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Sentence Instruction Intervention on Elementary and Middle School-aged Students At-risk for Emotional and Behavior Disorders

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SENTENCE INSTRUCTION INTERVENTION ON ELEMENTARY AND MIDDLE

SCHOOL-AGED STUDENTS AT-RISK FOR EMOTIONAL AND BEHAVIOR

DISORDERS

by

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Researchers have found that students with emotional and behavioral disabilities (EBD) typically struggle during all stages of the writing process and they are the most under-researched category of writers. A promising new approach to teaching sentence writing is Sentence Instruction. The present study investigated the effects of Sentence Instruction on students at-risk for Emotional and Behavioral Disorders. A single case, multiple probe design across three students was used. The intervention led to an increase in complete sentences and percent of correct word sequences.

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CHAPTER 1: INTRODUCTION

Academic achievement is, in part, related to proficient written expression skills (Furey, Marcotte, Wells, & Hintze 2017). The 2011 National Assessment of Educational Progress found that a considerable number of school-aged students lack mastery in writing skills to be considered proficient writers, with fifty-four percent of eighth-graders performing at the basic level for writing. Therefore, many students are not able to meet the demands of classroom writing (Rogers & Graham 2008). A serious concern is placed upon students with disabilities because they display more writing deficits than their grade level peers (Vue et al., 2016).

Researchers have found that students with emotional and behavioral disorders (EBD) typically struggle during all stages of the writing process (Gage, Wilson, & Macsuga-Gage, 2014), and they are the most under-researched category of writers (Mastropieri et al. 2009). One explanation for why students with EBD struggle with writing is because a large percentage also have comorbid language deficits (Benner, Nelson, & Epstein, 2002; Nelson, Benner, Neill, & Stage, 2006). It has also been found that when presented with a writing assignment, students with EBD typically exhibit low levels of motivation which makes writing even more daunting take for them (Adkins & Gavins, 2012). Writers who are not able to persist through the writing process may become frustrated and begin to display inappropriate behaviors (Asaro-Saddler & Bak 2013).

Students with EBD require writing interventions because they often have difficulty regulating their behaviors when frustrated (Graham et al., 2012). This

asseration means that students with EBD tend to display challenging behaviors during writing, which typically results in removal from the classroom and consequently, loss of instructional time. Writing is also difficult for students with EBD because writing activities typically involve expressive language skills which many students with EBD do not posses (Sreckovic, Common, Knowles, & Lane, 2014). This typically leads to frustration and avoidance when writing. One study found that students with EBD scored below average on standardized writing tests when compared to their grade level peers (Nelson, Benner, Lane, & Smith, 2004).

Students who struggle with writing and have disabilities, such as EBD, typically have frequent errors in grammar and syntax and construct low amounts of complete sentences (Alstad et al., 2015). Researchers have also suggested that students who are fluent in sentence-level writing are better able to focus on other aspects of writing and acquisition of new writing skills (Berninger, Nagy, & Beers, 2011; Graham et al., 2012). Therefore, students who lack the skills required to construct complete simple sentences fluently also struggle with focusing on other aspects of writing and acquiring new writing skills.

The importance of writing to learning other skills cannot be overstated. In the classroom, writing can be used to document information and demonstrate a student's understanding of the information being taught (Datchuk, 2016). However, if students do not learn how to write well in the early years, they will typically receive lower grades and their chances of being accepted into college will be reduced because writing is used to evaluate an applicant's qualification for college (Rogers & Graham, 2008). If students do not possess these prerequisite skills, then their chances of obtaining a job are relatively

low because these skills are also needed in order to excel in the workplace. For example, according to a survey completed by The National Commission on Writing for America's Families, Schools, and Colleges (2006), people who are not able to communicate and write clearly are less likely to be considered for a promotion or even hired in the private sector. Therefore, students' ability to write well in the early years can determine how successful they will be in their future endeavors.

Over the years, there have been numerous writing interventions that have been developed to remediate deficits in writing such as Sentence-Combining (Saddler, Behforooz, Asaro, 2008), Capitalization, Organization, Punctuation, and Spelling (COPS) (Baker, Gersten, Graham, 2003), and Step Up to Writing (Auman, 2003). These interventions have led to one of the more promising interventions for students with EBD—self-regulated strategy development (SRSD). SRSD has been shown to improve the writing of students both with and without disabilities (Harris, Graham, Chambers, & Houston, 2014).

Several studies have examined the effects of SRSD on students with EBD (eg., Bak & Asaro-Saddler, 2013; McKeown, FitzPatrick, & Sandmel, 2014; Sreckovic, Common, Knowles, & Lane, 2014). However, there are limited studies on the effects of simple sentence instruction on elementary-aged students with EBD (e.g., Datchuk, Kubina, & Mason, 2015). For students with EBD, developing important writing skills before their problems become unmanageable is essential (Lane, Graham, Harris, & Weisenbach, 2006). However, for SRSD to be effective, students must have the prerequisite skills to construct simple sentences, (Graham, McKeown, Kiuhara, & Harris, 2012).

One approach to developing sentence writing skills is sentence combining. There is some literature on the impacts of sentence combing by Saddler and colleagues (Saddler & Graham 2005; Saddler 2005, Saddler & Perschern 2007; Saddler, Behforooz & Asaro (2008); Saddler & Asaro-Saddler 2010). Throughout many of Saddler's studies, sentence combining was a highly effective strategy for teaching students how to construct more complex sentences, which had a positive effect on story quality (e.g., Saddler, Behforooz, & Asaro, 2008). This research is promising, however sentence combining does not teach students how to construct sentences independently.

Unfortunately, there is a dearth of research on teaching students sentence composition skills, which requires idea generation. A meta-analysis by Rogers and Graham (2008) highlighted five studies (Beals, 1983; Eads, 1991; First, 1994; Johnson, 2005; Schmidt, 1983) examining sentence composition interventions that yielded positive results on complete sentences. These studies were conducted across multiple disabilities such as learning disabilities (LD), autism spectrum disorder (ASD), visually impairments (VI), other health impairments (OHI), emotionally disturbed (ED), and mildly mentally retarded (MMR). However, all of these studies were dissertations and theses that were not peer-reviewed publications.

A promising new approach to teaching sentence writing is Sentence Instruction (SI). SI focuses on simple sentence construction and highlights two components of a simple sentences which are: (a) a part that names and (b) a part that tells more. There have been a few studies conducted by Datchuk (2012, 2015, & 2017) focusing on the use of SI to increase the number of correct word sequences and complete sentences a student is able to produce. Datchuk (2015) examined the effects of sentence instruction on

adolescents with writing difficulties. This study was conducted across four participants, three males and one female, in a quiet area of a charter school in an urban area of Louisiana. In this study, Datchuk identified two dependent variables. First, the number of word sequences, both correct and incorrect word sequences, produced during 1-minute sentence construction probes were examined. Second, the number of sentences, both complete and incomplete, produced during 1-minute sentence construction probes were examined. Results from the study showed that there was a functional relationship between sentence instruction and rate of word sequences and simple sentences.

In another study, Datchuck (2017) studied 15 students enrolled in Grade 5 to 8 in a suburban school district in the New England area. For this study, the dependent variable was the average number of correct word sequences minus incorrect word sequences (CIWS). This study also showed a functional relation between sentence instruction and frequency building to a performance criterion and the average number of CIWS per small group.

Although the intervention developed by Datchuck (2012) is promising, it has not been replicated by other researchers and across different populations. Therefore, this approach needs to be replicated by other researchers and with additional populations. In addition, one of the potential limitations was that the researchers did not examine students' ability to generate sentences for authentic writing situations. Another limitation of this research was that the effectiveness of the intervention has not been tested with students with behavior intervention plans (BIPs). This approach to teaching students how to write complete sentences may not be effective for this population because students

with EBD struggle with the writing process and with these students being at-risk for EBD, they may also experience the same difficulties.

Based on the limitations described previously, the purpose of the present study is to examine whether the sentence instruction intervention would be effective for improving the essay writing skills of students at-risk for EBD. The following experimental questions were posed:

1. Is there a functional relation between the sentence writing intervention and the number of complete sentences students write during an extended writing prompt?

2. Is there a functional relation between sentence instruction and percent of correct writing sequences?

CHAPTER 2: METHOD

The present study used a single case multiple-probe design across participants to detect a functional relation between the intervention and the percent of CWS and complete sentences. The use of multiple probe design was used for this writing intervention because writing is a learned behavior, therefore, withdrawal might not be expected. Because this study involved multiple writing probes, and the participants struggled with writing, it was decided that a multiple probe design would reduce their frustration and likelihood of consistently failing. This design was preferable to a multiple baseline because with its continuous repeated observations, participants, additional practice could confound results of the intervention. During instruction for all participants, we didn't expect an immediate change in level across the four lessons in the intervention. For the intervention phases, we decided to use a "black box" design in which intervention began after baseline but additional data were not collected until the intervention concluded.

Participants

Students were selected to participate in this study through the suggestions of reading clinic staff at a university in the mid-west region of the country. To qualify for participation, students had to have a current behavior intervention plan (BIP) on their Individualized Educational Program (IEP) and display difficulty with sentence construction, as stated by their tutors at the reading clinic. After assessing the recommended students' reading with the Developmental Reading Assessment (DRA) and letter formation, two elementary-aged students and one middle school student were selected for the study. Table 1.1 shows students' information. According to their files at

the reading clinic, all participants had academic difficulties with writing and struggled to complete writing tasks during class time. Participants included two females (Isabella and Debbie) and one male (Phillip). Pseudonyms were assigned to protect the identity of participants. According to the DRA level scale, Isabella exhibited independent and accurate reading performance with a DRA score of 40, which placed her at a fourth-grade readability. Debbie's DRA score of 34 displayed independent and accurate reading performance with text written at a readability of a third to fourth-grade level. Phillip's DRA score of 38 displayed accurate and independent reading with text written at approximately third to fourth-grade readability. To participate in this study, students needed to write between 80 to 100 correct letters per minute to ensure that they would be able to complete the intervention during the 25 minutes allotted to each lesson.

Table 1.1
Student Demographic Information

Name	Grade	Age	Race	Sex	Developmental Reading Assessment
Isabella	6	12.1	White	Female	DRA: 40
Debbie	4	9.7	White	Female	DRA: 24
Phillip	3	6	White	Male	DRA: 14

Setting

The intervention and data collection took place in an office in the special education department of a university in the Midwest. Within this office was a conference table, which the student and the researcher sat at, side-by-side. During this time, only the researcher, participant, and a research assistant were in the room, to reduce the potential of outside stimuli causing distractions.

Intervention Materials

Sentence construction assessments were similarly formatted to the writing fluency subtest of the Woodcock-Johnson III Test of Achievement (WJ-III; Woodcock, McGrew, & Mather, 2001) with a few differences (Datchuk, Kubina, & Mason, 2015). Taken from Datchuck, et al. (2015), within each assessment, there were 10 items across two pages. Each item consisted of a small picture of an animal, object engaged in an activity with word prompt, or person. Word prompts typically ranged from two to three words. Two blank lines were available to the right of each picture for students' written responses. The materials used for sentence instruction (SI) included pictures with simple sentences and word prompts (complete and incomplete). SI consisted of three different stimulus sets, one per instructional session. Sentences were copied from basal readers and complete and incomplete sentences were created. All of the texts used in this intervention had an approximate decoding level of second to third-grade using the Spache readability formula (Ardoin, Williams, Christ, Klubnik, & Wellborn, 2010; Burke & Greenberg, 2010). At the end of each lesson, there was an assessment to evaluate the students' understanding of that lesson.

The researcher delivered instruction from scripted lessons created by Datchuk

(2012) and the first three sessions lasted approximately 25 minutes each. The scripts followed model-lead-test instructional formats (Archer & Hughes, 2011), which required the researcher to model new skills, then lead students through guided practice, provide immediate error feedback and correction, and test the students for acquisition.

Measures

Screening measures. Participants were required to read basic words during the independent stages of the intervention, where the students practice what they were taught. Therefore a review of pre-existing reading assessment data were collected for all participants to ensure that they were competent at decoding materials. Prior to intervention, oral reading fluency was assessed for each participant using the DRA system and students had to score at a DRA 14 or higher to qualify for this study.

Participants were given one minute to complete a sentence copy task in order to assess students' accuracy and fluency in handwriting. The sentence that was used for this study was, "Five boxing wizards jump quickly." This sentence was selected because it consists of every letter in the alphabet and therefore, students' ability to form all letters could be assessed. The researcher then counted the number of correctly formed letters.

Dependent variable. The outcome measures used for the study were curriculum-based measures (CBM) of writing, and were scored for complete sentences and percent of correct word sequences (CWS) during baseline, intervention, and post-instruction phases. Unique randomly selected writing probes were administered across all three phases. Sixteen written expression story starters were gathered from Intervention Central (https://www.interventioncentral.org/teacher-resources/curriculum-based-measurement-

probes-writing). Each story starter was written at a second to third-grade decoding level and provided the name of a person, animal, or object engaged in an activity or a verb. The researcher followed the following script before each CBM was administered:

"I want you to write a story. I am going to read a sentence to you first, and then I want you to write a short story about what happens. You will have 1-minute to think about the story you will write and then have 5-minutes to write it. Do your best work. If you don't know how to spell a word, you should guess. Are there any questions? For the next minute, think about...[insert story-starter]".

The examiner then started the stopwatch. At the end of 1-minute, the examiner said, "Start writing." After five minutes, the examiner says, "Stop writing". CBM writing probes were immediately collected for scoring.

For scoring purposes, the researcher defined CWS if (a) the first word of a sentence began with a capital letter, (b) two adjacent words were syntactically and grammatically correct, or (c) the final word of a sentence was followed by correct punctuation. Grammatically correct words were adjacent words that made syntactic and semantic sense, agreed in number as singular or plural, and had consistent verb tense (see table 2.1). Once the CWS and incorrect word sequences were determined for each CBM, the percent of CWS was calculated by dividing the CWS by the total number of possible word sequences.

Table 2.1

Example of Correct and Incorrect Word Sequence

Scores	Responses
CWS = 9, IWS = 0 Complete sentence	^ Freddy ^ wanted ^ ice ^ cream ^ with ^ his ^ birthday ^ cake ^ .
CWS = 4, IWS = 4 Incomplete sentence	x freddy x want ^ ice ^ cream x his ^ birthday ^ cake x

Complete sentences were defined as those beginning with a capital letter, having a punctuation mark at the end of the sentence, containing at least one subject and one verb, and made semantic and syntactic sense (Bui, Schumaker, & Deshler, 2006). An example of how complete sentences were scored appears in Table 2. Incomplete sentences were defined as sentences beginning with a lowercase letter, lacking punctuation mark at the end of the sentences, not containing at least one subject and one verb, and failed to make semantic or syntactic sense.

Interobserver Agreement. Two different researchers also scored the writing probes. Interobserver agreement was calculated by dividing the number agreements by the number of agreements plus disagreements. Interobserver reliability was calculated for CWS, IWS, and complete sentences. Interobserver reliability for percent of CWS, was 92%, 95% for IWS, and 100% for complete sentences.

General Procedures

The researcher obtained Institutional Review Board (IRB) approval before participant recruitment. The researcher provided a written script to a reading center

employee with information about the study. The reading center employee then contacted parents/guardians whose child qualified for this study. When potential participants agreed to be contacted for the study, the researcher arranged individual meetings with the potential participants and their parents/guardians, who agreed to the terms of the study through written informed consent/assent. Participants received instruction two to three times a week. During the sessions, the researcher administered the lesson for the day following the directions listed in the teacher's script. At the end of every lesson, participants completed, the student completed a check-out assessment which determined whether they moved on to the next lesson. This procedure was followed by participants completing the CBM probe assigned for that day.

Baseline. During each baseline session, participants completed one 5-mintue CBM probes in a private room at the university. Each baseline session lasted approximately seven minutes. At the end of the writing probe, the researcher provided feedback to participants for their effort. The researcher provided feedback such as, "Thanks for trying your hardest", "Keep up the hard work", "Thanks for giving it your best effort." After five data points were obtained for Isabella, she entered the intervention phase. Debbie and Phillip remained in baseline. After Isabella completed the instructional phase, and five data points were collected for Debbie, Debbie then entered the intervention phase. The same process was repeated for Phillip.

Sentence instruction. The researcher administered sentence instruction materials, which featured word prompts with complete and incomplete simple sentences. SI consisted of four different lessons with different stimulus set for each instructional session. Each lesson was 25 minutes long.

In session one, the researcher introduced simple sentences to student as an essential skill needed for comprehensible written expression. Students learned the components of a complete sentence, which consists of two main parts, (1) a part that names something or someone and (2) a part that tells more. The researcher taught participants that an incomplete sentence is missing one of the two main parts of a complete sentence. This was done through explicit instruction, following the "I do, we do, you do" model. Then the researcher modeled identifying complete and incomplete sentences. Students read incomplete and complete sentences aloud that appeared with a picture. Then, they orally identified complete and incomplete sentences following the definition of a complete sentence. When the students recognized an incomplete sentence, they revised the sentence by writing the missing part.

During the second session, the researcher provided students with a collection of sentences and they were instructed to identify both parts of a complete simple sentence. However, during this session, the sentences did not correspond to a picture. Rather, participants were provided with a series of phrases that they read aloud and then stated whether the phrases were complete or incomplete. Participants were then taught to fill in missing capitalization and/or punctuation.

During session three, participants received a collection of pictures describing a single item (e.g., animal, thing, or person) engaged in an activity. The images were also accompanied by word prompts such as, the name of the subject and an object or verb. Students then used the word prompts to write a simple sentence for each picture.

For the fourth session, participants received three storybooks, which consisted of

four sequential pictures that created a story (see Appendix E). Participants received one storybook at a time. The researcher instructed them to look at each picture in the storybook before writing their sentences. After the participants looked through the storybook, they wrote one simple sentence for each picture that made sequential sense. During post-instruction, participants had to achieve at least 90% accuracy on all sessions. If a participant obtained less than 90% accuracy, they would have to repeat the session(s).

At the end of each session, participants were administered a check-out assessment sheet to evaluate the skills learned that day. In order to move on to the next session the student had to receive a score of 80% or higher on the check-out assessment however, if the student did not receive 80% of higher, they were retaught the lesson and reassessed the next day.

Treatment Fidelity

Lesson and assessment specific checklists were created for each lesson (see Appendix A & B). The researcher delivered the intervention and assessments from a script, while a research assistant noted any deviations from the scripts for 30% of all experimental sessions. The research assistant checked off steps that were completed correctly or made notes of any deviation from the script. Then, the percentage of steps completed correctly was scored. The researcher calculated treatment fidelity by adding together the number of correct tasks on the checklists, divided by the total number of tasks, and then multiplied by 100. Treatment fidelity was 100% across all observed lessons.

CHAPTER 3: RESULTS

The mean was calculated for CWS because the changes in data points for complete sentences were not significant and could be easily be seen through visual analysis (see Figure 1). The results for percent of CWS appear in Figure 2 and Table 3.1. This was a secondary measure, and not used for determining phase changes.

Isabella's data points for baseline in Table 1 for complete sentences ranged from zero to one with only her fourth data point scoring at one. Following the intervention, Isabella's complete sentence production ranged from one to two sentences across five data points. Because Isabella scored 1 on one of her baseline assessments, it was impossible to determine whether there was an immediate change in level or trend. However, Isabella scored consistently 1 or more sentences on all measures following instruction, indicating that there was a treatment effect for complete sentences. Isabella's post-instruction levels for complete sentences remained consistently higher than baseline and promising growth. For percent of CWS, Isabella began baseline with one high data point however, as baseline data continued, her scores became consistently lower and more stabilized ($M = 9.33$). Following the intervention, Isabella showed a gradual increase in trend ($M = 50.16$).

Table 3.1
Mean for percent of CWS

Student	Baseline	Post-instruction
Isabella	9.33	50.16
Debbie	64.38	68.17
Phillip	5.64	52

During baseline for complete sentences, Debbie's remained stable with consistent scores of zeros across all five data points. Following instruction, Debbie displayed an immediate increase in level with her data points remaining stable for the last four data points which ranged from one to two complete sentences. This indicates that the intervention was less effective for Debbie, however there was still growth. Although Debbie first 3 data points during post-instruction appear to show a decrease in trend, she began to stabilize towards the end of post-instruction and demonstrated retention of the skill. During baseline, Debbie's data showed fairly consistent levels in performance (M = 64.38) however, after intervention, Debbie did not show a significant increase in percentage of CWS (M = 68.17).

Philip's baseline scores remained stable with consecutive zeros for complete sentences. However, his level of responding changed rapidly immediately following the intervention. During post-instruction Phillip's data points appeared more variable than the other two students. Phillip first displayed signs of an increasing trend with his first three data points however following the third data point his scores began to drop. This variability indicates that Phillip's rate of responding was not stable however, his data points displayed promising growth. During baseline for percent of CWS, Phillip's scores remained stable with very little variability (M = 5.64). Following intervention, Phillip's levels of responding remained high and stable across probes and displayed a gradual increase in level (M = 52).

Through visual analysis, experimental control was demonstrated in this multiple probe design for complete sentences because all participants' scores during baseline remained at zeros, with the exception of one data point. Once the intervention was

implemented, responding increased and maintained following the intervention. Experimental control was achieved for only Isabella and Phillip on the percent of CWS measure. The scores were lower during baseline, when compared to the results obtained during post-instruction. Debbie increased percentage of correct word sequences before becoming stable throughout all phases of the study, perharps because of a ceiling effect which there was not much room for growth to be demonstrated. However, the student's mean during post-instruction was higher than the student's baseline mean, indicating the intervention may have led to a higher average percentage CWS, although this was influenced by a single high data point in the final probe.
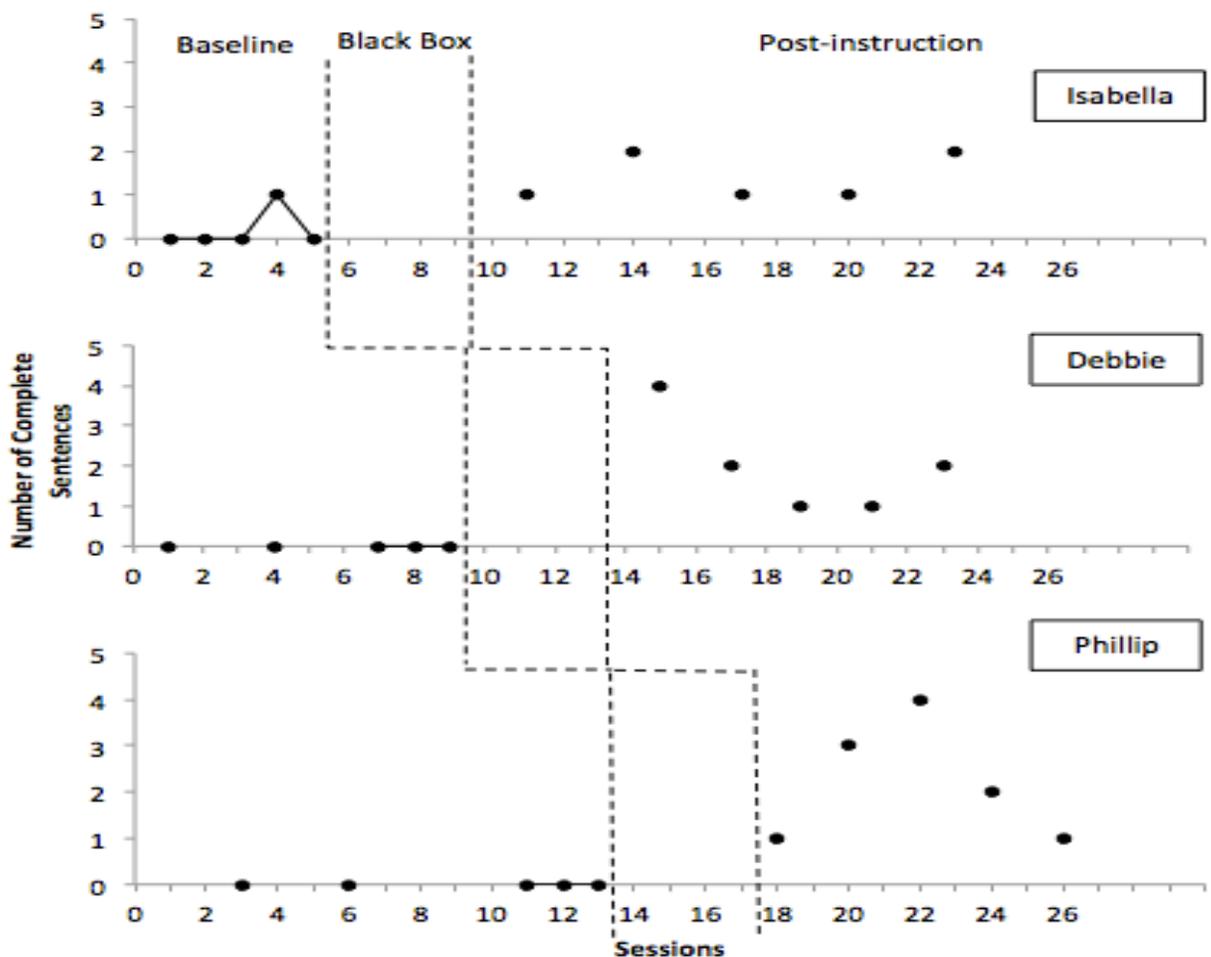

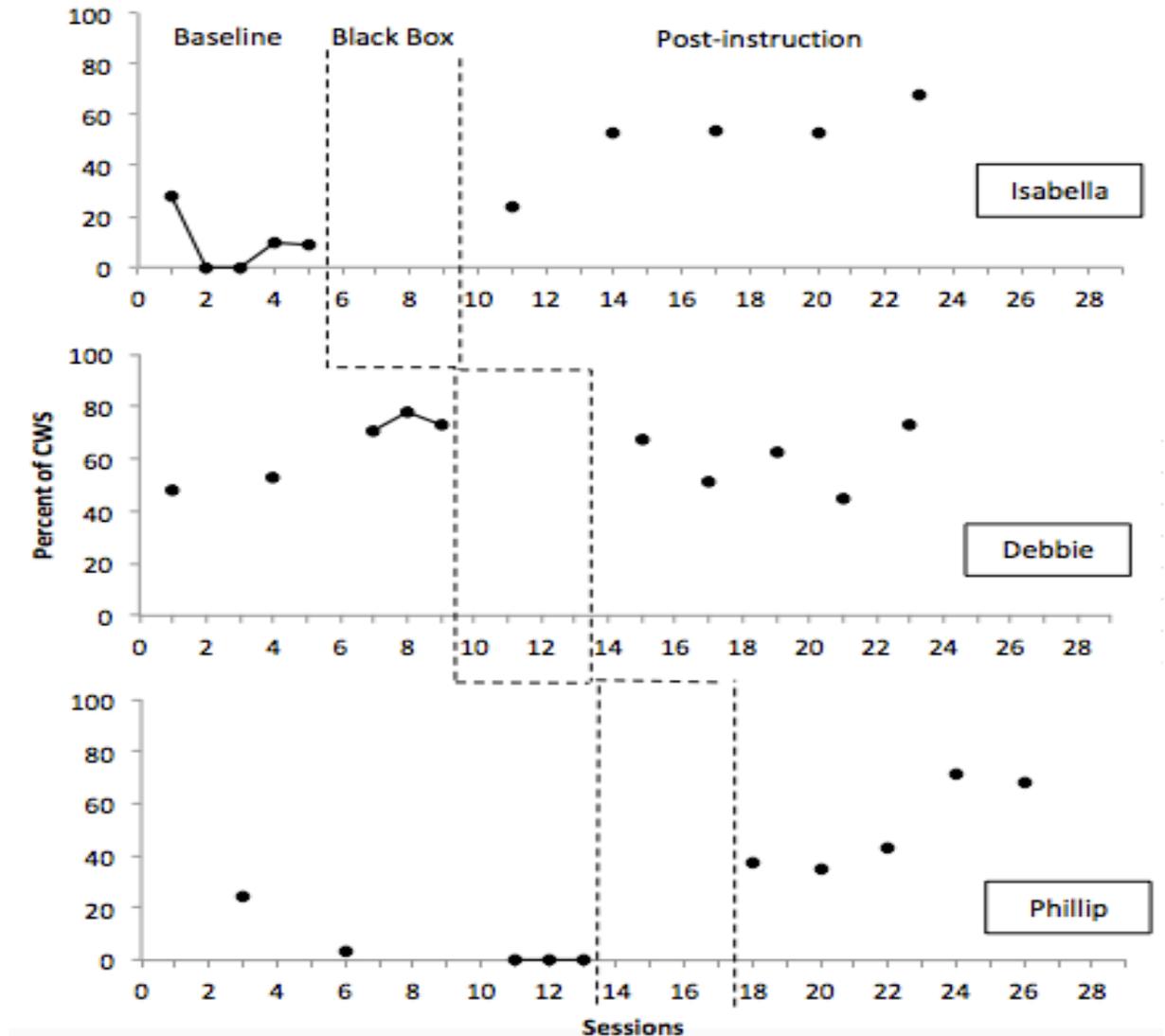*Figure 1. Total complete sentences per 5-minute writing probe.*

Figure 2. Percent of correct word sequences per 5-minute writing probe.

One potential confounding variable was typical classroom instruction, which could have explained increases in participant performance. However by staggering the intervention across participants, researchers can detect if behaviors drastically change before the intervention is implemented. The multiple probe design allows researchers to monitor this potential confound and the design can identify if this confound is interfering with the results.

Another potential confounding variable was a testing effect. This design was less likely to lead to repeated-testing effects when compared to a multiple-baseline design because CBM probes did not overlap during baselines or intervention. Repeated opportunities to engage with the testing material increased, however it was controlled by ensuring that each CBM probe began with different story starters and did not overlap.

CHAPTER 4: DISCUSSION

Sentence instruction affects overall writing performance because it starts at the basics of simple sentence construction. The ability to construct simple sentences is a core skill that writer must posses before they are able to move on to more advance writing such as complex sentences and paragraphs (Datchuk, Kubina, & Mason 2015). Therefore, the purpose of this study was to investigate the effects of sentence instruction on complete sentences and CWS for elementary-aged students with BIPs. The researcher decided to evaluate the relationship between sentence instruction and correct word sequences, number of complete sentences, and typical classroom writing assignments.

The results of this study determined that the effect of sentence construction interventions for students with challenging behaviors needs further investigation. Students with challenging behaviors are at risk for continued writing difficulties unless provided interventions.

The data showed a functional relation between the sentence instruction and the amount of complete sentences produced during visual analysis. For all participants, their rate of responding before the intervention was consistently low, however after the intervention there were positive effects for all participants. Isabella and Debbie had the most promising scores when compared to all the participants, although still relatively low, their scores showed the best long-term growth. Whereas Phillip's scores varied drastically and there appeared to be a downward trend when the last three data points were analyzed during post-instruction.

Through visual analysis, it was determined that participants' percent of CWS increased in frequency for both Isabella and Phillip, however, for Debbie, the results were

more questionable. The lack of improvement for CWS for Debbie could be attributed to a ceiling effect. Before the intervention, Debbie was already performing well on CWS and after intervention, there were too many overlapping data point to prove SI had a positive effect on her CWS. By increasing percent of CWS, Phillip and Isabella were able to produce overall better pieces of writing, which positively impacted their performance in writing. The results of this study indicate that sentence instruction has mixed results for increasing percent of CWS for students with challenging behaviors.

Variability in Data and Internal Validity

Much of the data demonstrated differing levels of variability. One explanation is because some participants found certain CBMs to be easier to write about while others struggled and vice versa. (eg. "If my superpower was flying I would…" "The best/worst day of my life was…"). Nevertheless, the data does indicate that sentence instruction can be an effective intervention.

Threats to internal validity that were addressed in this study were maturation, testing, and confounding. Maturation was addressed by ensuring that the entire study was brief and only lasted six weeks. Testing effects were also accounted for by ensuring that each CBM story starter consisted of a different person, animal, or object engaged in different activities that never overlapped. Finally, researchers controlled for confounding by selecting students for the intervention who received no additional services or instruction in writing during the time of the intervention.

Limitations

There are several limitations to the current student. First, this study involved instruction for students displaying challenging behaviors. Additional attention and

contact with participants and expectancies may have caused a confound because attention and additional prompts may been given for inappropriate behaviors depending on the extent of the behavior.

Another limitation of this study is that students were also receiving typical classroom instruction; therefore, the intervention could have been impacted by this additional instruction. Although students without IEP goals in writing were purposely selected for this study, students were still receiving instruction in their general education classroom. This instruction may have impacted the results. However it is unlikely this was controlled for through the study design, and therefore was unlikely.

The final limitation identified in this study was that there was not a proximal or near measure used as a student outcome. Therefore, the instruction taught participants how to write simple sentences however, there was no sentence writing measure included in the study. There could have been more powerful effects of the intervention demonstrated on such measure if they were included in the study.

Implications For Practice

This intervention would be beneficial for students with challenging behaviors because it is a short intervention and includes explicit instruction so that students are taught what is need in order for them to successfully write a complete sentence. This intervention consists of only four lessons which are all accessible online and easy to implement. For teachers who have students who struggle with writing complete sentences this intervention may help to remediate those difficulties and foster writing fluency and according to Binder (1996) writing fluency is an essential academic skill that promotes immediate and future behavior changes. Therefore writing fluency was cultivated in this

study through the use of CBM probes. Students were taught the components of complete sentences and then provided opportunities to implement these skills on 5-minute CBMs.

This writing intervention would be most effective for either small group instruction or one-on-one instruction because students are required to score 90% or above on the checkout at the end of each lesson. Therefore having whole group instruction with students of varying abilities would not be as effective. Due to the skills taught in this intervention, it could also be used at any point in the school year, however, it would be extremely beneficial to implement at the beginning of the school year or after a long breaks to ensure that the students are reminded of the components of a complete sentence.

For students with challenging behaviors, it is recommended that a behavior management plan be built in to the intervention (eg. Chart move, tokens of economy). A recommendation for this intervention would be that for every page completed during the intervention, the student would be allowed to move forward one place on their chart move, and five chart moves could result in the student receiving a small prize (eg. pencil, sticker, candy, putty.) By having this behavior management plan built in to the intervention, students' would potentially display minimal to no behaviors during all phases of the experiment.

The results suggest that sentence instruction for elementary-aged students with BIPs can lead to overall better writing skills. Although the results are not drastic, slow and steady improvement for these students means that we could remediate the difficulties they currently face in order to prepare them for the writing demands they will face in the future. This study has shown that sentence instruction is an intervention that can assist

low performing students with overall writing ability. From this study, we are able to conclude that through the use of model-lead-test, feedback, error correction, and direct instruction students with behavior difficulties can develop higher frequencies of complete sentences and CWSs as well as maintain these behaviors.

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APPENDIX A
CBM FIDELITY CHECKLIST

Date: _____

_____ "I want you to write a story. I am going to read a sentence to you first, and then I want you to write a short story about what happens. You will have 1-minute to think about the story you will write and then have 5-minutes to write it. Do your best work. If you don't know how to spell a word, you should guess.

_____ Are there any questions?

_____ For the next minute, think about...[insert story-starter]".

_____ The examiner then started the stopwatch.

_____ At the end of 1-minute, the examiner said, "Start writing."

_____ After five minutes, the examiner says, "Stop writing".

Total
_____ / 6

Percent
_____ x 100 = _____

APPENDIX B
LESSON 1 FIDELITY CHECKLIST EXAMPLE

LESSON 1

Objective 1: See picture with persons named. See text that has tell more, fill in names something

A

<u>Model (Numbers 1 to 4, only the teacher writes. Student provides answers vocally and watches).</u>

_____ 1. Find part A on your paper.

_____ 2. You're going to write simple sentences that report on a picture. When you write simple sentences, first you name something, then you tell more about the thing you name.

_____ 3. So first, you name something, then you tell more. What do you do first? **"Name something."** Then what do you do? **"Tell more."**

(repeat until firm).

_____ 4. Find part A on your worksheet. The instructions say fill in the missing part of each sentence. The part that tells more is written under the picture, but the part that names is missing.

_____ 5. Watch me do number 1.

_____ 6. Sentence 1 says: _____ flew a kite. What name goes in that blank? **"Stephen."**

APPENDIX C
PHILLIP'S PRE-TEST CBM

If I could be invisible for a day I would...

ſr ſ c ɑɟ

ſrɪ c ɑr bɑe

f ɪ

af

ɪ f ɪ coʋ

ʌʌ ɪ coɟ

ɪɟ ɪ cɑr

ɪɟ ɪ cɑʄ

ʍʎ

Total Words: ____   Correctly Spelled Words: ____   Correct Writing Sequence: ___

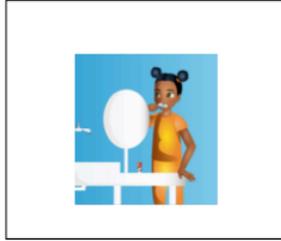www.interventioncentral.org • Copyright © 2009 - 2018 Jim Wright

APPENDIX D
PHILLIP'S POST-TEST CBM

The worst day of my life was...

The worst day of my life wes
after tok my paper quay.
he crund up the
paper frum Jurassic
world the vom kingdem.
I punch ken in the
bake and i cried.

Total Words: _____ Correctly Spelled Words: _____ Correct Writing Sequence: _____

APPENDIX E
LESSON 4 EXAMPLE