings. We feel that a lack of experience, training, and familiarity with many of the topics and issues involved in teaching students with significant disabilities may have contributed to these results. More research is needed to determine what specific coursework, training, experiences, or combination would best support general education teachers who work with students with significant disabilities.

## References

- Agran, M., Alper, S., & Wehmeyer, M. (2002). Access to the general curriculum for students with significant disabilities: What it means to teachers. *Education and training in mental retardation and developmental disabilities*, 37(2), 123-133.  
[www.jstor.org/stable/23879820](http://www.jstor.org/stable/23879820)
- Blackwell, W. H. and Rossetti, Z. (2014). The development of individualized education programs: Where have we been and where should we go now? *Sage Open*, 1-15.  
<https://doi.org/10.1177/2158244014530411>
- Britton, N. S., Collins, B. C., Ault, M. J., & Bausch, M. E. (2017). Using a constant time delay procedure to teach support personnel to use a simultaneous prompting procedure. *Focus on Autism and Other Developmental Disabilities*, 32(2), 102-113.  
<https://doi.org/10.1177/1088357615587505>
- Browder, D. M., Trela, K., & Jimenez, B. (2007). Training teachers to follow a task analysis to engage middle school students with moderate and severe developmental disabilities in grade-appropriate literature. *Focus on Autism and Other Developmental Disabilities*, 22(4), 206–219. <https://doi.org/10.1177/10883576070220040301>
- Brown, F., McDonnell, J., & Snell, M. E. (Eds.). (2020). *Instruction of students with severe disabilities* (9th ed.). Pearson.
- Carter, E. W., & Hughes, C. (2006). Including high school students with severe disabilities in general education classes: Perspectives of general and special educators, paraprofessionals, and administrators. *Research and Practice for Persons with Severe Disabilities*, 31(2), 174-185. <https://doi.org/10.1177/154079690603100209>
- Coleman, M. B., Cherry, R. A., Moore, T. C., Park, Y., & Cihak, D. F. (2015). Teaching sight words to elementary students with intellectual disability and autism: A comparison of teacher-directed versus computer-assisted simultaneous prompting. *Intellectual and Developmental Disabilities*, 53(3), 196–210. <https://doi.org/10.1352/1934-9556-53.3.196>
- Collins, B. C. (2012). *Systematic instruction for students with moderate and severe disabilities*. Paul H. Brookes Publishing Company.
- Creech-Galloway, C., Collins, B. C., Knight, V., & Bausch, M. (2013). Using a simultaneous prompting procedure with an iPad to teach the Pythagorean Theorem to adolescents with moderate intellectual disability. *Research and Practice for Persons with Severe Disabilities*, 38(4), 222–232. <https://doi.org/10.1177/154079691303800402>
- de Boer, A., Pijl, S. J., Minnaert, A., & Post, W. (2014). Evaluating the effectiveness of an intervention program to influence attitudes of students towards peers with disabilities. *Journal of Autism and Developmental Disorders*, 44, 572–583.  
<https://doi.org/10.1007/s10803-013-1908-6>
- Gable, R. A., Tonelson, S. W., Sheth, M., Wilson, C., & Park, K. L. (2012). Importance, usage, and preparedness to implement evidence-based practices for students with emotional disabilities: A comparison of knowledge and skills of special education and general education teachers. *Education and Treatment of Children* 35(4), 499-519.  
<https://doi.org/10.1353/etc.2012.0030>
- Gehrke, R. S., & Cocchiarella, M. (2013). Preservice special and general educators' knowledge of inclusion. *Teacher Education and Special Education*, 36(3), 204-216.  
<https://doi.org/10.1177/0888406413495421>

- Hudson, M. E., Zambone, A., & Brickhouse, J. (2016). Teaching early numeracy skills using single switch voice-output devices to students with severe multiple disabilities. *Journal of Developmental and Physical Disabilities, 28*(1), 153–175.  
<https://doi.org/10.1007/s10882-015-9451-3>
- Illinois State Board of Education (2017). *Illinois report card*. Retrieved from  
<https://www.illinoisreportcard.com/State.aspx?source=studentcharacteristics&source2=iep&Stateid=IL>
- Jameson, J. M., Thompson, V., Manuele, G., Smith, D., Egan, H., & Moore, T. (2012). Using an iTouch to teach core curriculum words and definitions: Efficacy and social validity. *Journal of Special Education Technology, 27*(3), 41–54.  
<https://doi.org/10.1177/016264341202700304>
- Kent, A. M. & Giles, R. M. (2016). Dual certification in general and special education: What is the role of field experience in preservice teacher preparation? *The Professional Educator, 40*(2). <https://files.eric.ed.gov/fulltext/EJ1120324.pdf>
- Kleinert, H., Towles-Reeves, E., Quenemoen, R., Thurlow, M., Fluegge, L., Weseman, L., & Kerbel, A. (2015). Where students with the most significant cognitive disabilities are taught implications for general curriculum access. *Exceptional Children, 81*(3), 312–328.  
<https://doi.org/10.1177/0014402914563697>
- Knight, V. F., Wood, C. L., Spooner, F., Browder, D. M., & O'Brien, C. P. (2015). An exploratory study using science eTexts with students with autism spectrum disorder. *Focus on Autism and Other Developmental Disabilities, 30*(2), 86–99.  
<https://doi.org/10.1177/1088357614559214>
- Kroesch, A. M., Douglas, K. H., Jozwik, S., Uphold, N. M., & Chung, Y.C. (2020). Teaching American government content to students with developmental disabilities using technology and evidence-based interventions. *Journal of Developmental and Physical Disabilities, 32*, 925-947. <https://doi.org/10.1007/s10882-019-09726-9>
- Mason, R. A., Gunersel, A. B., Irvin, D. W., Wills, H. P., Gregori, E., An, Z. G., & Ingram, P. B. (2021). From the frontlines: Perceptions of paraprofessionals' roles and responsibilities. *Teacher Education and Special Education, 44*(2), 97–116.  
<https://doi.org/10.1177/0888406419896627>
- Root, J. R., & Browder, D. M. (2019). Algebraic problem solving for middle school students with autism and intellectual disability. *Exceptionality, 27*(2), 118-132.  
<https://doi.org/10.1080/09362835.2017.1394304>
- Rotter, K. (2014). IEP use by general and special education teachers. *Sage Open, 4*(2),  
<https://doi.org/10.1177/2158244014530410>
- Smith, B. R., Spooner, F., Jimenez, B. A., & Browder, D. (2013). Using an early science curriculum to teach science vocabulary and concepts to students with severe developmental disabilities. *Education and Treatment of Children, 36*(1), 1–31.  
<https://doi.org/10.1353/etc.2013.0002>
- Spooner, F., Ahlgrim-Dezell, L., Kemp-Inman, A., & Wood, L. A. (2014). Using an iPad2® with systematic instruction to teach shared stories for elementary-aged students with autism. *Research and Practice for Persons with Severe Disabilities, 39*(1), 30–46.  
<https://doi.org/10.1177/1540796914534631>
- Walker, V. L., Douglas, S. N., Douglas, K. H., & D'Agostino, S. R. (2020). Paraprofessional-implemented systematic instruction for students with disabilities: A

systematic literature review. *Education and Training in Autism and Developmental Disabilities*, 55(3), 303-317

Yakubova, G., & Bouck, E. C. (2014). Not all created equally: Exploring calculator use by students with mild intellectual disability. *Education and Training in Autism and Developmental Disabilities*, 49(1), 111–126. [www.jstor.org/stable/23880659](http://www.jstor.org/stable/23880659)

## Appendix A

### Survey of General Education Teachers

Survey Item	Mean Response (SD)
6. I understand the legal requirements of the least restrictive environment in regards to students with significant disabilities.	2.09 (1.03)
7. I understand the legal requirements of access to the general curriculum in regards to students with significant disabilities.	1.98 (.848)
8. I have the knowledge and skills needed to provide access to the general curriculum for students with significant disabilities.	2.66 (1.13)
9. I understand my roles and responsibilities for the IEP of a student with a significant disability.	2.03 (.917)
10. I am comfortable collaborating with special education teachers to include students with significant disabilities in my classroom.	1.67 (.807)
11. I am comfortable collaborating with related service providers (e.g., speech, OT, PT) to include students with significant disabilities in my classroom.	1.73 (.840)
12. I am comfortable collaborating with paraprofessionals to include students with significant disabilities in my classroom.	1.89 (.988)
13. I am capable of successfully including a student with a severe disability in my classroom.	2.32 (1.02)
14. I am capable of successfully including a student with severe autism in my classroom.	2.67 (1.03)
15. I am capable of successfully including a student with a moderate to severe intellectual disability in my classroom.	2.21 (.929)
16. I am capable of successfully including a student with deafblindness in my classroom.	2.84 (1.22)
17. I am capable of successfully including a student with a severe traumatic brain injury in my classroom.	2.88 (1.05)
18. I am capable of successfully including a student with multiple disabilities in my classroom.	2.38 (.963)
19. I understand what systematic instruction is and can implement it in my classroom.	3.6 (1.14)
20. I understand what constant time delay is and can implement it in my classroom.	3.72 (1.06)
21. I understand what progressive time delay is and can implement it in my classroom.	3.76 (1.03)
22. I understand what most-to-least prompting is and can implement it in my classroom.	3.52 (1.14)
23. I understand what least-to-most prompting is and can implement it in my classroom.	3.55 (1.14)

24. I understand what simultaneous prompting is and can implement it in my classroom.	3.64 (1.07)
<i>(Table Continues)</i>	
25. I understand the principles of differentiated instruction and can implement it in my classroom to include students with significant disabilities.	2.13 (.925)
26. I understand how to modify curriculum to meet the needs of students with significant disabilities in my classroom.	2.25 (.950)
27. I understand how to make accommodations to the curriculum to meet the needs of students with significant disabilities in my classroom.	2.24 (.989)
28. I understand what social stories are and can implement them in my classroom.	3.54 (1.16)
29. I understand what partial participation is and could incorporate it in my classroom.	3.26 (1.15)
30. I understand what stimulus prompts are and can implement them in my classroom.	3.64 (1.03)
31. I am comfortable working with a student who uses an augmentative and alternative communication (AAC) device in my classroom.	3.25 (1.24)
32. I can implement assistive technology devices in my classroom to meet the needs of students with significant disabilities.	2.73 (1.13)
33. I understand what skill maintenance is and can help students with significant disabilities achieve this.	3.59 (1.04)
34. I understand what skill generalization is and can help students with significant disabilities achieve this.	3.64 (1.01)
35. I am willing to seek professional development to meet the needs of students with significant disabilities.	1.80 (.848)

*Note.* The first five questions related to demographic information.