Improving Writing: Focus on Elementary-School African American Male Students With a Learning Disability

Svjetlana Curcic and Sara Platt
University of Mississippi

Abstract

This study examined the effectiveness of a writing intervention with three African American male third graders with a learning disability in reading and low writing skills. The participants were instructed in planning, organizing, writing, editing, and revising, supported by dictation and transcription of students' thoughts with the *Dragon Dictation* app. Multiple-baseline data across participants were collected on the following curriculum-based measures: total words written, words spelled correctly, and correct word sequence. Visual data analysis, the percentage of nonoverlapping data, and the post-intervention data indicate large gains on the curriculum-based measures across participants.

Keywords: writing, elementary, learning disability, African American

Writing competence has been recognized as an important, albeit neglected, skill to be mastered during K-12 schooling. For example, in 2003 the National Commission on Writing (2003) drew attention to the neglected "R" (among reading, writing, and arithmetic) and called for a writing revolution even in its report title, *The Neglected "R": The Need for a Writing Revolution.* Almost a decade later, the National Assessment of Educational Progress (NAEP) data showed that one in five 8th- and 12th-grade students in the United States still performed below the basic level in writing (the basic level denotes only partial mastery) (National Center for Education Statistics, 2012).

Disaggregated by race, gender, and ability, data indicate that Black students in eighth grade performed significantly below their White peers: 87% of White students performed at or above the basic level, whereas 65% of Black students performed at or above the basic level (National Center for Education Statistics, 2012). Similarly, 87% of 12th-grade White students performed at or above the basic level, whereas only 61% of Black students performed at or above the basic level. In 2011, the average score for female students in 8th grade was 160 and 140 for male students (on a scale of 0-300), and 157 as opposed to 143 for males in 12th grade. Finally, students with disabilities had an average score of 113 in writing, while students not identified with a disability had an average score of 154 in 8th grade, similar to 12th-grade outcomes: 112 and 153 for students with and without disabilities, respectively (National Center for Education Statistics, 2012).

In short, the NAEP data, known as the nation's report card, support long-standing concerns over African American students' achievement in comparison to their White peers, as well as a discrepancy between male and female student achievement in writing and a discrepancy between the achievement of students with disabilities vs. their nondisabled peers. As a result, a K-12 student who is an African American male with a disability is not likely, at least statistically speaking, to achieve high competency in writing. Also disconcerting is the fact that in spite of an increased focus on evidence-based practices in the field of education, research on writing with African American students, especially those with disabilities, is almost nonexistent (Graham, Harris, & Beard, in press).

The focus of the present study was on improving the writing skills of a small group of African American students with a learning disability (LD) in

Curcic, S., & Platt, S. (2019). Improving Writing: Focus on Elementary-School African American Male Students With a Learning Disability. *International Journal for Research in Learning Disabilities, 4*(1), 59-73. https://doi.org/10.28987/ijrld.4.1. 59

reading. All three participants were males, with low writing skills and speaking in one of the southern U.S. dialects, often referred to as African American Vernacular English (AAVE).

Writing Intervention Research With African American K-12 Students

Recognizing a dearth of writing intervention research with African American students, Graham and colleagues (in press) re-analyzed data from five studies designed as true experiments to test writing, reading, and math interventions for students with special needs or at risk for learning problems. The majority of the participants were African American elementary-school students who lived in poor neighborhoods in the Washington, DC, area. The specific focus of the re-analysis was on the outcomes of African American male elementary students experiencing difficulties in writing. The intervention strategies included teaching advanced planning, self-regulation, revising, sentence construction, spelling, and handwriting. The effect sizes were corrected for small samples.

Graham and colleagues (in press) taught third graders advanced planning and self-regulation strategies for planning and drafting stories and opinion texts, including 32 African American students (9 control students, 11 students in a self-regulated strategy condition, and 13 students in a self-regulated strategy development plus peer support condition). The effect size (ES) for students in the self-regulated strategy development condition was 0.80 for stories and 1.28 for opinion essays, and for self-regulated strategy development plus peer support for transfer vs. control, ES was 1.24 for stories and 0.98 for opinion essays.

In another study, Graham and Harris (Graham et al., in press) individually instructed six fourth-grade African American male students over four sessions to consider the following revision goals to improve their story writing: (a) set the story in a different time, (b) add a new character, (c) change the location, and (d) change when the story occurred. The revising instruction based on goal setting had a positive impact compared to the control condition with ES of 0.97 for quality of revision and ES of 1.70 for meaning-changing revisions.

Another strategy (Graham et al., in press) that improved African American male fourth graders' writing was based on sentence combining. Students were instructed in developing complex sentences, with seven African American male students paired with more skilled fourth-grade writers, and four African American male students assigned to a control group who were taught grammar skills. The sentence combining comprised five units. In each unit, the teacher provided explanation and modeling in using conjunctions, incorporating adjectives and adverbs, and combining adjectival and adverbial clauses. The instruction was followed by paired students practicing combining the sentences first orally, and then in writing. An effect size of 0.31 was obtained for the sentence-combining measure, and the compositions were qualitatively better than the compositions written by the control group (ES = 0.14).

Instruction in spelling and handwriting have both been found to contribute to increased writing competency. In one study (Graham et al., in press), instruction to second graders assigned to a spelling condition (eight African American males) and math instruction (17 African American males) showed that spelling instruction resulted in ES of 0.64 and 0.47 for the spelling treatment on two spelling tests, and ES of 0.96 for sentence writing. While working with first graders on handwriting in another study, Graham and colleagues (Graham et al., in press) instructed the students in two conditions: half of the students were randomly assigned to the handwriting condition (including seven African American boys), and the other half were randomly assigned to phonological awareness instruction (including 10 African American boys). The boys in the handwriting condition made greater gains than the group in the phonological control condition, with ES = 1.01 in handwriting fluency, ES = 0.54 in writing quality, and ES = 0.75 in sentence construction.

In addition to recent work by Graham and colleagues, Fogel and Ehri (2000) taught third- and fourth-grade students who spoke African American Vernacular English (AAVE) (N = 89) to increase the use of Standard English (SE) in their writing. The students were instructed in three conditions: (a) exposure to SE features in stories; (b) story exposure plus explanation of SE rules; and (c) story exposure, SE rule instruction, and guided practices in transforming AAVE to SE. The SE syntactic features taught were possessive "s," past tense "-ed," third-person present-tense singular "s," plural "s," indefinite article, and subject-verb agreement. The students in the third group performed better at posttest on translation tasks and exhibited a higher rate of success (defined as 65% or higher use of SE forms) in their free writing. Also, the students in this group, which included practice as opposed to simply exposure to or explanation of the rules, showed 81% increase in SE features in free writing, in contrast

to 33% of the students in the story exposure-only group and 55% of the students in the story-exposure-and-rule-explanation condition. The outcomes were not disaggregated by gender or ability, but all students showed low writing achievement.

A number of writing intervention studies have included African American students as participants. Yet, the outcomes related specifically to African American students with LD tend to be masked within the means of experimental and control groups, limiting our knowledge of effective interventions for this student population (Gillespie & Graham, 2014; Washington, Patton-Terry, & Seidenberg, 2014). In addition, Rogers and Graham (2008) noted in their meta-analysis of single-subject writing intervention studies that many researchers "failed to adequately describe their participants" (p. 900), which limits generalization about the effectiveness of interventions for specific student populations.

To provide a more nuanced understanding of the potential of writing instruction for students with a specific learning disability (LD), we examined the effects of a writing intervention conducted with three African American male third graders with LD in reading and low writing skills using a multiple-baseline research design.

Theoretical Framework

The theoretical framework of the present study was based on the long line of research on explicit and strategy instruction with students with LD (e.g., Englert, 2009; Fletcher, Lyon, Fuchs, & Barnes, 2019; Graham & Harris, 2009; Schumaker & Deshler, 2009). Explicit instruction with modeling and guided practice, frequent opportunities to practice with feedback, along with visual or verbal prompts, has been discussed from different theoretical perspectives (Graham, Harris, & Santangelo, 2015; Hughes, Morris, Therrien, & Benson, 2017). While some researchers suggest that explicit instruction is aligned with applied behavioral analysis, consistent with positive reinforcement (feedback), examples (stimulus control), and modeling (orientation to stimuli), we believe that explicit instruction provides support in reducing the cognitive load for students who lack prerequisite knowledge or automaticity in the application of skills (Hughes et al., 2017).

We focused the instructional framework on an adapted planning, organizing, writing, editing, and revising strategy (captured by Englert and her colleagues [1991] in the acronym POWER) and literacy activities focused on summarization of texts in reading-writing contexts (Englert, Raphael, Anderson, Stevens, & Fear, 1991; Graham & Hebert, 2010; Graham, MacArthur, & Hebert, 2019). Developing literacy skills in reading-writing contexts seems to be neglected in both reading and writing research in spite of increasing evidence that instruction in the summarization of texts read shows large effect sizes in writing quality (Graham & Perin, 2007; Kang, McKenna, Arden, & Ciullo, 2015; Mason, Snyder, Sukhram, & Kedem, 2006). Graham and Hebert (2010) recommended (a) having students write about texts they read; (b) teaching students the writing skills and processes needed to create texts; and (c) increasing the frequency of student writing. Graham and Hebert's (2010) recommendations are reflected in our writing intervention.

To ensure meaningful student participation, we considered the principles of universal design for learning (UDL), which addresses students' potential problems upfront as opposed to retrofitting instruction (Center for Applied Special Education Technology, 2018). Accordingly, a number of the texts used in the present study were made accessible with a text-to-speech accommodation for reading. To provide support for writing development, we used *Dragon Dictation*, a free app. The app served as a bridge between students' mental processes and transcription of their ideas into written products (Hayes & Olinghouse, 2015).

Research Questions

The study attempted to answer the following questions:

1. Do students who participate in writing intervention focused on summarization of fictional and nonfictional texts improve their writing as measured by the following curriculum-based measurements (CBMs): total words written (TWW), words spelled correctly (WSC), and correct word sequence (CWS)?
2. If students improve in their writing skills during the intervention, are they able to generalize and maintain their writing skills?
3. What are the students' perceptions about instruction upon the completion of the intervention?

Method

We employed a single-subject research design across participants to examine whether the proposed writing intervention was effective compared to the baseline of students' writing (Kazdin, 2010). In multiple-baseline-data-across-participants designs, the intervention is staggered across time, and comparisons are made both between and within data series across participants (Kratochwill, Hitchcock, Horner, Levin, Odom, Rindskopf, & Shadish, 2010). To meet research design standards, a multiple-baseline design must include a minimum of six phases (at least three baselines and three intervention phases) (Kratochwill, Hitchcock, Horner, Levin, Odom, Rindskopf, & Shadish, 2013). If either a baseline or an intervention phase is based on fewer than three data points, an effect cannot be demonstrated, and the study does not meet the single-subject design research standards (Kratochwill et al., 2013).

Visual analysis of level, trend, variability, overlap, immediacy of the effect, and data pattern is used to evaluate "whether there are at least indications of an effect at three different points in time" (Kratochwill et al., 2013, p. 32). While there is no consensus on the preferred method of computing an effect size beyond visual inspection of data, a number of methods have been proposed (Rodgers, Lewis, O'Neill, & Vannest, 2018). To calculate an effect size in the current study, we used the widely applied method of calculating a percentage of nonoverlapping data (Rodgers et al., 2018).

Setting

The study was conducted in a public elementary Title I school situated in a rural area of the southeastern United States (Title I schools enroll large numbers or percentages of students from low-income households who may be at risk academically). At the time of the study, the school had 457 students in elementary grades K-4 who came from two small towns. Four percent of the students had individualized education programs (IEPs), and 4% were English language learners (ELLs). Further, 95% of the students received a free or a reduced-price lunch. Finally, at the time of the study, 10% of the student population was homeless, predominantly defined as not having a permanent address and living with friends or extended families. Demographic school data are presented in Table 1.

Table 1
School Racial Demographics

Race	Percentage
African American	81
Asian/Pacific Islander	0
Hispanic	4
Native American	0
White	15

All instructional sessions took place in a resource room, with three African American students with LD scheduled to work with a special education teacher during the fourth period of the school day. We also occasionally worked with a fourth student whose reading and writing levels were significantly below those of his third-grade special education peers. According to his special education teacher, this student was receiving an extra 30-minute instruction, with a different schedule on some days. Due to inconsistent instruction, we did not include the outcomes of this student in the present study (he did show progress, however).

Participants

The three third-grade participants received services in the special education resource room for approximately 35 minutes per day, but also regularly participated in a general education English language arts class. Demographic information about the students and their achievement levels in reading on the standardized test for the assessment of reading (STAR) is provided in Table 2 (all names are pseudonyms). Informal testing on the Graded Word List indicated that John read independently at the first-grade level; Sam read independently at the kindergarten level, and Kofi read independently at the first-grade level.

Two of the participants (Sam and Kofi) were diagnosed with an LD in reading in the third grade based on the response-to-intervention (RtI) process. They joined the school from another district with various test results in their files, such as Oral and Written Language Scales (OWLS-II), Woodcock Johnson Tests of Achievement III (Kofi), Learning Accomplishment Profile-Diagnostic Standardized Assessment (LAP-D, and Battelle Developmental Inventory-2 (BDI 2) (Sam). Based on universal screening, RtI (16-week outcomes on CBMs after Tier 2 and Tier 3, and initial instruction in general education setting), they were diagnosed with LD.

Table 2
Students' Demographics, IQ, and STAR[a] Reading Achievement

Student	Age	Gender	Race	Special Education	IQ	STAR Score
John	9.6	M	AA[b]	LD	87	145
Sam[c]	10.7	M	AA	LD	Not tested	197
Kofi	9.9	M	AA	LD	Not tested	233

[a]The STAR reading assessment is used in the school as the universal screening tool three times a year. The expected STAR reading benchmark was 352 at the time of the study; [b]African American; [c]Sam was retained in kindergarten.

The third student (John) was diagnosed with LD in reading based on a discrepancy between his IQ performance and reading achievement on tests conducted by the school district psychometrist, following the RtI process.

A discrepancy between performance on an IQ test and an achievement test in reading, writing, or math is a long-established practice for identifying students with a learning disability in the United States (Zumeta, Zirkel, & Danielson, 2014). Thus, the IQ-achievement discrepancy between an overall IQ score and an achievement score in a particular domain such as reading, writing, or mathematics is assumed to indicate an unexpected underachievement, reflecting a specific learning disability. The specific cut-off scores vary within and across the country (Dean & Burns, 2002).

Debates surrounding the merit of using a discrepancy model led to establishing the RtI as another means of identifying a learning disability (e.g., Kavale, Spaulding, & Beam, 2009; Scanlon, 2013; Tannock, 2013; Zirkel, 2017). When the Individuals With Disabilities Education Act (IDEA) was reauthorized in 2004 (United States Code, 2006), it included statutory language related to identification of a learning disability (Zumeta et al., 2014). States are still required to establish criteria for a learning disability identification, but those criteria neither mandate nor exclude the use of the discrepancy model. Instead, additional criteria permit the use of another process to evaluate a child's learning disability that is based on his or her response to scientific, research-based intervention (Zumeta et al., 2014). Although the IDEA does not specifically use the term *RtI*, it is widely used in the U.S. to denote such a process.

Experimental Design

We employed a single-subject multiple-baseline design across participants (Kazdin, 2010; Kratochwill et al., 2010), with instruction in the written summarization of fictional and nonfictional texts. Assessment included the following dependent variables: total words written (TWW), words spelled correctly (WSC), and correct word sequence (CWS) (Deno, 2003; Deno, Marston, & Mirkin, 1982; Parker, Tindal, & Hasbrouck, 1991). We also included writing in response to a prompt as an additional (albeit non-experimental) indicator of possible improvement in writing (Walker, Shippen, Alberto, Houchins, & Cihak, 2005). In addition, we administered three subtests of the Test of Written Language (TOWL-3; Hammill & Larsen, 1996), Contextual Conventions (CC), Contextual Language (CL), and Story Construction (STC), to assess writing outcomes before and after the intervention.

Dependent variables. To measure the students' potential improvement in writing, we employed curriculum-based measurement (CBM). Developed by Deno and colleagues (Deno et al., 1982; Deno, 2003), CBM provides an alternative to traditional writing assessments. Progress monitoring of writing with CBMs is recommended, especially for students with writing difficulties, as a tool to examine writing growth over time (Espin, Weissenburger, & Benson, 2004).

Dependent variables such as total words written (TWW), words spelled correctly (WSC), and correct word sequence (CWS) have been established as valid and reliable measures of overall writing performance for elementary students with a learning disability as well as students without disabilities (Deno et al., 1982; Parker et al., 1991; Tindal, 2013). TWW indicates the total number of words written regardless of spelling; WSC is used to measure the number of words spelled

correctly in the writing sample; and the CWS measure is used to evaluate whether two adjacent words are grammatically, syntactically, and orthographically correct. For example: ^He^is^going^to^the^race^. = 7 correct word sequences, while another example with errors in writing indicates: ^He^is gong to rase. = 2 correct word sequences.

Pretesting and Instructional Materials

Pretest. Students were pretested on the STAR reading assessment used as a universal screening tool in the participating school at the beginning, middle, and end of the school year. Table 1 displays the students' reading scores on the STAR assessment at the time of the study. Pretest results related to writing are presented in baselines in Figures 1, 2, and 3, including data points across participants for Probe 1 and the percentile ranks before the intervention on TOWL-3 (see Table 5).

Instructional materials. Given the increased attention to reading and writing about informational texts in addition to narratives and stories in the Common Core State Standards (Graham & Harris, 2013; National Governors Association & Council of Chief State School Officers, 2010; Shanahan, 2015), we selected a series of short informational and fictional texts that students were to summarize in writing. Informational texts used in the present study addressed the state's science standard related to the personal perspective of science. The texts describe electrical safety, illustrated with various characters. For example, the bride of Frankenstein is depicted putting a fork into a toaster, young Dracula standing in a puddle of water with a hair dryer in his hand, and young Igor flying a kite near a telephone pole. Thus, the characters are depicted in situations to which the students could relate their own life experiences (e.g., do not lift toast out of a toaster using a fork). The students were instructed to summarize for other third graders important points about electrical safety. (For the text samples and characters, see Frankenstein's Lightning Laboratory [2017] at The Atoms Family exhibit at the digital Miami Science Museum: http://oldintranet.puhinui.school.nz/Topics/Science/AtomFamily/frankenstein/index.html.)

The students also summarized fictional texts based on Greek mythology designed as digital books (Source: www.starfall.com, section: *I'm Reading* [Starfall Education Foundation, 2017]). The following stories may be found under "Greek Myths": The Maze, Wings, Pegasus, Midas Touch, The Woman Runner, and The Wooden Horse. The layout of the digital books consists of short texts presented on the right-hand page of the book, with a built-in text-to-speech function providing easy access to information. The characters in the story are presented on the left-hand page. Clicking on the left page sets the characters in motion to illustrate the scenes in the text with added animation.

We also employed a free app, *Dragon Dictation*, as an instructional tool. Nuance Communications, a computer software company, developed the *Dragon Dictation* app based on the computer software *Dragon Naturally Speaking*, which provides speech-to-text features. While the *Dragon Speaking Naturally* software is adaptive (and not free of charge), the *Dragon Dictation* app does not include adaptive features with the student participants, but accurately records dictations provided by the authors of the present study. To illustrate, a student would say: /ma/ /næm/ /z/ … John, while the instructor would pronounce the same sentence as: /mai/ neim/ /iz/… John. We therefore recorded students' thoughts, and their recorded thoughts served as their first drafts.

General Procedures

Upon obtaining approvals from the school principal, the district school board, and the University of Mississippi Institutional Review Board, as well as parental consents and students' assent, we conducted intervention sessions in the special education resource room, three times a week for about 30 minutes each, from the end of January to the beginning of May. While we display graphs with the outcomes measured weekly based on their final drafts (Figures 1 through 3), the total number of intervention sessions ranged from 23 to 24 per student.

Baseline. The baselines were established by engaging each student in reading and summarizing short texts starting with electrical safety and alternated with Greek mythology stories. Baselines were analyzed across TWW, WSC, and CWS to establish a starting point for the intervention for each student. By convention, at least three data points are required to establish dependent measure stability (Kazdin, 2010). We started the instruction after three data points because those did not show variability, and had a downward trend. The first participant achieved an increase of above 20% of his baseline mean across dependent variables prior to

implementation of intervention with the second participant; the same criterion was applied to the beginning of the intervention with the third student (Wolery & Dunlap, 2001).

Probes. The first probe was administered before the beginning of the intervention; the second probe was administered at the midpoint of intervention, and the final probe upon the completion of intervention. Because the students read texts in different genres, it was of interest to see whether writing to open-ended prompts would show similar or different trends in comparison to data collected during other phases. The first and the third probes were modeled after Fuchs and Fuchs (2007). We inserted the second probe because it snowed in a state (Mississippi) where children seldom experience snow. It seemed that the probe related to a "snow day" (Probe 2) would constitute a good starting point for narrative writing, implied in the following probes:

(1) One day I entered a dark cave …
(2) When I woke up yesterday morning …
(3) One day I was lost in a forest …

We made sure that we started and ended with similar probes (e.g., "One day …") as opposed to beginning or ending with a probe leading to an event (snow day) that our students actually had experienced (Probe 2: When I woke up yesterday morning …).

Intervention

The intervention was characterized by three main features: (a) explicit instruction in process writing based on the POWER strategy (Englert et al., 1991) through the steps of planning, organizing, writing, editing, and revising; (b) student dictation of the text summarization was recorded on the *Dragon Dictation* app on iPads; and (c) the summarizations recorded on iPads serving as first drafts to be written, edited, and revised, on computers. All students had received instruction in keyboarding and were proficient in writing electronic texts.

The first author/instructor instructed the students in the writing task: The task was for students to learn about electrical safety and to summarize the main points for their third-grade peers. The students also were instructed to read and summarize digital books to be recommended to their teacher. While the first author worked individually with one student at the very beginning, the second author reviewed with the students their previous and current work. The classroom was relatively large, with few students, four computers, and four iPads; consequently, instruction with one student did not interfere with working with other students and vice versa.

After completing the baseline, the students were individually instructed in different texts they were about to read and summarize through the intervention steps as follows.

Modeling.

1. In the first step, the instructor modeled the summarization of the text by first reading the text, followed by think-aloud: "In order to summarize the text, we need to identify the main ideas. The question is: What can we learn about this text on electrical safety? For example, what is the Bride of Frankenstein doing wrong? It looks like she is trying to get her toast out of the toaster with a fork. Is that wrong? I think – yes. Because the fork can take electricity from the toaster and shock her, this is not a good idea. What are the suggestions here on what to do if something is stuck inside the toaster? It says: We need to unplug it and ask parents or adults for help. The main message is here in bold letters: 'Don't stick anything metal inside a toaster or any electrical appliance'."
2. The second step was to review the adapted POWER think sheet consisting of the following steps: plan and record your thoughts on the *Dragon Dictation* app; organize; write; edit, revise. (The instructor reviews the steps.)
3. The third step was to model planning for summarization (planning for a title, introduction, main ideas, and conclusion). The instructor plans a title: "Electrical safety." Introduction: "We need to be careful with electrical appliances." **[**What are some of the main ideas?**]** "For example, if a piece of toast is stuck in a toaster, we should not try to get it out with a fork. If we insert something metal in electrical appliances, we might get an electrical shock. We should first of all unplug the toaster, or try to get help from our parents or other adults." Conclusion: "We should not stick anything metal inside a toaster or any other electrical appliance."
4. The fourth step involved recording the thoughts on the *Dragon Dictation* app on an iPad.
5. The fifth step was to read the recorded thoughts, plan for text organization (modeling through think-aloud), and start writing the second draft on the computer. The instructor changes the third and the fourth sentence to: "It is dangerous to insert a fork into a toaster. It is also dangerous to insert other metal pieces into electrical appliances be-

cause the electricity might shock us. The best thing to do is to unplug the toaster. If we are not sure how to do that, we call our parents or other adults for help."

6. The final step was to edit and revise the text (e.g., the instructor checks the mechanics and usage of language: checks spelling, verb-tense agreement, subject-verb agreement).
7. The instructor examines the overview of the text organization and whether anything is in need of revision.

Instruction. With guided practice to check whether a student understands the steps on the POWER sheet, the procedure involved in recording on the *Dragon Dictation*, and questions to guide summarization, organization, edits, and revisions, instruction consisted of the following steps:

1. The student reads the text.
2. The student reviews the adapted POWER sheet.
3. The student plans the summarization of the text.
4. The summarization is recorded on the *Dragon Dictation* app, making the student's thoughts about the text" under construction"visible to him.
5. The student reads his own thoughts and plans for organization of the text (e.g., plans for introduction, main ideas) before engaging in writing on the computer.
6. The student writes the summary of the text on the computer.
7. The student edits and revises the text and reviews the final draft.

As the *Dragon Dictation* app did not adequately record the students' thoughts, the instructor recorded their thoughts (recorded 99% correctly; a word not recorded adequately was *Icarus*). The students' thoughts were recorded as presented sentence-by-sentence. The students seemed excited and pleased upon seeing their thoughts recorded and spelled correctly. The students never copied the recorded texts verbatim (as indicated by their spelling mistakes in their drafts), but used the recorded text as a basis for planning their summaries. No time limit was imposed on students' writing, but the students never wrote for more than 5 to 8 minutes. By the time reading and recording were completed, there was not enough time to finish all of the steps of the summarization writing task (e.g., editing and revising), the same day, so the activities were resumed in the next sessions.

Post-intervention/maintenance. During the post-intervention and the maintenance session three weeks after the intervention, the students wrote without the help of the *Dragon Dictation* app and the POWER instructional steps, as was the case during the baselines. The first pre-intervention and the last post-intervention summarizations were based on the informational texts about electrical safety. Following the pattern of alternating the texts, as during the baseline, the students summarized a story during the maintenance session. They also wrote in response to a final narrative prompt (Probe 3, very similar to Probe 1). Finally, we evaluated the students' writing based on three subtests of the TOWL-3 standardized test for writing.

Fidelity of Treatment

To make sure that the intervention was delivered as designed, the following procedures were implemented (Horner, Carr, Halle, McGee, Odom, & Wolery, 2005): (a) before the start of the study, the authors reviewed all the instructional steps in detail to establish the same level of understanding of the steps; (b) the authors met before and after each instructional lesson to debrief; and (c) the authors discussed anticipated and unanticipated events (e.g., school events that might interfere with the instruction).

When the special education teacher was present in the classroom, she was not involved in instruction, but served as a fidelity treatment assessor. We instructed her in the design of the study, for example, the necessity of establishing baselines before starting the intervention. Using a fidelity checklist, the teacher and the second author conducted fidelity checks for 20% of the baselines and 25% of the intervention sessions across each participant. The inter-assessor reliability was established at 100% across baselines, and 98% for instructional phases across participants.

Results

In the following, we first provide the visual results of the data. Second, we report the percentage of nonoverlapping data (PND). Third, we report the baseline means, post-intervention, and maintenance data. Fourth, we report the results of writing to a prompt. Fifth, we present the pretest and posttest results on the standardized writing test TOWL-3.

Visual Results

We provide the visual results in Figures 1 through 3. As represented by the post-intervention data and the maintenance data gathered three weeks after the instruction, the writing skills of all three students improved. The probes also indicate an upward trend. Although there are variations within the outcomes, the trend data clearly indicate systematic growth on TWW, WSC, and CWS. (Note one less data point for Kofi, who was absent during the fourth week of instruction.)

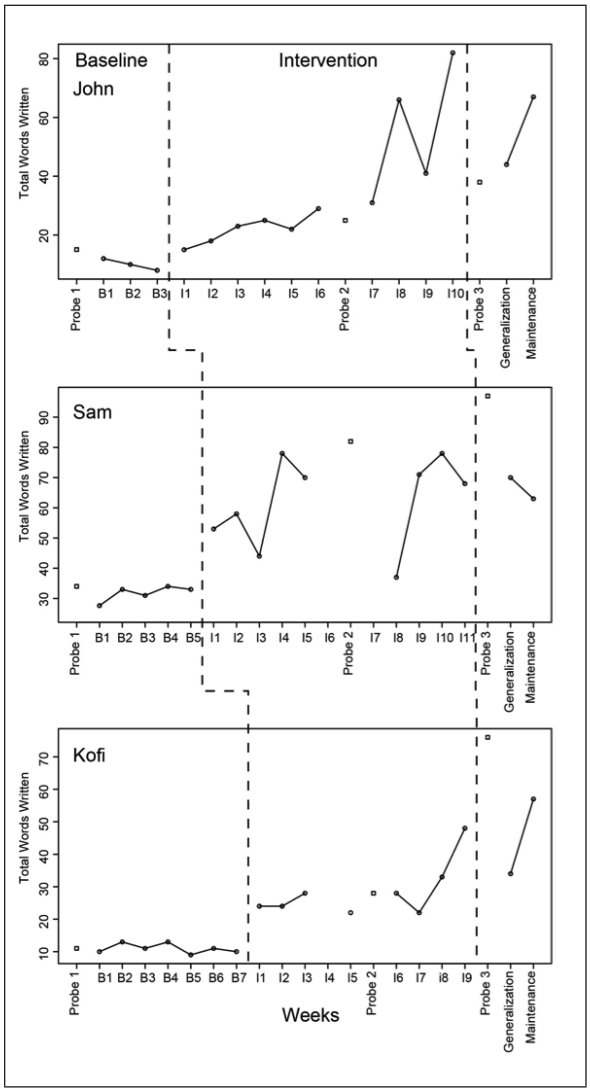

Figure 1. Total words written (TWW).

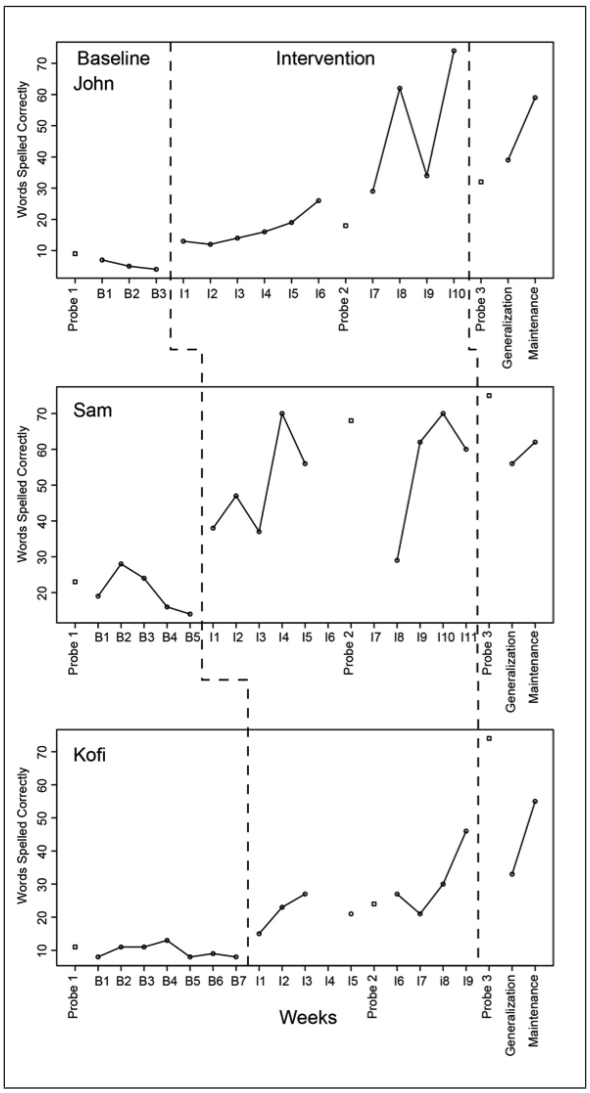

Figure 2. Words spelled correctly (WSC).

Percentage of Nonoverlapping Data (PND)

PND is often used to evaluate the effects of an intervention in single-subject research (Campbell, 2004; Scruggs & Mastropieri, 1998; Scruggs, Mastropieri, & Casto, 1987). Scruggs and Mastropieri (1998) suggested that PND scores of >90% represent highly effective interventions, between 70% and 90%, moderately effective to effective interventions, and between 50% and 70%, questionable interventions. The highest data point in the baseline as well as the percentage of points during the intervention exceeded this level. The analysis of PND on total words written (TWW) indicates that the intervention was highly effective for all three students (100% exceeding baseline); the analysis of words spelled correctly (WSC) indicates that the intervention was also highly effective for all three students (100%);

and, the analysis of correct word sequence (CWS) indicates that the intervention was effective, ranging from 89% for the third student, Kofi, to 100% for the other two students.

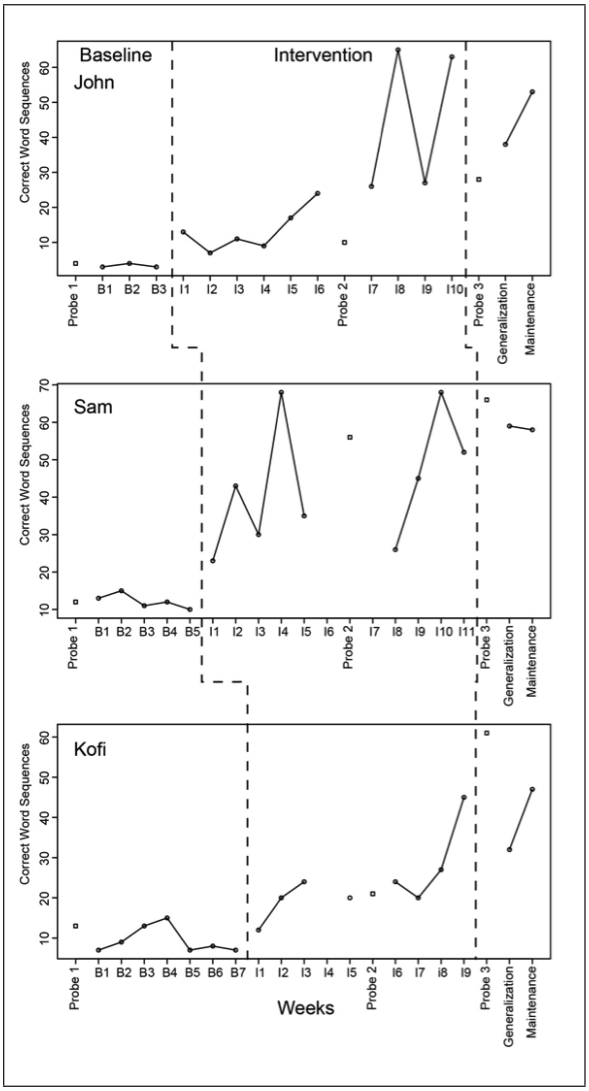

Figure 3. Correct word sequences (CWS).

Baseline Means, Post-Intervention, and Maintenance

In Table 3 we report the means (*M*) of the baseline scores, post-intervention data, and maintenance data three weeks after the intervention across the participants.

Writing to a Prompt

Table 4 presents the writing scores on CBMs across three writing prompts administered at the beginning of the study, at the midpoint of the study, and upon completion of the intervention.

TOWL-3 Results

All three students showed gains on the posttest of Contextual Language (CL); two students showed gains in Story Construction (SC), and two students' scores improved on Contextual Conventions (CC) at posttest. The results expressed in percentiles are summarized in Table 5.

Social Validity

The instructor conducted a brief open-ended interview with each student individually at the end of the intervention. The first question was: "Do you think you have improved as a writer?" The students reviewed some samples of their writing, and it seemed clear to them that their writing improved, as each responded with a resounding: "Yes!" When probed further (e.g., "Why do you think so?"), the students specifically responded as follows:

Kofi: "Now I write ... in more complete sentences." When asked the same question, John seemed impressed by how much he had written: "Look how much I wrote!" During the instruction, John asked for copies of his writing to share those with his father; by comparison, at the beginning of instruction his writing consisted of one sentence.

When asked what they thought helped them to become better writers, the students seemed to appreciate seeing their ideas spelled correctly on the *Dragon Dictation* app. For example, John noted: "You can put your ideas on *Dragon*, and it shows you the words and it shows you how to spell it. I liked *Dragon* the best." Also, Kofi: "*Dragon* with planning **[**POWER sheet**]** was helpful;" and "*Dragon* was kind of fun … It teaches you how to write." Similarly, when asked explicitly whether practicing writing with the *Dragon Dictation* helped, Sam responded: "Yes, it shows you the words, and you can put your ideas on *Dragon*."

We also asked the special education teacher to share her impressions of the students' writing skills. After reviewing the students' writing samples, she observed that their writing had improved considerably. She noted that based on her observations, the students seemed to enjoy animated digital books. She also commented that the students seemed to enjoy working with the *Dragon Dictation* app.

Table 3
Baseline Means, Post-Intervention, and Maintenance Across TWW, WSC, and CWS

	Baseline			Post-Intervention			Maintenance		
Student	TWW	WSC	CWS	TWW	WSC	CWS	TWW	WSC	CWS
John	10	5.6	3.3	44	39	38	67	59	53
Sam	30.8	20.8	13.8	70	56	59	63	62	58
Kofi	11.4	10.1	9.7	34	33	32	57	55	47

Note. TWW = total words written; WSC = words spelled correctly; CWS = correct word sequence.

Table 4
Students' Performances Across Three Probes

	Probe One			Probe Two			Probe Three		
Student	TWW	WSC	CWS	TWW	WSC	CWS	TWW	WSC	CWS
John	15	9	4	25	18	10	38	32	28
Sam	34	23	13	82	68	56	97	75	66
Kofi	11	11	13	28	24	21	76	74	61

Note. TWW = total words written; WSC = words spelled correctly; CWS = correct word sequence.

Table 5
TOWL-3 Pretest and Posttest Outcomes Measured in Percentiles

	Pretest %tile			Posttest %ile		
Student	CC	CL	SC	CC	CL	SC
John	16	9	37	63	37	63
Sam	9	1	5	63	25	37
Kofi	50	25	37	50	63	37

Note. CC = Contextual Conventions; CL = Contextual Language; SC = Story Construction.

Discussion

The purpose of the present study was to develop students' writing skills in a reading/writing context. Based on research by Englert and her colleagues (e.g., Englert, 2009; Englert et al., 1991) and Graham and Hebert (2010), we developed a writing intervention focused on explicit instruction, process writing, and dictation. Designing instruction with the *Dragon Dictation* app allowed students' thoughts to become visible to them and made writing less challenging, especially in terms of transcription and text organization. Transcription skills are considered important for young writers (Hayes & Olinghouse, 2015; McMaster, Du, & Pétursdóttir, 2009). Graham and his colleagues (e.g., Gillespie & Graham, 2014; Graham et al., 2015) reported that dictation is an effective intervention in writing for students with LD. The present study confirmed the effectiveness of dictation in writing instruction for the three African American male third graders with LD.

With explicit instruction, modeling, and feedback, the students improved from writing one incomplete sentence at baseline to writing one or two short paragraphs at post-intervention. All three students significantly improved across the CBM measures of total words written (TWW), words spelled correctly (WSC), and correct word sequence (CSW), as indicated by a visual inspection of data. Based on an analysis of the percentage of nonoverlapping data, the effect sizes ranged from a moderate PND of 89% to a large PND of 100%.

The intervention phase shows some variability toward the end of the instruction. Some variability might be related to student absences (e.g., Kofi). Also, the students seemed to perform better on summarizing stories they read than on informational texts. Digital stories had built-in text-to-speech function providing easy access to the texts read. The students seemed to appreciate the added animation in the digital books, which might have increased their motivation to participate in their writing tasks. It also seems, based on their writing to three narrative prompts,

that the students were able to transfer their writing summarization skills to writing narratives. Finally, all three students showed gains on the standardized TOWL-3 writing test for the Contextual Language (CL); two students showed gains in Story Construction (SC); and two students' scores improved in Contextual Conventions (CC).

African American students with LD face multiple challenges in acquiring literacy skills (Craig, Zhang, Hensel, & Quinn, 2009). First, as with many other students with LD, they frequently spend little time on planning and revising (Graham & Harris, 2003). Consequently, their writing might lack coherence and clarity (Gillespie & Graham, 2014). The planning sheet with the POWER steps seemed to be helpful. Yet, it was somewhat surprising to see that the students still made spelling mistakes although they were provided with their thoughts spelled correctly on the *Dragon Dictation* app. The recorded texts on the *Dragon Dictation* app nonetheless provided a good base for text organization and coherence. The open-ended interviews with the students following the intervention indicated that they thought they much improved their writing, and reported that the *Dragon Dictation* app was helpful.

Because all three students wrote with spelling mistakes in spite of their thoughts being displayed correctly on *Dragon Dictation*, we analyzed a sample of their writing to examine whether it displayed any features of African American English Vernacular (AAVE) (although such analysis was not specified originally as a research question). The students' writing did display some AAVE features across baselines, intervention, probes, and post-intervention as follows: (a) morphosyntactic features such as the use of preterite "had": *The boy had got on the horse; … they had thought* **[***thrown***]** *a lot of snowball***[***s***]** *at me and then I had got them back;* (b) zero past tense: *"The king wish that everything that he touch was turn to gold." So they all danced and celebrated because they free by* **[**were freed from**]** *a wicked king;* (c) reduction of consonants: *"The boy was bored and he went to a wise ole man…"* (AAVE feature also shared with the dialect of the South where the study was conducted); (d) use of auxiliary verbs: "*About mrs. Frakestin* **[**Mrs. Frankenstein**]** *was put a fock* **[**put a fork**]** *in her torst* **[**toaster**]**" (Washington et al., 2014). Toward the end of intervention and during the post-intervention and maintenance sessions, there were fewer inadequate features and, consequently, the outcome measures showed an improvement in writing competence.

As our focus was on writing, we did not measure reading achievement outcomes. We nonetheless believe that our study contributes to intervention studies in reading/writing contexts. Kang et al. (2015) conducted a literature review on integrated reading and writing interventions for students with LD and academic difficulties and identified only 10 studies over a period of 40 years that met their inclusion criteria. In view of potential benefits of connected reading and writing activities (Graham & Hebert, 2010; Shanahan, 2009), it seems important to further explore interventions in reading/writing contexts.

Limitations

Some of the limitations of the current study are inherent in single-subject design studies, in which participants are often not randomly selected, as is the case in the present study. While our study meets multiple criteria for experimental design (Kratochwill et al., 2013) and the visual analysis clearly indicates strong evidence of a causal relation in terms of level, immediacy of the effect, and trend, there is some variability in the data, as discussed earlier (Kratochwill et al., 2013).

Taking into consideration that writing to three probes (at the beginning, middle, and end-point of the study) does not meet multiple-baseline research design standards, we cannot claim that students' improvement in writing of narratives is one of the outcomes of our study beyond the reported improvement on CBM measures. We also had no control over activities taking place in the general education language arts class and the possible impact of those activities on the students' improved writing.

Implications and Future Directions

The challenges that African American students with LD face in developing literacy are not unique to them. The same or similar challenges face students with various disabilities and students whose "culture-specific literacy practices differ from the mainstream" (Washington et al., 2014, p. 217). With a focus on reading and writing activities as connected in the Common Core State Standards (CCSS), we recommend that more educators explore interventions in reading/writing contexts (Shanahan, 2015). Because writing has a positive effect on reading (Graham & Hebert, 2010), interventions in reading/writing contexts might be particularly beneficial for students with LD in reading and writing.

Washington et al. (2014) pointed to converging evidence indicating that speaking an AAVE dialect is

negatively related to literacy achievement among children in PreK- 5. However, not all children who speak AAVE are at risk for literacy failure. Children with strong language skills (e.g., strong syntax production in oral language) perform better in reading achievement in first through third grades (Craig, Connor, & Washington, 2003). The findings related to the benefits of strong language oral skills are consistent with studies on second-language acquisition. Thus, the English language learners who exhibit strong language proficiency during their schooling are often those with strong native language skills (Bialystok, 2007).

Although research on writing has expanded in recent decades, research on writing instruction with K-12 students, and especially African American students, has remained limited (Juzwik, Curcic, Wolbers, Moxley, Dimling, & Shankland, 2006). Teachers continue to feel underprepared to teach writing to diverse learners (Graham, Gillespie, & McKeown, 2013; Matsuda, Cox, Jordan, & Ortmeier-Hooper, 2006). The accreditation agencies in the field of teacher preparation recommend that English language arts teachers have knowledge not only about phonology, syntax, and semantics, but also about language use, patterns, and dialects (Council of Chief State School Officers, 2013; Curzan, 2013). At the same time, the linguistic features of dialects are seldom addressed in teacher education programs, and dialects remain a neglected topic in spite of increased attention to culturally responsive pedagogy (Curzan, 2013).

Finally, as an increasing number of elementary schools have LCD projectors in their classrooms along with Internet connections and iPads, there are many possibilities to design supportive and engaging learning environments. A number of studies describe increased student motivation and achievement with various apps (e.g., Hutchison, Beschorner, & Schmidt-Crawford, 2012). While most research on the use of apps in literacy instruction is informative, not many studies meet evidence-based standards (What Works Clearinghouse, 2012). In the present study we used one free app and freely available digital texts. Future studies should further explore the ways in which apps and digital texts may be incorporated in literacy instruction.

References

Bialystock, E. (2007). Acquisition of literacy in bilingual children: A framework for research. *Language Learning, 57*(1), 45-77. doi:10.1111/j.1467-9922.2007.00412.x

Campbell, J. M. (2004). Statistical comparison of four effect-sizes for single-subject design. *Behavior Modification, 28*(2), 234-246. doi:10.1177/0145445503259264

Center for Applied Special Education Technology. (2018). Available at http: www.cast.org.

Council of Chief State School Officers. (2013). *InTASC model core teaching standards and learning progressions for teachers 1:0: A resource for ongoing teacher development.* Washington, DC: Author.

Craig, H. K., Connor, C. M., & Washington, J. A. (2003). Early positive predictors of later reading comprehension for African American students: A preliminary investigation. *Language, Speech & Hearing Services in Schools, 34*(1), 31- 43. doi:10.1044/0161-1461(2003/004)

Craig, H. K., Zhang, L., Hensel, S. L., & Quinn, E. J. (2009). African American English-speaking students: An examination of the relationship between dialect shifting and reading outcomes. *Journal of Speech, Language, and Hearing Research, 52*(4), 839-855. Retrieved from https://deepblue.lib.umich.edu/handle/2027.42/83314

Curzan, A. (2013). Linguistic matters: Resistance and relevance in teacher education. *Language, 89*(1), 1-10. doi:10.1353/lan.2013.0016

Dean, V. J., & Burns, M. K. (2002). Inclusion of intrinsic processing difficulties in LD diagnostic model: A critical review. *Learning Disability Quarterly, 25*(3), 170-176. doi:10.2307/1511300

Deno, S. L. (2003). Developments in curriculum-based measurement. *The Journal of Special Education, 37*(3), 184-192. doi:10.1177/00224669030370030801

Deno, S. L., Marston, D., & Mirkin, P. (1982). Valid measurement procedures for continuous evaluation of written expression. *Exceptional Children, 48*(4), 368-371.

Englert, C. S. (2009). Connecting the dots in a research program to develop, implement, and evaluate strategic literacy interventions for struggling readers and writers. *Learning Disabilities Research & Practice, 24*(2), 104-120. doi:10.1111/j.1540-2009.01277.x

Englert, C. S., Raphael, T. E., Anderson, L., Stevens, D. D., & Fear, K. L. (1991). Making writing strategies and self-talk visible: Cognitive strategy instruction in writing in regular and special education classrooms. *American Educational Research Journal, 29,* 337-372. doi:10.2307/1162944

Espin, C. A., Weissenburger, J. W., & Benson, B. J. (2004). Assessing the writing performance of students in special education. *Exceptionality, 12*(1), 55-66.doi:10.1207/s15327035ex1201_5

Fletcher, J. M., Lyon, R. G., Fuchs, L. S., & Barnes, M. A. (2019). *Learning disabilities: From identification to intervention* (2nd ed.). NewYork, NY: Guilford.

Fogel, H., & Ehri, L. C. (2000). Teaching elementary students who speak Black English Vernacular to write in Standard English: Effects of dialect transformation practice. *Contemporary Educational Psychology, 25*, 212-235. doi:10.1006/ceps.1999.1002

Frankenstein's Lightning Laboratory. (2017). *Electrical safety*. Retrieved from http://oldintranet.puhinui.school.nz/Topics/Science/AtomFamily/frankenstein/index.html

Fuchs, L. S., & Fuchs, D. (2007). *Using CBM for progress monitoring in written expression and spelling.* Available at http://files.eric.ed.gov/fulltext/ED519251.pdf

Gillespie, A., & Graham, S. (2014). A meta-analysis of writing interventions for students with learning disabilities. *Exceptional Children, 80*(4), 454-473. doi:10.1177/0014402914527238

Graham, S., Gillespie, A., & McKeown, D. (2013). Writing: Importance, development, and instruction. *Reading and Writing: An Interdisciplinary Journal, 26*(1), 1-15. doi:10.1007/s11145-012-9395-2

Graham, S., & Harris, K. R. (2003). Students with learning disabilities and the process writing: A meta-analysis of SRSD studies. In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of learning disabilities* (pp. 323-344). New York, NY: Guilford.

Graham, S., & Harris, K. R. (2009). Almost 30 years of writing research: Making sense of it all with the *Wrath of Khan*. *Learning Disabilities Research and Practice, 24*(2), 58-68. doi:10.1111/j.1540-5826.2009.01277.x

Graham, S., & Harris, K. R. (2013). Common Core State Standards, writing, and students with LD: Recommendations. *Learning Disabilities Research and Practice, 28*(1), 28-37). doi:10.1111/ldrp.12004

Graham, S., Harris, K. R., & Beard, K. (in press). Teaching writing to young African American male students using evidence-based practices. *Reading & Writing Quarterly.* doi: 10.1080/10573569.2018.1535775

Graham, S., Harris, K. R., & Santangelo, T. (2015). Research-based writing practices and the Common Core: Meta-analysis and meta-synthesis. *The Elementary School Journal, 115*(4), 498-522. doi:10.1086/681964

Graham, S., & Hebert, M. (2010). *Writing to read: Evidence for how writing can improve. Carnegie Corporation Time to Act Report*. Washington, DC: Alliance for Excellent Education.

Graham, S., MacArthur, C. A., & Hebert, M. (Eds.). (2019). *Best practices in writing instruction* (3rd ed.). New York, NY: Guilford.

Graham, S., & Perin, D. (2007). *Writing next: Effective strategies to improve writing of adolescents in middle and high schools – A report to Carnegie Corporation of New York.* Washington, DC: Alliance for Excellent Education.

Hammill, D. D., & Larsen, S. C. (1996). *Test of Written Language (TOWL-3).* Austin, TX: Pro-Ed.

Hayes, J. R., & Olinghouse, N. G. (2015). Can cognitive writing models inform the design of the Common Core State Standards? *The Elementary School Journal, 115*(4), 480-497. doi:10.1086/681909

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single subject research to identify evidence-based practice in special education. *Exceptional Children, 71*(2), 165-179. doi:10.1177/001440290507100203

Hughes, C. A., Morris, J. R., Therrien, W. J., & Benson, S. K. (2017). Explicit instruction: Historical and contemporary contexts. *Learning Disabilities Research & Practice, 32*(3), 140-148. doi:10.1111/ldrp.1242.

Hutchison, A., Beschorner, B., & Schmidt-Crawford, D. (2012). Exploring the use of the iPad for literacy learning. *The Reading Teacher, 66*(1), 15-23. doi:10.1002/TRTR.01090

Juzwik, M., Curcic, S., Wolbers, K., Moxley, K., Dimling, L., & Shankland, R. (2006). Writing into the twenty-first century: A map of contemporary research on writing, 1999-2004. *Written Communication, 23*(4), 451-476. doi:10.1177/0741088306291619

Kang, E.Y., McKenna, J. W., Arden, S., & Ciullo, S. (2015). Integrated reading and writing interventions for students with learning disabilities: A review of the literature. *Learning Disabilities Research & Practice, 31*(1), 222-33. doi:10.1111/ldrp.12091

Kavale, K. A., Spaulding, L. S., & Beam, A. P. (2009). A time to define: Making the specific learning disability definition prescribe specific learning disability. *Learning Disability Quarterly, 32*(1), 39-48. doi:10.2307/25474661

Kazdin, A. E. (2010). *Single-case research designs: Methods for clinical and applied settings* (2nd ed.). New York, NY: Oxford University Press.

Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2010). *Single-case designs technical documentation*. Retrieved from https://ies.ed.gov/ncee/wwc/Docs/ReferenceResources/wwc_scd.pdf

Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2013). Single-case intervention research design standards. *Remedial and Special Education, 34*(1), 26-38. doi:10.1177/0741932512452794

Mason, L. H., Snyder, K. H., Sukhram, D. P., & Kedem, Y. (2006). TWA+PLANS strategies for expository reading and writing: Effects for nine fourth-gradestudents. *Exceptional Children, 73*(1), 69-89. doi:10.1177/001440290607300104

Matsuda, P. K., Cox, M., Jordan, J., & Ortmeier-Hooper, C. (Eds.). (2006). *Second language writing in the composition classroom: A critical sourcebook*. Boston, MA: Bedford/St. Martin's and National Council of Teachers of English.

McMaster, K. L., Du, X., & Pétursdóttir, A.-L. (2009). Technical features of curriculum-based measures for beginning writers. *Journal of Learning Disabilities*, *42*, 41-60. doi:10.1177/0022219408326212

National Center for Education Statistics. (2012). *The nation's report card: Writing 2011* (NCES 2012–470). Washington, DC: U.S. Department of Education, Institute of Education Sciences.

National Commission on Writing. (2003). *The neglected "R": The need for a writing revolution.* New York, NY: College Entrance Examination Board.

National Governors Association and Council of Chief State School Officers. (2010). *Common Core State Standards for English language arts & literacy in history/social studies, science, and technical subjects*. Washington, DC: Authors. Retrieved from www.corestandards.org

Parker, R., Tindal, G., & Hasbrouck, J. (1991). Progress monitoring with objective measures of writing performance for students with mild disabilities. *Exceptional Children, 58*, 61-73. doi:10.1177/001440299105800106

Rodgers, W., Lewis, T., O'Neill, R., & Vannest, K. (2018). *Policy and position statement on single case research and experimental designs*. Arlington, VA: Council for Exceptional Children, Division for Research.

Rogers, L. A., & Graham, S. (2008). A meta-analysis of single subject design writing intervention research. *Journal of Educational Psychology, 100*(4), 879-906. doi:10.1037/0022-0663.100.4.879

Scanlon, D. (2013). Specific learning disability and its newest definition: Which is comprehensive? and which is insufficient? *Journal of Learning Disabilities,46*(1), 26-33. doi:10.1177/0022219412464342

Schumaker, J. B., & Deshler, D. D. (2009). Adolescents with disabilities as writers: Are we selling them short? *Learning Disabilities Research and Practice*, *24*(2), 81-92. doi:10.1111/j.1540-5826.2009.00282.x

Scruggs, T. E., & Mastropieri, M. A. (1998). Summarizing single-subject research: Issues and applications. *Behavior Modification, 22*(3), 221-242. doi:10.1177/01454455980223001

Scruggs, T. E., Mastropieri, M. A., & Casto, G. (1987). The quantitative synthesis of single-subject research: Methodology and validation. *Remedial and Special Education, 8*, 24-33. doi:10.1177/074193258700800206

Shanahan, T. (2009). Connecting reading and writing instruction for struggling learners. In G. A. Troia (Ed.), *Instruction and assessment for struggling writers: Evidence-based practices* (pp. 113-131). New York, NY: Guilford.

Shanahan, T. (2015). Common core state standards: A new role for writing. The *Elementary School Journal, 115*(4), 464-479. doi:10.1086/681130

Starfall Education Foundation. (2017). *I'm reading.* Retrieved from www.starfall.com

Tannock, R. (2013). Specific learning disabilities in DSM-5: Are changes for better or for worse? *The International Journal for Research in Learning Disabilities, 1*(2), 2-30.

Tindal, G. (2013). Curriculum-based measurement: A brief history of nearly everything from 1970s to the present. *ISRN Education,* 1-29. doi:10.1155/2013/958530

United States Code. (2006). 20 U.S.C. § 1414(b)(6).

Walker, B., Shippen, M. E., Alberto, P., Houchis, D. E., & Cihak, D. F. (2005). Using *Expressive Writing* program to improve the writing skills of high school students with learning disabilities. *Learning Disabilities Research and Practice, 20*(3), 175-183. doi:10.1111/j.1540-5826.2005.00121.x

Washington, J. A., Patton-Terry, N., & Seidenberg, M. S. (2014). Language variation and literacy learning: The case of African American English. In C. Addison Stone, Silliman, E. R., Ehren, B. J., & Wallach, G. P. (Eds.), *Handbook of language and literacy: Development and disorders* (pp. 204-221). New York, NY: Guilford.

What Works Clearinghouse. (2012). *WWC evidence review protocol for K-12 students with learning disabilities, Version 2.2*. Retrieved from http://ies.ed.gov/ncee/wwc/Docs/ReferenceResources/sld_protocol_v2.2.pdf

Wolery, M., & Dunlap, G. (2001). Reporting on studies using single-subject experimental methods. *Journal of Early Intervention, 24*(2), 85-89. doi:10.1177/105381510102400201

Zirkel, P. A. (2017). RTI and other approaches to SLD identification under the IDEA: A legal update. *Learning Disability Quarterly, 40*(3), 165-173. doi:10.1177/0731948717710778

Zumeta, R. O., Zirkel, P. A., & Danielson, L. (2014). Identifying specific learning disabilities: Legislation, regulation, and court decisions. *Topics in Language Disorders, 34*(1), 8-24.