Investigation of the Writing Intervention and Instruction Research-to-Practice Gap in High School Special Education Classrooms

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The literature review in this dissertation examined what writing intervention strategies have been implemented with high school students in special education, with what measures, and with what found outcomes. The study following the literature review surveyed and interviewed high school special education teachers to determine what practices the participants use to teach writing, how the participants perceive the writing abilities of their students, and what challenges the participants experience when instructing students in writing and implementing writing interventions. Results from the study indicated three main findings. First, participants used a variety of tools and assignments to instruct students in writing but were largely unfamiliar with writing interventions. None of them used writing interventions. Second, teachers generally noted that students had good ideas in their writing. However, they also noted that their writing lacked organization without the use of prewriting techniques. Third, the participants indicated that the most difficult part of teaching writing was the need to learn how to teach writing on their own since they did not receive much, if any, instruction on it during their programs in college or in professional development. Following a discussion about the results, I describe implications for practice and future directions for research.

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1.0 Introduction

Writing is a skill that students learn to communicate ideas effectively and show understanding (Hyland, 2011; Sundeen, 2012; Taft & Mason, 2011). Students use writing in school to convey that they have learned content and made connections between prior and current learning (Applebee & Langer, 2011; Hirvela, 2011; Mason et al., 2013; Taft & Mason, 2011). Writing can take many forms in school, such as journaling, composing papers, and constructing outlines or notes (Hirvela, 2011). Writing is also a skill that students will need to take with them to college and the workforce (Sundeen, 2012; Taft & Mason, 2011).

Skilled writers are able to plan and organize what they want to write, answer all parts of the prompt, deliver an argument, and reflect upon and revise their writing (Harris et al., 2003; Jacobson & Reid, 2010). Students may have difficulties with one or several of these writing skills (Ray et al., 2019). In particular, students with disabilities often produce writing that is less organized than it could be or do not answer all parts of the prompt (Harris & Graham, 1999; Jacobson & Reid, 2012; Ray et al., 2019). Due to the needs of these students, researchers have developed writing interventions to target various components of the writing process. Most writing intervention research focuses on creating interventions for students with disabilities who tend to have difficulty writing proficiently (Harris & Graham, 1999). Students with disabilities who have issues while writing tend to also receive test scores that illustrate the gap in writing skills between students with and without disabilities (Harris & Graham, 1999).

One way that students with disabilities can improve the organization of their writing is with the use of prewriting strategies employed prior to writing the final piece they submit (Sundeen, 2012). Prewriting affords students the time to come up with ideas, organize the ones they wish to

write about, and leave behind the ones that they do not wish to use anymore (Ray et al., 2019; Sundeen, 2012). Prewriting has been shown to be especially helpful in providing a space to contain these ideas, in addition to their mental space, so that they can focus on other important aspects of the writing process when composing their responses, such as spelling and grammar (Torrance & Galbraith, 2006).

There are several different types of prewriting strategies that researchers have studied. These strategies include graphic organizers and mind-mapping, which provide visual networks between ideas (Evmenova et al., 2016; Sundeen, 2012; Troia, 2014). A popular method in the literature, self-regulated strategy development (SRSD), teaches not only prewriting but also how to write the whole essay while instructing students on how to self-regulate their writing (Slavin et al., 2019). An example of a prewriting mnemonic that SRSD instructs students how to employ is STOP, which stands for the following:

> Suspend judgment and brainstorm ideas for and against the topic. Take a side on the topic. Organize ideas [-] place a star next to the ideas you plan to use and those you plan to refute [-] number the order in which you want to introduce them. Plan more as you write. (Graham et al., 2016, p. 9).

This multistep prewriting process is an example of how a writing intervention walks students through planning and organizing their ideas before starting the next part of the writing process: writing an answer to the prompt.

An examination of the prewriting literature has yielded multiple findings (Bouck et al., 2010; Chalk et al., 2005; Delano, 2007; Ennis & Jolivette, 2014b; Hoover et al., 2012; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Mason et al., 2013; Ray et al., 2019; Sundeen, 2012).

Those findings include that most writing interventions tend to cover the whole writing process rather than focusing on one part, such as prewriting. Also, the current measurements that writing interventions have used to examine effectiveness show the need to be more accurate and rigorous. Finally, although the most common writing intervention type—SRSD—shows positive results, certain components of the intervention lead to research-to-practice gap issues.

Additionally, researchers have found that many teachers do not feel confident instructing their students in writing (Hodges et al., 2019; Myers et al., 2016). This is not surprising, as many secondary teachers report that they have received very little instruction in their teacher preparation programs or professional development sessions on how to teach writing (Myers et al., 2016; Poch et al., 2020). Teachers' levels of self-efficacy with writing interventions matter because teachers' keenness to implement research is largely driven by how helpful they perceive it will be for students, the difficulty involved in implementation, and how familiar they are with it (Graham & Perin, 2007). Because students' writing skills are so important and show room for improvement, the interventions that researchers study need to be of high quality and effective in terms of improving writing (Jacobson & Reid, 2010; Mason et al., 2013; Sundeen, 2012). However, just focusing on effectiveness, without considering social validity, may result in unimplemented interventions (Vogelgesang et al., 2016).

Investigating what supports special education teachers need to be able to implement effective writing interventions in their classrooms is an important next step in diminishing the research-to-practice gap. There has been research on the writing instruction practices of secondary general education teachers. For example, Hillocks (2002) found that teachers spend more time teaching writing than in the preceding decades. Teachers spend time in class with students prior to writing on brainstorming, organizing, and planning out what will be written (Applebee & Langer,

2011; Hillocks, 2002). Upon observation, the amount of time students spend composing writing the length of a paragraph or longer is an average of less than 10% of class time (Applebee & Langer, 2011, 2012).

The scope of this paper focuses on special education teachers rather than general education teachers. Without understanding the writing practices of special education teachers and what they find doable or desirable in terms of implementing interventions, the amount of well-researched writing instruction that students with disabilities experience may remain low. If teachers do not feel that the benefits of the interventions, such as improving the writing skills of their students, will not outweigh any potential drawbacks, such as taking up limited class time that could be spent on something else, or require extensive training, then even the interventions with the largest effect sizes may not be put into practice (Applebee & Langer, 2011; Finn & Sladeczek, 2001; Graham & Perin, 2007; McDuffie & Scruggs, 2008; Vogelgesang et al., 2016). Examining teachers' views about these interventions can give researchers valuable information prior to designing their studies that will lessen the gap between research and practice.

1.1 Research Questions

Because there is a lack of qualitative research investigating special education teachers' perceptions of teaching writing, the purpose of the study is to examine what teachers find socially valid and necessary to teach writing to lessen the research-to-practice gap in writing intervention research (Finn & Sladeczek, 2001; Graham & Perin, 2007; McDuffie & Scruggs, 2008; Vogelgesang et al., 2016). The research questions for this dissertation are as follows:

1. What practices do high school special education teachers engage in when teaching writing?
2. How do high school special education teachers perceive the writing abilities of their students?
3. What challenges do high school special education teachers experience when instructing students in writing and implementing writing interventions?
    a. What education and supports do high school special education teachers need when instructing students in writing and implementing writing interventions?

2.0 Literature Review

The ability to write serves as a critical academic skill showing an ability to convey thoughts to others as well as demonstrating understanding (Hyland, 2011; Sundeen, 2012; Taft & Mason, 2011). Core skills within writing include planning and organizing, aligning the writing to the topic or prompt, and revising (Jacobson & Reid, 2010). Writers must also demonstrate an ability to write within a specific time frame, indicate the purpose of their writing, and answer all parts of the prompt (Harris et al., 2003; Jacobson & Reid, 2010). Students often have difficulties with one or more of the components (Ray et al., 2019). As a result, researchers have created and continue to study interventions that target one or more writing skills or writing styles.

2.1 The Importance of Writing

Writing is important for students to learn for school, college, and employment purposes (Jacobson & Reid, 2010; Mason et al., 2013; Sundeen, 2012). For example, well-executed writing can convey knowledge and ideas to people and show that they have learned something new; writing can also be used as a tool to learn new concepts by synthesizing and making connections to what a person has just learned, as well as to material from weeks, months, or years in the past (Applebee & Langer, 2011; Hirvela, 2011; Mason et al., 2013; Taft & Mason, 2011). When learning from writing, students may take notes, outline an idea, summarize what they have learned, or reflect on their learning in a journal (Hirvela, 2011). The ability to write transcends courses like social studies and English and can be found in math and science (Applebee & Langer, 2011).

The need to use writing skills throughout the school years—from elementary school, to middle school, to high school, to university—only increases from grade to grade (Donato & Tucker, 2010). However, in 2007, only slightly more than half of students in grades 8–12 in the United States scored with basic proficiency in writing on the National Assessment of Educational Progress (Salahu-Din et al., 2008). Even though experts in education have begun to recognize writing's importance more (Applebee & Langer, 2011), the National Center for Education Statistics reported in 2012 that only 5% of 12th grade students with disabilities in 2011 produced writing that was considered of good quality academically (Aud et al., 2012); in addition, 24% of 12th graders overall wrote at the same level. In college, the need to write fluently across all majors is well known, and many jobs out of high school even require basic written communication skills with customers and coworkers (Sundeen, 2012; Taft & Mason, 2011).

2.2 Lack of Focus on Writing in the Research

The amount of time spent on developing students' writing skills has improved since implementation of the No Child Left Behind Act (Jacobson & Reid, 2010). However, research on reading and math has still exceeded the amount conducted on writing (Kiuhara et al., 2009; Slavin et al., 2019). Evidence suggests that as students display improved writing skills, reading skills can improve; thus, an increased focus on writing research benefits both writing and reading (Slavin et al., 2019). This lack of research impacts practitioners' abilities to develop strong writing skills in their students and education-standards writers' abilities to knowledgeably create standards that will build writing skills at the right ages and in the right order (Harris & Graham, 2016). Therefore,

it is not surprising that most teachers do not feel they have been trained well to teach students how to write and that students largely continue to struggle (Kiuhara et al., 2009).

2.3 Areas of Difficulty in Writing for Students With Disabilities and Strategies That Help

Although more research is needed for writing skills, some important conclusions have been drawn. For example, researchers have determined with which parts of the writing process students tend to have difficulty. Quality writing involves planning and follows a logical order; however, many students, including students with disabilities, have difficulties with organization (Santangelo, 2014). Students with learning disabilities, attention-deficit/hyperactivity disorder (ADHD), and/or emotional and behavior disorders often have difficulty planning a response, answering all parts of the writing prompt, and remaining organized throughout the writing response (Ennis & Jolivette, 2014b; Harris & Graham, 1999; Jacobson & Reid, 2012; Ray et al., 2019).

Part of the difficulty students with disabilities have consists of an absence of planning or use of prewriting strategies (Sundeen, 2012). Prewriting takes place before starting to answer the writing prompt; it fleshes out ideas and provides structure to one's response (Ray et al., 2019; Sundeen, 2012). Prewriting also allows students to free up working memory by jotting their ideas down before they forget them and have to hold more than a few ideas in their mind—something that has been shown to help students' writing quality (Torrance & Galbraith, 2006). Writing down ideas during prewriting gives a visual version of ideas to draw connections between and reminds students of what ideas they have already generated, which facilitates the writing process (Ray et al., 2019).

Research has suggested several prewriting strategies to help students produce better planned and more organized writing, including graphic organizers, mind-mapping, procedural facilitators, and brainstorming (Bouck et al., 2010; Evmenova et al., 2016; Sundeen, 2012; Troia, 2014). Graphic organizers have shown a small effect size and give students a visual representation of ideas connected together in a chart or network; these can be completed on paper or electronically (Evmenova et al., 2016; Troia, 2014). Mind-mapping, like graphic organizers, includes one concept in the middle of the paper, with branches leading off of it and to others in a web (Sundeen, 2012). The cognitive process for this technique is usually nonlinear, but students can retrace their steps by following the branches of the web (Sundeen, 2012). When teaching these strategies to students, it is important to explicitly teach the strategy, model it, give scaffolded practice on it, and give feedback on the practice (Sundeen, 2012). A method of teaching writing called SRSD can be beneficial to teach prewriting strategies, because modeling, scaffolding, and the teaching of self-regulation skills are important components of it (Slavin et al., 2019).

Although there are many writing intervention studies, they are less in number compared to those in reading and math; in addition, they often focus on students in elementary school or middle school and may not focus on students with disabilities (Harris & Graham, 2016; Kiuhara et al., 2012; Mason & Graham, 2008; Rogers & Graham, 2008). The current literature review focuses on writing interventions for high school students with disabilities, and the research questions for the present study are as follows:

1. What strategies are being used to teach students with disabilities in grades 9–12 to prepare them to write in response to a prompt?
2. In what populations of students have interventions been administered to prepare students to write been studied and in what settings?

3. What strategies do researchers provide students in preparation to write in response to a prompt, and how is it measured?
4. What are outcomes for participants as a result of prewriting interventions?

2.4 Methods

The systematic literature review began by searching through three databases: PsycARTICLES, PsycINFO, and ERIC. The formatting of the search terms entered into the three databases are the following Boolean strings of terms: ((writ*) OR (writ* AND int*) OR (prewrit*) OR (prewrit* AND int*)) AND ((brainstorm*) OR (outlin*) OR (diagram*) OR (story*) OR (mind*) OR (freewrit*) OR (graphic AND organiz*) OR (map*) OR (list*) OR (web*) OR (cluster*) OR (loop*)) AND ("disab*" OR "sped" OR "special education") AND (adol* OR "secondary and school" OR "middle school" OR "high school").

When the search terms were entered with the criteria of results being peer reviewed and the published time range being November 29, 1975, to December 7, 2020, PsycARTICLES and PsycINFO generated 2,911 articles and ERIC returned 475 articles. From reading the titles and abstracts, 76 articles were identified. Upon further examination by reading each of the 76 articles, 7 articles fit the inclusion criteria (Bouck et al., 2010; Chalk et al., 2005; Jacobson & Reid, 2010; Kiuhara et al., 2012; Mason et al., 2013; Ray et al., 2019; Sundeen, 2012).

For an article to be included in the current study, it had to meet the following inclusion criteria:

1. It had to be written in English and published in a peer-reviewed journal.

2. It had to be published between November 29, 1975 (when the Individuals with Disabilities Education Act [IDEA] was signed into law), and December 7, 2020 (when the search was completed).
3. Students had to have been enrolled in grades 9–12 and identified with a disability under IDEA, as well as have a first language of English.
4. The intervention had to have been given in a school setting in the United States—including public, private, charter, or residential schools—either within the classroom or in a pullout setting.
5. The study could have been experimental, quasi-experimental, or single case, but in group designs, the article must have included disaggregated data for students with disabilities.
6. The independent variable had to have been an intervention that focused on a method of prewriting to answer writing prompts rather than or in combination with other components of writing, such as sentence composition mechanics or editing (e.g., Konrad et al., 2017[1]; Viel-Ruma et al., 2010), or with the prewriting method combined with other skills, such as reading comprehension (e.g., Asaro-Saddler et al., 2018; De La Paz, 2005).

After the electronic search, an ancestral search was completed of the qualifying articles and literature reviews (Cook & Bennett, 2014; Graham & Perin, 2007; Pennington & Delano, 2012; Popham et al., 2018; Rogers & Graham, 2008; Valasa et al., 2014). A total of four additional articles met inclusion criteria (Delano, 2007; Ennis & Jolivette, 2014b; Hoover et al., 2012;

[1] The articles listed in the inclusion criteria did not meet criteria for the reason stated before their in-text citation.

Jacobson & Reid, 2012). Then, a hand search of issues of the *Journal of Special Education* from December 1975 to November 2020 was carried out. During the hand search, no articles were found that met the inclusion criteria.

After completing the search process, 11 studies met the inclusion criteria (Bouck et al., 2010; Chalk et al., 2005; Delano, 2007; Ennis & Jolivette, 2014b; Hoover et al., 2012; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Mason et al., 2013; Ray et al., 2019; Sundeen, 2012). These articles are denoted with an asterisk in the bibliography for easy identification.

2.5 Results

In this paper, specific components were identified and examined in the 11 articles located by the search methods. See Appendix A Table 1 for the information that was pulled from the articles and consolidated here regarding participant characteristics, setting, intervention components, dependent measures, and outcomes.

2.5.1 Participant and Study Characteristics

Across the 11 studies, there were 59 student participants in high school. All four grades were represented, with 8 students in 9th grade (Bouck et al., 2010; Ennis & Jolivette, 2014b; Mason et al., 2013), 29 students in 10th grade (Bouck et al., 2010; Chalk et al., 2005; Delano, 2007; Jacobson & Reid, 2012; Kiuhara et al., 2012; Ray et al., 2019), 18 students in 11th grade (Hoover et al., 2012; Jacobson & Reid, 2010, 2012; Mason et al., 2013; Sundeen, 2012), and 4 students in

12th grade (Bouck et al., 2010; Hoover et al., 2012; Jacobson & Reid, 2010). All of the students were identified with a disability according to IDEA.

When examining the settings of the studies, eight took place only in public high schools (Bouck et al., 2010; Chalk et al., 2005; Hoover et al., 2012; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Mason et al., 2013; Sundeen, 2012), one took place only in a private high school (Ray et al., 2019), one took place with one of the participants attending a private high school and the other participant attending a public high school (Delano, 2007), and one took place in a residential facility that was not specified as public or private (Ennis & Jolivette, 2014b). The specific locations that the studies were conducted in within the high schools or residential facility were diverse. Chalk et al. (2005) used both language arts and world history resource rooms, Sundeen (2012) used a learning strategies resource room, and Bouck et al. (2010) used an instructional support room. Mason et al. (2013) and Ray et al. (2019) used classrooms, whereas Ennis and Jolivette (2014b) specifically used a health classroom; Hoover et al. (2012) did not specify the location but noted that the study took place before and after school hours. Several of the studies used settings that were less academically specific spaces, such as typically using empty offices (Jacobson & Reid, 2012), using a conference room (Delano, 2007), and conducting the study in the media center (Jacobson & Reid, 2010).

2.5.2 Intervention Components

Cumulatively, nine of the studies used SRSD interventions (Chalk et al., 2005; Delano, 2007; Ennis & Jolivette, 2014b; Hoover et al., 2012; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Mason et al., 2013; Ray et al., 2019) and two of the studies used less commonly studied

prewriting interventions (Bouck et al., 2010; Sundeen, 2012). Although nine of the studies used an SRSD intervention, there were a variety of mnemonics paired with it, including the following:

- POW + TREE[2] (Hoover et al., 2012; Mason et al., 2013)
- DARE[3] (Chalk et al., 2005)
- STOP[4] and DARE (Ennis & Jolivette, 2014b; Jacobson & Reid, 2010, 2012)
- STOP, AIMS,[5] and DARE (Kiuhara et al., 2012)
- HIT SONGS^3[6] (Ray et al., 2019)

The remaining instructional strategies that were used included a mind-mapping strategy with the mnemonic MIND[7] in Sundeen's (2012) study, and students used two procedural facilitators while they wrote with FLYPen and FLYPaper, created by LeapFrog, in Bouck et al.'s (2010) study.

2.5.3 Dependent Measures

Across the studies, the measures can be organized into eight categories (see Appendix A Tables 2 and 3). The first category includes counting words, such as the number of words and correct word sequences; this approach was used in 10 studies (Bouck et al., 2010; Chalk et al., 2005; Delano, 2007; Ennis & Jolivette, 2014b; Hoover et al., 2012; Jacobson & Reid, 2010, 2012;

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[2] Pick my ideas, Organize my notes, Write and say more + Topic sentence, Reasons, Explain each reason, Ending

[3] Develop topic sentence, Add supporting detail, Reject arguments from the other side, and End with a conclusion

[4] Suspend judgment, Take a side, Organize ideas, Plan more as you write

[5] Attract the reader's attention, Identify the problem of the topic so the reader understands the issues, Map the context of the problem or provide background information needed to understand the problem, and State the thesis so the premise is clear

[6] Hook, Introduce the topic, and Thesis + (repeated three times) State the perspective, Outlook on the perspective, Need examples, and Give your opinion + Support your thesis, State the relationships between your thesis and the perspectives given in the prompt, and Summary

[7] Main Idea, Numbered subtopics, Details

Kiuhara et al., 2012; Mason et al., 2013; Ray et al., 2019). The second category of measures tallied up the elements that make up an essay with terms for the dependent variables, such as the number of response parts, persuasive parts, functional essay elements, and essay elements; this approach was used in 8 studies (Delano, 2007; Ennis & Jolivette, 2014b; Hoover et al., 2012; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Mason et al., 2013; Ray et al., 2019).

The third category of measures examined the quality of the essays; this approach was used in 7 studies (Bouck et al., 2010; Chalk et al., 2005; Ennis & Jolivette, 2014b; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Mason et al., 2013). The number of planning details, the number of planning details for the main topic, the quality of planning, and the time spent planning make up the fourth category of measures related to planning; this approach was used in 5 studies (Bouck et al., 2010; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Ray et al., 2019). In addition, 4 studies used the fifth category of dependent variables that counted grammar elements with the following measurements: the number of spelling errors, transition words, times the paper topic switched, grammatical errors, and capitalization errors (Bouck et al., 2010; Jacobson & Reid, 2010, 2012; Ray et al., 2019).

The sixth category includes other variables that do not otherwise neatly fit with others, such as the use of the written expression rubric, pretest to post-test of story construction (subtest 8 of the Test of Written Language-3 [TOWL-3] examination), the ACT writing score, a measure of self-efficacy, and an intrinsic motivation inventory; these approaches were used in 3 studies (Ennis & Jolivette, 2014b; Ray et al., 2019; Sundeen, 2012). The seventh category of dependent variables measured the time spent writing and the time spent planning and writing; this approach was used in 2 studies (Jacobson & Reid, 2012; Kiuhara et al., 2012). Finally, the eighth category included

several measures that counted the number of larger chunks of text rather than words; for instance, in Bouck et al. (2010), the number of sentences, topic sentences, and paragraphs was counted.

2.5.4 Outcomes

Overall, eight of the studies measured results by individual participants (Bouck et al., 2010; Delano, 2007; Hoover et al., 2012; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Mason et al., 2013; Ray et al., 2019). In the eight studies that measured word counts, 22 students increased their number of words (Bouck et al., 2010; Delano, 2007; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Ray et al., 2019); in addition, 4 students increased their number of words slightly, but the numbers were not consistent (Hoover et al., 2012), and 1 student decreased their number of words (Bouck et al., 2010). There were seven studies that measured the number of essay elements; in these studies, all but one of the 23 students, increased in that measure (Delano, 2007; Hoover et al., 2012; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Mason et al., 2013; Ray et al., 2019). The single participant who did not increase their number of essay elements did increase their stability from their baseline measurements (Hoover et al., 2012). In the five studies that measured the quality of the essays that participants wrote, all 19 students increased their essay quality (Bouck et al., 2010; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Mason et al., 2013).

In the studies that implemented planning measures, all 13 students increased the amount of time they spent planning (Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012), all 3 students increased both the number of planning details they included and the number of planning details related to the main topic (Bouck et al., 2010), and the 2 students measured for the quality of their planning work increased in their outcomes (Ray et al., 2019). There were four studies that measured elements of grammar; all 3 students improved their number of spelling errors,

grammatical errors, and capitalization errors (Bouck et al., 2010). All 9 of the students whose essays were measured for the number of transition words showed improvement in terms of this measure (Jacobson & Reid, 2010, 2012; Ray et al., 2019). Results from Bouck et al.'s (2010) measure of the number of times the paper topic switched were unclear.

For the unique measure in Ray et al.'s (2019) study of measuring the ACT writing score, 2 of 2 students increased their scores. In the two studies that measured the amount of time spent writing, all 10 students increased the amount of time during which they wrote (Jacobson & Reid, 2012; Kiuhara et al., 2012), and all 6 students increased the time they spent writing and planning combined (Kiuhara et al., 2012). The only study that examined the number of sections of text larger than the number of words found that the number of paragraphs increased for 3 students, the number of topic sentences increased for 3 students, and the number of sentences increased for 2 students but decreased for 1 (Bouck et al., 2010).

For the three studies that measured outcomes at the group level (Chalk et al., 2005; Ennis & Jolivette, 2014b; Sundeen, 2012), two measured word counts; Ennis and Jolivette (2014b) found that all three of the groups of 2 students each in their study increased their correct word sequences. The 15 students in one group in Chalk et al.'s (2005) study had statistically significant findings for number of words during pre-skill training, modeling, maintenance, and generalization, but Chalk et al. (2005) found that only half of the data points during independent practice had statistical significance, and none had statistical significance during controlled practice and postinstruction. Only one of the studies that measured outcomes at the group level measured the number of essay elements; Ennis and Jolivette (2014b) found that the number of essay elements increased for all 6 of their students across three groups. Of the two studies that measured essay quality, essay quality increased for all students in Ennis and Jolivette's (2014b) study, and essay quality increased during

all phases of Chalk et al.'s (2005) study: pre-skill training, modeling, controlled practice, independent practice, postinstruction, maintenance, and generalization.

There were several unique measures in two of the studies, including a measure of self-efficacy, an intrinsic motivation inventory (Ennis & Jolivette, 2014b), a written expression rubric, and pretest to post-test comparison scores on subtest 8 of the TOWL-3 examination (Sundeen, 2012). For the measure of self-efficacy, 2 of the 6 students did not take it, 2 of the students increased their scores on all the measures, and 2 of the students increased in some scores while some scores decreased (Ennis & Jolivette, 2014b). The intrinsic motivation inventory was not taken by 2 of the 6 students, 1 of the students had an outcome where all measures increased, and 3 students increased in some of the measures (Ennis & Jolivette, 2014b). For the written expression rubric, two of the three groups increased; for the pretest to post-test of the TOWL-3 examination, subtest 8, all three of the groups increased (Sundeen, 2012). There were not any measurements conducted in the group-level outcome studies that examined planning, elements of grammar, the time it took students to write, or the number of sentences or paragraphs.

2.6 Discussion

The ability to write serves as a critical lifelong skill for displaying knowledge and communicating (Sundeen, 2012; Taft & Mason, 2011). Despite its importance, half of students graduating from high school cannot write at the college level, with United States businesses collectively spending over $3 billion annually to increase the writing skills of their workers (Kiuhara et al., 2009; National Commission on Writing for America's Families, Schools, and Colleges, 2004). Writing interventions serve as a method to improve the writing abilities of

students before they graduate. The current review synthesized high school prewriting interventions for students with disabilities. Specific questions addressed the specific writing strategies investigated and those outcomes.

Several themes emerged from a review of the literature. First, SRSD research has shown effective results with older students; however, certain design issues exist that pertain to the research-to-practice gap. Second, there are measurement concerns with writing interventions that can be improved. Third, there is the need for more of a focus on teaching and measuring prewriting skills rather than just writing skills.

2.6.1 Why SRSD Is an Effective Intervention

SRSD appeared in most of the reviewed studies. SRSD has been identified as an evidence-based practice (EBP) that recognizes the effectiveness of the instructional method (Harris & Graham, 2016). It is likely due to its EBP status that SRSD dominates writing intervention literature. SRSD has characteristics that are especially effective for students with disabilities (Slavin et al., 2019). The intervention focuses on explicitly stated writing expectations, the development of goals, and instruction on reflecting on one's writing, which helps students with disabilities plan their writing, keep their writing organized, and stay motivated through the writing process (Graham & Harris, 1989; Straub & Alias, 2013; Troia, 2014). Part of the effective nature of SRSD is that students are instructed to think critically about why they are using the strategy, rather than simply being told to use it without the reasoning behind it (Lane et al., 2008; What Works Clearinghouse, 2017).

SRSD follows six steps meant to teach students how to use various writing mnemonic strategies, such as POW + TREE (Harris et al., 2002) and STOP + DARE (De La Paz, 1999).

Initially, students learn what they need to know about the writing strategy, then discuss why it is beneficial to use the strategy and in what situations. The strategy is then modeled for the students and they memorize the mnemonic. Students receive support, via scaffolded steps, in practicing the mnemonic, and, finally, they practice it on their own (Straub & Alias, 2013; What Works Clearinghouse, 2017). An important part of the fidelity of SRSD is to complete all of the intervention steps (Harris, 2016).

2.6.1.1 Concerns Regarding SRSD

Although SRSD is one of the most researched writing interventions overall, there needs to be significantly more research completed to figure out how to transfer the knowledge about SRSD from research to practice (Harris & Graham, 2016). It is great that SRSD has been shown to be effective in the literature, but understanding what supports teachers need to implement it in schools is equally important. SRSD has many benefits, but there are a few concerns about using it as a strategy, including the amount of time the strategy takes to implement and the complexity of the intervention.

There are several reasons why SRSD is not being utilized by teachers. Teachers have difficulties with the amount of time the strategy takes to implement and the complexity of the intervention. When interventions take 200 minutes (Hoover et al., 2012) or 346 minutes (Ennis & Jolivette, 2014b), buy-in from school leaders, who often decide on what types of interventions the teachers in their schools should be trained, can diminish. This significant amount of time to teach an intervention is not always compatible—high school class periods are typically 50 minutes in length, and teachers already have a variety of instructional goals they must attend to. Additionally, many teachers are required to teach a specific curriculum in very little time as it is. In a study by McKeown et al. (2014), teachers could not implement SRSD instruction without needing to pause

twice for three weeks and eight weeks as a result of needing to prepare students for state tests; by the time they returned to SRSD, adherence to treatment fidelity was low. Ultimately, SRSD is complex and requires many steps, which makes it difficult to put into practice as it is designed right now (Harris & Graham, 2016).

An additional reason why SRSD is not always practiced with ease is that practitioners are often not the ones to implement the intervention during research studies. Ennis and Jolivette (2014a) found that of the 11 SRSD studies carried out with students with emotional and behavioral disorders, only 2 of them had a teacher be the one to implement them, which is "is likely due to the complexity of the SRSD approach, which makes it difficult for teachers to implement instruction with fidelity by simply reading about the intervention" (McKeown et al., 2014, p. 15). Given the amount of detail teachers would need to be required to attend to and carry out in the way the interventions were designed, the interventions may not feel socially valid to the practitioners and do nothing to minimize the research-to-practice gap (Cook & Odom, 2013; Fixsen et al., 2009; Odom, 2009). Even when teachers have been taught SRSD in professional development and their fidelity of implementation was measured, the teachers in the study were found to execute SRSD only "with adequate, but lower than expected fidelity" (McKeown et al., 2019, p. 1,483).

A specific form of professional development, practice-based professional development (PBPD), has been used as a method for instructing teachers about how to use SRSD in the classroom (McKeown et al., 2014). PBPD has been found to lead teachers to largely implement SRSD instruction with high fidelity, which improved students' writing (McKeown et al., 2014). However, the PBPD training required two full days of teacher instruction; teachers who did not feel motivated to learn about SRSD had widely varying levels of performance in teaching it to students (McKeown et al., 2014). Districts with the funding and additional staff needed to instruct

teachers for two full days with SRSD using PBPD can likely expect good outcomes for students, as long as there are decent levels of teacher buy-in. Other districts may find implementing SRSD more difficult. Greenwood and Abbot (2001) noted two decades ago that researchers are often unaware of or do not take into account teachers' lack of time and resources, as well as how much of their time is dedicated to instruction that is decided by others or needs to be spent preparing for assessments. Modifying SRSD so that some of the difficulties for implementation are minimized may lessen the research-to-practice gap that exists in the field and improve writing instruction for students (Vogelgesang et al., 2016).

2.6.2 Measurement Concerns in Current Writing Interventions

Two of the most common measurements across the studies were the number of words and the quality of the essay. Although there is value in the simplicity of the number-of-words measure, its actual ability to capture whether students' writing has improved is not always clear. According to Chalk et al. (2005), despite the major growth in word count in students' essays over time, the quality of the essay did not improve to the same degree. Although longer answers are often better, this is not always the case when examining the writing of adolescents (Beers & Nagy, 2009). Less commonly used measurements, such as the number of clauses, the number of words per clause, or CIWS (correct minus incorrect sequences), are measures that can better capture the complexity of quality of writing than the number of words (Jeon et al., 2006; McMaster & Espin, 2007).

The other common measurement, the quality of the essay, which is usually measured with a rubric, also needs further examination. The quality-of-essay measure in writing studies is not usually designed well enough to minimize the subjectivity that rubric scoring causes when examining writing (Rezaei & Lovorn, 2010). Validity and reliability must be accounted for so that

conclusions can be drawn from rubrics. The accuracy and consistency of rubrics impacts the strength of the conclusions (Jonsson & Svingby, 2007). Disagreement in scores can be caused by lack of agreement in how to score, lack of training in the scoring methods, and biases against certain students based on a variety of factors (Davidson et al., 2000).

In a study conducted by Jonsson and Svingby (2007), they examined whether rubrics used by teachers to evaluate student writing in 75 published studies exhibited validity and/or reliability. The findings of the study showed that only one-third of the studies discussed rubric validity (Jonsson & Svingby, 2007). Of those, only a few showed true validity, which suggests that out of the 75 studies that used rubrics to evaluate student writing, only a small portion of those can argue that their rubrics accurately measured writing (Jonsson & Svingby, 2007). The findings also showed that the vast majority of studies did not measure intra-rater reliability and that many studies failed to meet the standard of 70% agreement to be considered consistent for inter-rater reliability (Jonsson & Svingby, 2007).

However, when examining reliability from the perspective of within one point of difference in score, known as the percentage of adjacent agreement (Rezaei & Lovorn, 2010), 90% of the studies displayed inter-rater reliability (Jonsson & Svingby, 2007). Although the level of uniformity produced by adjacent agreement is often useful in measuring student progress in classrooms, for the purposes of research, the second inter-rater reliability measure of within one point leaves higher levels of consensus to be desired. When considering measures to use in writing intervention studies, taking into account the complexity that measuring writing entails, creating tools that are reliable and valid is important for advancing the field in the future.

2.6.3 The Lack of Focus on Prewriting Interventions and Measures

Few of the studies that included or primarily targeted prewriting skills actually measured how well the intervention taught or improved students' ability to prewrite (Bouck et al., 2010; Jacobson & Reid, 2010, 2012; Kiuhara et al., 2012; Ray et al., 2019). The nine studies that used SRSD instruction included prewriting in addition to teaching students how to write an entire essay and did not always measure the prewriting component. Based on what can be gathered from the few studies that did measure prewriting, there were positive results for all students in all measures (see Results; Outcomes). Prewriting is such an important component of the writing process and helps students in many of the areas of writing that they have difficulty with; the lack of studies that focus solely on developing prewriting interventions and then measuring the efficacy of the prewriting as a stage of writing unto itself, rather than its impact on the next stage of the writing process (writing in response to the prompt), is part of the larger issue with the general lack of focus on writing intervention studies.

2.6.4 Limitations of the Current Study

The current systematic literature review contained several limitations. The first was that the search for the articles was completed by one person and therefore did not include verification via a second researcher using the same methods to identify articles. This independent search could have led to articles that were generated by the current search but were excluded by mistake. Also, additional articles may have been found by adding another database, such as Google Scholar, to the search or completing a hand search of an additional journal.

2.6.5 Implications for Research and Practice

Although there are a number of writing intervention studies that are designed for high school–level students with disabilities, as discussed earlier, most of the strategies are taught to students using SRSD. Due to SRSD's often-onerous demands upon teachers, if researchers modify the typically long iterations of SRSD, it may help to minimize the research-to-practice gap with true implementation of easy-to-learn writing strategies for practitioners to teach students. Finally, the validity and reliability of prewriting and writing intervention measures can be improved. Comparing essay quality rubric measures with measures that have already displayed validity is one way to strengthen the rubric measures and is something that more researchers should consider adding to their studies when planning the methodologies (Jonsson & Svingby, 2007).

Researchers can also ensure that when trying to measure how well a prewriting intervention, or a prewriting part of a larger writing intervention, works that the measures accurately capture the effects of those independent variables. Rezaei and Lovorn (2010) posit that rigorous, continuous training with specific rubrics is needed to increase reliability. Researchers should take such information with the understanding that it is suspected that reliability does not last long after training. Training rubric-scorers periodically, even throughout the duration of a study, is worthwhile; in addition, if teachers are the rubric-scorers, assumptions about their general pedagogical training on rubrics may not be sufficient to provide reliable results, and focused training on the rubric in the study is needed (Rezaei & Lovorn, 2010).

2.6.6 Future Directions for Research

Future directions for research include the use of SRSD for only parts of the writing process such as prewriting. In the research, the mnemonics taught to students with SRSD teach students how to write full essays. Focusing on one step of the process will shorten the length of time that the intervention takes to implement. It will also help classroom teachers focus their attention on specific skills in the writing process that their students need help with, rather than all parts of it. Another direction the researchers can go in is to figure out how to implement a practice-based form of professional development that takes less than two days to teach practitioners. As long as the barrier to learning how to implement SRSD with integrity is so large, the less likely it is to be put into practice. As so much focus in the literature is on SRSD and it does show positive results, figuring out how to bridge the research-to-practice gap is a worthy goal. Finally, a qualitative study examining what supports teachers feel they need to implement writing interventions more often in the classroom and what students find helpful from writing instruction may offer increased context for the reasons there is a research-to-practice gap.

3.0 Methods

3.1 Setting and Participants

The study was conducted remotely, but participants were recruited from three schools in Pennsylvania. Six high school special education teachers participated. I originally sought six to eight participants. I reached out to at least a dozen high school special education teachers, but only six were interested or responded at all. This level of response may be due in part to COVID-19 fatigue. Many special education teachers who co-teach in classrooms often tend to use writing as a skill (such as in English and social studies classes) and/or teach writing in pullout or resource classes. I reached out to high school special education teachers who taught English or social studies first for recruitment. Five of the six participants taught English, whereas one taught science.

Abby[8] is a white female who has been teaching for 14 years. She has a bachelor's degree in psychology and a master's degree in education. She holds certifications in special education 7–12, English 7–12, and elementary K-6. She teaches pullout English, co-teaches in English, and teaches an academic support class. The district she teaches in is suburban and has a majority white population of students, and less than 10% of the students receive free or reduced lunch.

Beth is a white female who has been teaching for 11 years. She has a bachelor's degree and a master's degree in special education. She is currently pursuing a doctoral degree in special education administration. She holds certifications in special education neonate–12, English 7–12, and elementary K–8. She teaches pullout English and co-teaches in English. She works in a district

[8] Her name and the names of other participants in this study have been changed to pseudonyms in this paper.

that is suburban; the majority of the student body is Black, and 80% of the students receive free or reduced lunch.

Cara is a white female who has been teaching for 19 years. She has a bachelor's degree in elementary and special education and a master's degree in reading specialization. She holds certifications in special education K–12, English 9–12, elementary K–6, and reading specialist K–12. She teaches pullout English, co-teaches in English, and teaches an academic support class. She teaches in a suburban district with a majority white student body where less than 10% of the students receive free or reduced lunch.

Dawn is a white female who has been teaching for 14 years. She has a bachelor's degree and a master's degree in elementary education. She holds certifications in special education K–12, English 7–9, and elementary K–6. She teaches pullout English, co-teaches in English, and teaches an academic support class. The district she teaches in is suburban and has a majority white population of students, and less than 10% of the students receive free or reduced lunch.

Elsa is a white female who has been teaching for 20 years. She has a bachelor's degree in elementary education and special education. She holds certifications in special education K–12, English 7–9, math 7–9, and elementary K–6. She teaches pullout English, co-teaches in English, and teaches an academic support class. She teaches in a suburban district with a majority white student body where less than 10% of the students receive free or reduced lunch.

Faye is a white female who has been teaching for 7 years. She has a bachelor's degree in natural science and a master's degree in special education. She holds certifications in special education 7–12, biology 7–12, chemistry 7–12, and physical science 7–12. She teaches general science for Pennsylvania Alternate System of Assessment–eligible students, co-teaches in biology, co-teaches in chemistry, and teaches an executive functioning support class. The district she

teaches in can be described as suburban, with a population of mostly white and Asian students where less than 10% of the students receive free or reduced lunch.

3.2 Materials

There was a short survey created in Qualtrics that was emailed to and completed by participants prior to participating in the interview (see Appendix B). Participants answered a few demographic questions, as well as a couple of multiple-choice questions about the amount of time they spend teaching writing, how comfortable they feel teaching writing, how much time they spend learning how to teach writing in professional development, and how often they give students a technique or template that encourages prewriting. The answers to survey questions informed several of the questions in the interview protocol.

I followed an interview protocol when interviewing participants (see Appendix C). The interview protocol included an introduction where the principal investigator explained who they were and the purpose of the study. The introduction also informed participants that they did not need to answer any questions they did not wish to answer and that their identities would not be revealed in any published work that comes from the interviews. Part I of the protocol asked participants general background questions about their experiences in teaching. After this, there were three more sections that asked participants about their experiences teaching writing and their perceptions about students' writing abilities. Finally, there was a concluding section that prompted participants to share anything else that they thought might be relevant.

3.3 Research Design

The survey was given online through Qualtrics. The interviews were conducted and audio recorded via Zoom. The interviews took between 45 and 90 minutes. The transcribed recordings were qualitatively coded for analysis.

3.4 Research Procedures

Qualitative analysis is not a commonly used methodology in special education research. However, qualitative methods are commonly used in interviewing teachers and in examining English and writing instruction. As expressed earlier, writing interventions and instructional methods need to be socially valid to increase the amount and quality of writing instruction in the classroom (Vogelgesang et al., 2016). Interviewing currently practicing teachers is one important way to examine how teachers teach writing and gives context behind the thoughts of these practitioners.

The transcribed interviews were coded with a variety of coding methods. An inductive or emergent method of coding was used as the transcripts were analyzed (Benaquisto, 2008; Saldaña, 2016). For the first round of coding, structural coding was used to align with the formatting of the research questions. Structural coding is often used in qualitative studies that have a semi-structured interview protocol, as this study does, and makes use of concepts that were investigated in the interview and originally derived from the research questions; this method of coding naturally organized the findings (MacQueen et al., 1998; Saldaña, 2016). Attribute coding was also used during the first round of coding. Attribute coding was utilized to identify personal information

from the transcripts, such as the length of time the participant had been a teacher and what their current teaching position was (Saldaña, 2016). This method of coding is used in most qualitative studies to identify important demographic information (Saldaña, 2016).

The second round of coding used subcoding and pattern coding (Miles et al., 2014; Saldaña, 2016). Subcoding helped the more encompassing parent codes, which had been originally derived from the first round of structural coding, be imbued with more detail by the addition of subcodes (Miles et al., 2014; Saldaña, 2016). Finally, pattern coding grouped the parent codes into themes (Miles et al., 2014).

3.5 Intercoder Reliability

Two researchers both coded two of the six, or 33%, of the transcripts for intercoder reliability. Intercoder reliability was measured by determining which codes the first and second coders agreed with and which codes (see Appendix D) the first and second coders disagreed with. An agreement meant that both coders had selected the same code(s) for the chunk of text. A disagreement meant that either the first coder or the second coder had selected a code or codes that the other had not. Using this, I counted the number of agreements and disagreements and calculated the number of agreements divided by the number of agreements and disagreements. This resulted in a percentage of agreements (Miles & Huberman, 1994). The first intercoder reliability score was 81% and the second was 72%, which is an average of 77% agreement.

4.0 Results

The research questions addressed (a) the practices of high school special education teachers teaching writing, (b) how they perceive and measure students' writing, and (c) the challenges of instructing students in writing as well as the support teachers need to teach it. Results from the surveys (see Appendix A Table 4) and interviews (see Appendix A Table 5) indicated that participating teachers use a variety of tools and assignments to instruct students in writing. However, the same teachers are largely unfamiliar with and do not use writing interventions. Teachers generally noted that students had good ideas but did not present the ideas in an organized way in their responses without prewriting. Finally, the biggest difficulty teachers expressed regarding teaching writing was the lack of instruction in how to teach writing in either school or professional development sessions.

4.1 Practices in Writing Instruction

The first emergent theme from the surveys and interviews of participants addresses the first research question regarding the practices that high school special education teachers engage in when teaching writing. The teachers in the study used various pedagogical techniques to get students started with the writing process. Students were often given a template to start the prewriting process, which they were instructed to follow when writing a response to a given prompt. This is based on teachers answering either "most of the time" or "all of the time" on the survey in regard to providing and promoting a prewriting template.

During our interview, Beth described several of the methods she uses to encourage her students to generate ideas and write in an organized way:

> The other thing that I am a huge fan of lately is I will demo-write. So, if I'm asking them for a paragraph, I'll get asked for a topic, you know? The class will shout out movies. Cool. So, off on my smart board, we write things like, "Here's my movies, my favorite movies are," and we'll demo-write a sentence or a paragraph so that they see, "OK, here's my main idea. Here's the supporting details that I'm providing in this sentence." Then it, overall, goes to, we just keep putting pieces like that together. I'm also lately a huge fan of using past students' work and blacking out their names and saying like, "This is what a kid in your situation two years ago wrote," and letting them see what the structure is, let 'em kind of discover it for themselves. The self-discovery seems to really help them. . . . When they're self-discovering, based on former student things or even their own writing, they seem to retain it a little bit and it becomes a little bit more imprinted with them. . . . If there is something that I'm looking for that is specifically structured, then I'm giving them a graphic organizer. Um, in which case I'll use, I even, like, color-code things and we have highlighters and . . . we play.

The practices that Beth describes of teacher-led modeling that incorporates brainstorming, using previous student work to model, giving a graphic organizer to prewrite, and highlighting

one's own work to structure writing are all techniques that teachers have used for years to teach writing (Bouck et al., 2010; Evmenova et al., 2016; Sundeen, 2012; Troia, 2014).

Elsa also described several of the practices that she uses to help students organize their writing:

> I clearly, like, especially for those classes, like, line it out, like . . . an outline right. Where it's, like, telling exactly what to do for each line. So, then they type it and then they, you know, take the outline out and just kind of cut and paste it. Yeah. So, I mean their organization is, is OK because I've organized it basically for them. . . . For prewriting, we brainstorm, um, even with writing the thesis, it's very, you know, it's, I, I have even a rubric for that. . . . And even to where it's almost, like, fill-in-the-blank–type things. Like, they were, they pick, you know, the, we did *Night*, which is about the Holocaust. Yeah. And they were to pick either dehumanization or loss of faith. So, with that, I mean, it was just kind of, like, even filling in to get their thesis. So, more than even a sentence-starter, but, um, like, a, you know, a sentence fill-in-the-blank, you know, like, you can choose what theme you're . . . choosing.

Elsa describes her use of outlines, rubrics, brainstorming, and choice of themes to fill in the essay to help keep students' writing highly structured. Her observation that she has essentially done the organizing work for the students is interesting because it shows that she is aware that without the steps she takes with students when they write, their writing would likely be unorganized. Many researchers have found that it is not unusual for students with disabilities to

have difficulty with organizing and planning their writing (Ennis & Jolivette, 2014b; Harris & Graham, 1999; Jacobson & Reid, 2012; Ray et al., 2019).

4.2 Perceptions and Assessment of Students' Writing

The second emergent theme from the data answers the second research question about how the high school special education teachers in the study perceived the writing abilities of their students. When asked what their students' writing strengths were and what they tend to need the most help with writing, Faye said:

> I think my students are very creative and have very good ideas. . . . I think their grammar is usually pretty good. It's just, you know, those prewriting strategies that are so important for them to get started . . . I think a lot of them wouldn't even start. . . . I have a lot of students with, like, ADHD, um, that just, they need that structure to get their ideas down before they will even start. They need to have, like, a roadmap in their head before they even start writing the writing process. And I think once they get started and they have their writing down and we have something to talk about, yeah. And get ideas back from, I think they do a lot better, and it goes a lot quicker and easier for them.

Faye comments that prewriting helps get students started and organized—both of which are parts of the writing process that some of her students have difficulty with. Her students

generally are able to generate good ideas and know how to use grammar. Dawn notes similar strengths and weaknesses with her students' writing:

> I think they're pretty good at the content. Like, they don't seem to struggle with amount. It's more like organization and structure. . . . Like, I have one student that could write for hours, like, has so much to say about everything. But it'll be like one continuous sentence. . . . And they'll miss certain pieces of what the prompt is asking them if I just let them kind of go for it.

Again, Dawn recognizes that her students tend to have good ideas and know the content. However, they need to be given something to structure their response during the prewriting phase of the process instead of just launching into writing.

4.3 Challenges to and Supports Needed to Teach Writing

The third emergent theme from the surveys and interviews addresses the third research question concerning the challenges the teachers in this study have experienced in terms of instructing students in writing and what supports could assuage these difficulties. Of the five teachers who answered the open-ended survey question asking them to write three words that describe how they feel about teaching writing, four of them chose at least one word indicating that it was demanding, with the words "grueling" (Faye), "frustrating" (Cara), "hindered" (Beth), and "challenging" (Abby) being used. This is unsurprising, given the findings that there is an overwhelming lack of training on teaching writing in their education classes or Teach For America

training, lack of time spent in professional development where the topic is focused on writing instruction, and lack of planning time with other teachers.

Cara discusses how although reading and writing education complement each other, she could not remember learning about how to teach writing in any of her courses:

> This was a long time ago. You know, I, um, in grad school, and I know the focus was on reading, which seems silly [because] they go hand in hand. I don't remember having any coursework on writing that I can recall. And then, in undergrad, I think there was very little as well because my, um, initial, you know, I had this special education and the elementary education and there wasn't this thought out that I would be a high school English teacher and that, so I don't, I mean, no, I don't feel like. I'm trying to think. I'm sure there were things about elementary writing that were incorporated into some of the courses.

Although Cara notes that perhaps the lack of writing instruction training was due to her focus in special education and elementary education rather than secondary English, this ignores that special education teachers getting certified through the secondary years will need to teach writing to their students. After the participants' schooling, the amount of training and focus on writing instruction continued to be low. In the survey, when asked how often professional development sessions related to the teaching of writing to students, two of the participants responded that it was addressed about 10% of the time, whereas the other four participants answered "none of the time." Another participant pointed out how many teachers feel about

instruction in writing, saying, “I think a ton of teachers shy away from writing because they weren’t ever thoroughly instructed on how to teach writing” (Beth).

The teachers in the study also noted how they wished that they had more time to plan with one another. Abby discussed how a vertical integration of the special education English teachers from 9th to 12th grade would be helpful:

> Myself and the 12th grade teacher were trying to align ourselves a little bit more . . . [for] the process, especially for writing actually. So, like . . . the graphic organizers that I use are being shared with her, and she’s using similar versions and things like that. So that, that can be a little bit more streamlined. We, the 10th grade teacher was out on a sabbatical for part of the year, this year. So, like, that we haven’t had that opportunity just because of, like, she’s out. But that would be something I think I would really like to see is that the four of us really having a very nice streamlined process. But nobody’s gonna dictate that for us. Like, we would have to come up with that on our own.

Unfortunately, as she indicates at the end, this idea is not being incorporated as a vertical curriculum goal, and it would be up to the teachers to create it. The amount of time it takes to align content and materials from 9th to 12th grade, or even across a grade, and being given that time during the school day or during trainings is also not a priority, as Dawn discusses:

> So, at the beginning of the year, there was definitely a small chunk of time. So, 9th grade English teachers were talking. They were meeting together. I’m not technically considered a 9th grade English

> teacher. So, like there was a special ed meeting going on that I just kinda removed myself from for, like, 30 minutes and went to the English one. So, they don't, like, purposefully include learning support in the gen ed curriculum planning.

Dawn had to take the opportunity on her own to meet with the general education English teachers. Even so, she had only about 30 minutes to meet with them. When co-teachers are not given time to plan with one another, the level of instruction that could be given is likely not as high (Ploessl et al., 2010). Given how few students with disabilities produce good quality writing, shared planning time that would allow teachers to focus on improving writing instruction could be beneficial to students (Aud et al., 2012). However, districts show that more cohesive instruction is not a priority when they do not give teachers who teach the same subject the time to collaborate.

5.0 Discussion

5.1 Multiple Methods of Writing Instruction, But Not Evidence-Based Writing Interventions

The results of the surveys and interviews revealed that the high school special education participants in the study use a variety of methods to teach students how to generate ideas for writing, how to prewrite, and how to stay organized while writing. The teachers in these studies give significant support and show creativity in the ways they support their students' writing. However, when asked if they used specific writing interventions, they reported that they did not use them often—they did not know of any that were not for elementary students or know about any at all. All six of the teachers in the study had never heard of SRSD, which, from previous sections of this paper, was found to be the most common in the research literature (Graham & Harris, 2020).

Several of the participants indicated that they thought that their high school students with disabilities could benefit from interventions and would be interested in learning about and using interventions; this study and other studies indicate that the disconnect between research and practice does not have to exist (Gallavan et al., 2007). The little instruction they have received, and the knowledge that they have accumulated through their teaching experience, has taught them how to implement writing instruction practices (Troia et al., 2009). However, it has not taught them evidence-based writing interventions, like SRSD, that researchers have found to be effective for improving students' writing (Graham & Harris, 2020; Harris & Graham, 2016; Slavin et al., 2019).

When teachers have not been exposed to SRSD or other writing interventions, their students cannot experience the myriad of benefits that these interventions convey. For example, one of the skills that students gain from SRSD is learning the reasoning behind why they are using the strategy and practicing it on their own (Lane et al., 2008; Straub & Alias, 2013; What Works Clearinghouse, 2017). Many of the teachers in the study noted that, without the practices they were using with students to structure their writing, students' responses would be very unorganized; given this, students are not learning how to take the steps to write well independently, which is a skill they will need once they move on from high school (Sundeen, 2012; Taft & Mason, 2011).

5.2 The Power of Prewriting

The teachers in this study recognized that prewriting is an incredibly important part of the writing process. In the research, prewriting has been shown to help students decide which ideas are worth keeping and which ones they should not write about (Ray et al., 2019; Sundeen, 2012). Several of the teachers noted that their students had good ideas or knew the content, but without prewriting, their responses would not be as clear. Students with learning disabilities have been found to plan out their writing for a shorter length of time than students without disabilities (Gillespie & Graham, 2014). They also tend to approach the writing process without a structure in mind; instead, they typically write the information they know is relevant for the expected length of the paper without keeping in mind that it should be organized for the reader (Graham, 1990; Harris & Graham, 1999).

Some of the teachers in the study also noted that prewriting helps students with disabilities, like those with ADHD, get started. Prewriting can be less intimidating as a starting point for

writing; rather than launching straight into a well-organized full response, students are able to jot their ideas down and brainstorm without worrying about mistakes and the final product (Dhanya & Alamelu, 2020; Hodges, 2017). Perhaps, what is even more helpful is that during the writing process, students can refer back to their prewriting as often as they need to keep the writing process going (Hodges, 2017).

5.3 Training Teachers on How to Teach Writing

The findings of this study revealed that at least some teachers have not been trained on how to teach writing during their schooling and that districts are not helping teachers to get the training they need to teach this important skill during professional development. Special education teachers teach writing in life skills classrooms and in pullout and co-taught classrooms in the core subjects. Given the importance of learning how to write, increasing the amount of training that teachers receive on writing instruction is critical (Sundeen, 2012; Taft & Mason, 2011).

Several studies have found that teacher candidates generally feel unsure about how to teach writing effectively in the classroom (Gallavan et al., 2007; Hodges, et al., 2019; Myers et al., 2016). Many teacher candidates across the United States do not receive any or adequate instruction during their schooling (Hillocks, 2006; Lehman, 2017; Myers et al., 2016; National Commission on Writing in America's Schools and Colleges, 2003; Poch et al., 2020). Writing instruction coursework is rarely the focus of an entire course; rather, it tends to make up a portion of a class on reading methods (Myers et al., 2016). Because school districts are often not providing training to fill in those gaps, teachers sometimes turn to each other to learn how to teach writing (Lehman, 2017). This time spent collaborating, often between a more experienced and less experienced

teacher, has been shown as a successful method of incorporating effective writing practices in classrooms (Lehman, 2017). Additionally, in a study by Ciampa and Gallagher (2016) focusing on vertically aligning literacy instructional practices from grade to grade—something that some of the participants in this study wished they had more collaborative planning time to do—led to increased knowledge of instructional tools between teachers and consistency across grades for students.

Universities are where most teachers in the country receive their education, and the overall lapse in focus on teaching writing at these institutions deserves more attention (Morgan & Pytash, 2014). Until change occurs and teachers are exiting their degree programs with the tools to teach writing well, school districts need to provide professional development opportunities to teachers that focus on writing instruction. Additional ways that school districts can expand the writing instruction knowledge of their teachers is to give planning time for self-directed research and collaboration with colleagues (Lehman, 2017). School districts can also give teachers shared planning time, both between same-subject teachers across a grade and same-subject teachers of various grades.

5.4 Strengths and Limitations of the Study

Triangulation strengthened the findings of the study; the survey given to each participant in combination with the interview produced multiple data sources to find themes across both (Onwuegbuzie & Leech, 2007). The dependability of the study is reflected by the interviewing process being completed by one person, with the same interview protocol and surveys being completed by participants before each of them were interviewed (Miles et al., 2014). Finally,

although participants taught in three different districts, the generalizability of the study is not as strong as it could be, given that they all currently taught in Pennsylvania public schools and that the overall number of participants was quite small.

5.5 Implications for Practitioners

As a result of this study, school districts could speak with currently employed teachers to find out how comfortable their teachers are with teaching writing; they could provide professional development to those who do not feel they are teaching writing as effectively as they could be. Also, school districts could consider making policy decisions that limit teacher turnover. Because students with teachers who have more experience teaching writing have been found to display more progress in the skill (Troia et al., 2009), a school district that seeks to limit teacher turnover may also improve the writing instruction students receive.

Education programs at universities have a large impact on training teachers (Morgan & Pytash, 2014). University program administrators could examine whether their teacher candidates are receiving enough coursework in writing instruction such that they feel confident teaching it once they graduate. Universities that find that they offer strong writing instruction in their programs could be analyzed to advance others. If they determine that their graduates express that they need more instruction in teaching writing, they can turn to studies such as this one, among others, to discover how to restructure coursework.

Additionally, both districts and universities should think about the skills that special education teachers need, given the diversity of roles that they may teach as. Common high school special education teacher roles in districts include teaching in life skills classrooms, behaviorally

focused classrooms, and pullout classes, as well as co-teaching. The latter two roles require that special education teachers have competency in the content they are teaching, as well as be knowledgeable in special education. Universities that do not require that that their students in a special education program specialize in a content's skills as much as English, math, science or social studies teachers do, but go on to teach English, math, science, or social studies, may not have the training to teach those courses as well as their content teacher counterparts. Universities should consider requiring that students who major in high school special education, also get training in, or major in, a content area as well. Districts should ensure that the teachers who teach pullout classes and co-teach have had enough training in the content of the course they are teaching.

5.6 Future Directions for Research

From studies on writing interventions to studies about teachers' views on teaching writing, there has been less attention paid to writing than the other two R's: reading and 'rithmetic (Harris & Graham, 2016; Slavin et al., 2019). If writing continues to be researched less, the research-to-practice gap will likely remain. In general, more studies on writing instruction are needed to further the understanding of what it looks like in practice. Building from this study, future researchers could conduct an observational study that involves taking field notes on how writing instruction is being carried out in high school special education classrooms. Researchers could then interview the teachers they observe to get deeper information on why they chose to teach certain practices. An additional dimension of this research could examine how the teachers feel about their own writing abilities. Their own perceptions of their writing skills could affect how they teach writing.

Another topic of study that builds off this research would be to interview high school special education teachers and some of their students. Researchers could compare what the teachers felt aided students in their writing and what the students felt helped them. What students find to be socially valid may be different than what teachers do; knowledge about what students think is useful is important because it will affect what tools they carry with them to help them write in the future.

Finally, future researchers should keep in mind that it is important to not simply study what they think may be most effective in the classroom without also speaking with practitioners to find instructional methods that are socially valid (Vogelgesang et al., 2016). For example, developing and studying writing interventions that teachers cannot find the time to implement does not help students receive better writing instruction. Another future study option is to expand the current study to increase the generalizability of these findings by seeking participants across the country and conducting a larger study; for example, an expansion of the survey while eliminating the interview could help reach a larger number of participants more easily.

5.7 Conclusion

All the teachers in the current study professed the importance of writing for their students' academic success and life after they graduate in the professional, personal, and collegiate settings they may pursue. This study had three main findings. The first is that high school special education teachers use many different types of writing instructional tools to teach writing, but do not use interventions. The second is that high school special education teachers find that their students tend to know the content and generate good ideas, but without significant support with prewriting,

they do not know how to organize that information in writing assignments. Third, high school special education teachers are not receiving much or any training on teaching writing. One major support that would help them teach writing is increased planning time with their colleagues who teach the same subject in the same grade as well as across grades, but their schools tend not to provide that either.

Although there is generally a lack of studies investigating writing instruction, especially at the high school level for students with disabilities, the findings here support what is in the literature. The expansion of knowledge in this part of the research is important for bettering writing instruction for high school students with disabilities and understanding how to diminish the research-to-practice gap in implementing researched writing interventions with fidelity in the classroom.

Appendix A Tables

Table 1 Study Characteristics

Study	Participant Characteristics	Setting	Intervention Components	Dependent Measures	Outcomes
Bouck et al., 2010	3 high school students: 1 in 9th grade with LD, 1 in 10th grade with mild ID, 1 in 12th with mild ID	Public high school; instructional support room	LeapFrog Technologies' FLYPen with FLYPaper writing software with two PFs: the Idea Map and the Drafting Page	NoPD, NoPD for the main topic, NoPTS, NoP, NoTS, NoS, NoW, NoCE, NoGE, NoSE, and QoE	During intervention: NoPD, 3/3 increased; NoPD for the main topic, 3/3 increased; NoPTS, UtD; NoP, 3/3 increased; NoTS, 3/3 increased; NoS, 2/3 increased, 1 decreased; NoW, 2/3 increased, 1 decreased; NoCE, 3/3 Inc/Wors; NoGE, 3/3 Inc/Wors; NoSE, 3/3 Inc/Wors; QoE, 3/3 increased
Chalk et al., 2005	15 students with LD in 10th grade	Public high school; language arts or world history resource rooms	SRSD with DARE mnemonic	NoW, QoE	Testing StSig for each condition from baseline: Pre-skill training: NoW, StSigInc; QoE, StSigInc Modeling: NoW, StSigInc; QoE, StSigInc Controlled practice: NoW, no StSigInc; QoE, StSigInc IP: NoW, half of IP data points had a

Table 1 (cont'd)					StSigInc, half of IP data points had no StSigInc; QoE, StSigInc Postinstruction: NoW, no StSigInc; QoE, StSigInc Maintenance: NoW, StSigInc; QoE, StSigInc Generalization: NoW, StSigInc; QoE, StSigInc
Delano, 2007	2 high school students with autism spectrum disorder in 10th grade	1 student attended private high school, 1 student attended public high school; conference room near the PI's office	Creating and watching self-made videos of word increasing self-monitoring strategy and TREE mnemonic strategy	NoW, NoFEE	During intervention: NoW, 2/2 increased; NoFEE, 2/2 increased
Ennis & Jolivette, 2014b	Six 9th grade students with EBD in 3 groups	Residential facility, private versus public not specified; health class	SRSD with STOP and DARE mnemonics	NoEE, QoE, CWS, MSE, IMI	Overall student mean during intervention: NoEE, increased; QoE, increased; CWS, increased; MSE, 2/6 did not take, 2/6 all measures increased, 2/6 some measures increased and some decreased; IMI, 2/6 did not take, 1/6 all measures increased, 3/6 some measures increased
Hoover et al., 2012	4 students with LD: 2 in	Public high school; nonspecified	SRSD with POW and TREE mnemonic	NoRP, NoW	During postinstruction: NoRP, 3/4

	11th grade, 2 in 12th grade	room in GED school; met before/after school hours			increased NoRP, 1/4 more stability from baseline; NoW, 4/4 had slight increase, but all inconsistent
Jacobson & Reid, 2010 Table 1 (cont'd)	3 students with other health impairment: 2 in 11th grade and 1 in 12th grade	Public high school; media center	SRSD with STOP and DARE mnemonics	TSP, NoEE, NoW, NoTW, QoE	From baseline to postinstruction: TSP, 3/3 increased; NoEE, 3/3 increased; NoW, 3/3 increased; NoTW, 3/3 increased; QoE, 3/3 increased
Jacobson & Reid, 2012	4 students with ADHD: 3 in 10th grade and 1 in 11th grade	Public high school; usually in an empty office	SRSD with STOP and DARE mnemonics	TSP, TSW, NoEE, NoW, NoTW, QoE	From baseline to postinstruction: TSP, 4/4 increased; TSW, 4/4 increased; NoEE, 4/4 increased; NoW, 4/4 increased; NoTW, 4/4 increased; QoE, 4/4 increased
Kiuhara et al., 2012	Six students in 10th grade: 3 with ADHD, 2 with LD, 1 with developmental delays and S/LI	Public high school; study hall	SRSD with STOP, AIMS, and DARE mnemonics	NoEE, NoFEE, NoW, TSP, TSW, TSPaW, QoE	From baseline to postinstruction: NoEE, 6/6 increased; NoFEE, 6/6 increased; NoW, 6/6 increased; TSP, 6/6 increased; TSW, 6/6 increased; TSPaW, 6/6 increased; QoE, 6/6 increased

Mason et al., 2013	Three students with EBD: 2 in 11th grade and 1 in 9th grade	Public high school; conducted in a classroom before or after school	SRSD with POW and TREE mnemonics	QoE, NoPP, NoW	From baseline to postinstruction: QoE, 3/3 increased; NoPP, 3/3 increased; NoW, 3/3 increased
Ray et al., 2019	Two students in 10th grade: 1 with ADHD and 1 with an LD in dysgraphia and dyslexia	Private high school; in a classroom	SRSD with HIT SONGS^3 mnemonic	QoP, ACT writing score, NoEE, NoW, NoTW	From baseline to postinstruction: QoP, 2/2 increased; ACT writing score, 2/2 increased; NoEE, 2/2 increased; NoW, 2/2 increased; NoTW, 2/2 increased
Sundeen, 2012	Eleven students in 11th grade with LD in 3 groups	Public high school; learning strategies resource room	Mind-mapping strategy with MIND mnemonic	WER scores, PrT to PoT of story construction, subtest 8 of the TOWL-3	2/3 groups increased WER scores; 3/3 groups increased PrT to PoT on the TOWL-3

Note. ADHD = attention-deficit/hyperactivity disorder; AIMS = Attract the reader's attention, Identify the problem of the topic so the reader understands the issues, Map the context of the problem or provide background information needed to understand the problem, and State the thesis so the premise is clear; cont'd = continued; CWS = correct word sequences; DARE = Develop topic sentence, Add supporting detail, Reject arguments from the other side, and End with a conclusion; EBD = emotional and behavioral disorder; GED = General education; HIT SONGS^3 = Hook, Introduce the topic, and Thesis + (repeated three times) State the perspective, Outlook on the perspective, Need examples, and Give your opinion + Support your thesis, State the relationships between your thesis and the perspectives given in the prompt, and Summary; ID = intellectual disability; IMI = intrinsic motivation inventory; Inc/Wors = increased therefore worsened; IP = independent practice; LD = learning disability; MIND = Main Idea, Numbered subtopics, Details; MSE = measure of self-efficacy; NoCE = number of capitalization errors; NoEE = number of essay elements; NoFEE = number of functional essay elements; NoGE = number of grammatical errors; NoP = number of paragraphs; NoPD = number of planning details; NoPP = number of persuasive parts; NoPTS = number of times paper topic switched; NoRP = number of response parts; NoS = number of sentences; NoSE = number of spelling errors; NoTS = number of topic sentences; NoTW = number of transition words; NoW = number of words; PF = procedural facilitator; PI = principal investigator; POW = Pick my ideas, Organize my notes, Write and say more; PrT to PoT = pre- to post-test; QoE = quality of essay; QoP = quality of planning; S/LI = speech/language impairment; SRSD = self-regulated strategy development; STOP = Suspend judgment, Take a side, Organize ideas, Plan more as you write; StSigInc = statistically significant increase; TOWL-3 = Test of Written Language-3; TREE = Topic sentence, Reasons, Explain each reason, Ending; TSP = time spent planning; TSPaW = time spent planning and writing; TSW = time spent writing; UtD = unable to determine based on article information; WER = written expression rubric

Table 2 Dependent Variables

	Number of words (NoW)	Correct word sequences (CWS)	Number of response parts (NoRP)	Number of persuasive parts (NoPP)	Number of functional essay elements (NoFEE)	Number of essay elements (NoEE)	Quality of essay (QoE)	Number of planning details (NoPD)	NoPD for the main topic	Quality of planning (QoP)	Time spent planning (TSP)	Number of spelling errors (NoSE)	Number of transition words (NoTW)	Number of times the paper topic switched (NoPTS)	Number of grammatical errors (NoGE)	Number of capitalization errors (NoCE)	Written expression rubric (WER)	Pre- to post-test of story construction (PrT to PoT)	Subtest 8 of the TOWL-3 exam	ACT writing score	Measure of self-efficacy 5(MSE)	Intrinsic motivation inventory (IMI)	Time spent writing (TSW)	Time spent planning and writing (TSPaW)	Number of sentences (NoS)	Number of topic sentences (NoTS)	Number of paragraphs (NoP)
Bouck et al., 2010	X						X	X	X			X		X	X	X									X	X	X
Chalk et al., 2005	X						X																				
Delano, 2007	X				X																						
Ennis & Jolivette, 2014b		X				X	X														X	X					
Hoover et al., 2012	X		X																								
Jacobson & Reid, 2010	X					X	X				X		X														
Jacobson & Reid, 2012	X					X	X				X		X											X			
Table 2																											

(cont'd) Kiuhara et al., 2012	X				X	X	X				X												X	X			
Mason et al., 2013	X			X			X																				
Ray et al., 2019	X					X				X			X							X							
Sundeen, 2012																X	X										

Note. cont'd = continued; TOWL-3 = Test of Written Language-3

Table 3 Descriptions of Writing Measurements

Category	Measurements	Writing Measurement Description
Word counts	Number of words (NoW)	Most studies count every word used in the essay to determine the NoW. Sometimes differences between studies occur in regard to whether the spelling must be correct to be counted or not.
	Correct word sequences (CWS)	CWS are usually scored by counting the NoW that are placed together in a row without errors. The types of errors that interrupt a CWS include words that are spelled incorrectly or have the incorrect use of punctuation.
Essay elements	Number of response parts (NoRP)	All these measures are scored by counting the number of elements of the essay the student has been taught to include, such as an introduction paragraph, a counterargument, etc.
	Number of persuasive parts (NoPP)	
	Number of functional essay elements (NoFEE)	
	Number of essay elements (NoEE)	
Essay quality	Quality of essay (QoE)	Scoring of essay quality may differ slightly between studies, but this measure generally aims to examine how well the essay was crafted. Those scoring the essays are often told to look at how coherent the essay is, the level of vocabulary used, and the general readability. They often score with the aid of a rubric and example essays that are scored as low, medium, and high.
Planning	Number of planning details (NoPD)	NoPD looked at whether a participant used a prewriting method (such as a web or Venn diagram) prior to writing and then counted how many details were present.
	NoPD for the main topic	NoPD for the main topic only counted details in the prewriting the participant did that were related to the main topic.

Table 3 (cont'd)	Quality of planning (QoP)	Similar to the QoE measures, scorers are given a rubric and asked to measure parts of the writing completed during planning to give a score.
	Time spent planning (TSP)	This variable measures the amount of time the participant spent during the planning time of the writing process.
Elements of grammar	Number of spelling errors (NoSE)	These measures count the number of various grammar elements.
	Number of transition words (NoTW)	
	Number of times the paper topic switched (NoPTS)	
	Number of grammatical errors (NoGE)	
	Number of capitalization errors (NoCE)	
Other	Written expression rubric (WER)	Similar to the QoE measures, scorers are given a rubric and asked to measure parts of the writing sample to give a score.
	Pre- to post-test of story construction (PrT to PoT) on subtest 8 of the Test of Written Language-3 (TOWL-3) examination	The TOWL-3 is an assessment given to students to identify what parts of writing a student is doing well and poorly in. It can also be used to measure improvement over time.
	ACT writing score	The ACT writing score measures four domains: the ability to (a) convey one's perspective on the issue they are asked to address as well as discuss how their perspective interacts with another perspective, (b) explain and support their ideas with logic and evidence, (c) organize their ideas with clarity, and (d) write in standard English in a way that is understandable to readers.
	Measure of self-efficacy (MSE)	The MSE measures students' self-efficacy in writing with 40 Likert

Table 3 (cont'd)		scale questions on their approach to writing, how confident they are with writing, and how they feel about writing in general.
	Intrinsic motivation inventory (IMI)	The IMI scores 27 Likert scale questions about the participant's interest in writing, how well they feel they are able to do the task (writing), and how much effort it takes them.
Writing time	Time spent writing (TSW)	These dependent variables measure the amount of time the participant spent during various parts of the writing process.
	Time spent planning and writing (TSPaW)	
Counting unit of text at the sentence or paragraph level	Number of sentences (NOS)	These measures count the number of structural elements in the essays.
	Number of topic sentences (NOTS)	
	Number of paragraphs (NOP)	

Note. cont'd = continued

Table 4 Participants' Nondemographic Survey Responses

Anonymized Name	Write three words that describe how you feel about teaching writing.	How comfortable are you with teaching writing in comparison with teaching reading or math?	In your teaching, how much time in a week do students spend getting explicit instruction of the writing process?	In your teaching, how much time in a week do students spend expressing ideas through writing?	In your teaching, how much time in a month or length of a unit do students get explicit instruction of the writing process?	In your teaching, how much time in a month or length or a unit do students spend expressing ideas through writing?	In general, what types of topics do you learn in Professional Development (PD)?	When attending professional development (PD), how often do the sessions relate to or address the teaching of writing to students?	Compared to the amount of time that your PD sessions address Writing instruction, what amount of time is spent on Reading and Math instruction ?	When students have a writing assignment in your class, how often are they given a technique or template that encourages prewriting ?
Abby	Fun, Challenging, Unique	Extremely uncomfortable	21-40 minutes	21-40 minutes	0-45 minutes	46 minutes to 2 hours	Behavior management, whatever new tech we have acquired	About 10% of the Time	I spend more time learning about teaching Reading and Math than on Writing instruction.	All of the Time
Beth	excited, hindered, desired	Extremely comfortable	0-20 minutes	21-40 minutes	0-45 minutes	46 minutes to 2 hours	a lot of things that do not support my teaching	None of the Time	I spend more time learning about teaching Math than on Reading and	Most of the Time

									Writing instruction.	
Table 4 (cont'd) Cara	important, frustrating, rewarding	Extremely comfortable	21-40 minutes	21-40 minutes	46 minutes to 2 hours	46 minutes to 2 hours	new school initiatives (specifically technology)/ State mandated PD	None of the Time	I spend similar amounts of time learning about teaching Writing, Math, and Reading.	Most of the Time
Dawn	*Did not answer	Somewhat comfortable	0-20 minutes	0-20 minutes	4+ hours	0-45 minutes	*Did not answer	None of the Time	*Did not answer	All of the Time
Elsa	Confident, Creative, Effective	Extremely uncomfortable	61+ minutes	61+ minutes	4+ hours	4+ hours	Special education and English curriculum	About 10% of the Time	I spend more time learning about teaching Reading and Math than on Writing instruction.	All of the Time
Faye	Grueling, Frustrated, Motivated	Somewhat uncomfortable	0-20 minutes	0-20 minutes	0-45 minutes	0-45 minutes	Social/Emotional Learning, Mental Health Awareness, Technology platforms	None of the Time	I spend similar amounts of time learning about teaching Writing,	Most of the Time

Table 4 (cont'd)									Math, and Reading.	

cont'd = continued

Table 5 Demographics of Participants

Anonymized Name	Race and Gen	Degree(s) or Educational Background	Currently Held Teaching Certifications	Current Position Description	Length of Time Spent Teaching	General Demographics of School
Abby	White, F	Bachelor's degree in psychology, master's degree in education, Teach For America	Special education 7–12, English 7–12, elementary K–6	Pullout English, co-teaching inclusion English, academic support class	14 years	Suburban, majority white student body, less than 10% free or reduced lunch
Beth	White, F	Bachelor's and master's degrees in special education and elementary education; currently pursuing doctoral degree in special education administration	Special education neonate–12, English 7–12, elementary K–8	Pullout English, co-teaching inclusion English	11 years	Suburban, majority Black student body, over 80% free or reduced lunch
Cara	White, F	Bachelor's degree in elementary and special education, master's degree in reading specialization	Special education K–12, English 9-–12, elementary K–6, reading specialist K–12	Pullout English, co-teaching inclusion English, academic support class	19 years	Suburban, majority white student body, less than 10% free or reduced lunch
Dawn	White, F	5-year bachelor's and master's degree in elementary education	Special education K–12, English 7–9, elementary K–6	Pullout English, co-teaching inclusion English, academic support class	14 years	Suburban, majority white student body, less than 10% free or reduced lunch
Elsa	White, F	Bachelor's degree in elementary and special education	Special education K–12, English 7–9, math 7–9, elementary K–6	Pullout English, co-teaching inclusion English, academic support class	20 years	Suburban, majority white student body, less than 10% free or reduced lunch
Table 5 (cont'd)						

Faye	White, F	Bachelor's degree in natural science, master's degree in special education	Special education 7–12, biology 7–12, chemistry 7–12, physical science 7–12	General Science for PASA-eligible students, biology co-teaching, chemistry co-teaching, executive functioning support class	7 years	Suburban, majority white and Asian student body, less than 10% free or reduced lunch

Note. cont'd = continued; F = female; gen = gender; K = kindergarten; PASA = Pennsylvania Alternate System of Assessment

Appendix B Qualtrics Survey Questions to Complete Before the Interview

For this survey, I am asking questions to learn more about how special education teachers feel about teaching writing. I differentiate between explicit instruction of the writing process (i. e. teaching students how to write) and students spending time expressing their ideas through writing (i. e. practicing writing or giving answers about content in writing).

1. What is your name?
2. What is your race?
3. What is your gender?
4. What is your age?
5. Is there any other demographic information you would like to share about yourself?
6. Write three words that describe how you feel about teaching writing.
7. How comfortable are you with teaching writing in comparison with teaching reading or math?
    a. Highly Uncomfortable
    b. Uncomfortable
    c. Neutral
    d. Comfortable
    e. Highly Comfortable
8. In your teaching, how much time in a week do students spend getting explicit instruction of the writing process?
    a. 0-20 minutes
    b. 21-40 minutes
    c. 41-60 minutes
    d. 61+ minutes
    e. Other: _____
9. In your teaching, how much time in a week do students spend expressing ideas through writing?
    a. 0-20 minutes
    b. 21-40 minutes
    c. 41-60 minutes
    d. 61+ minutes
    e. Other: _____
10. In your teaching, how much time in a month or length of a unit do students get explicit instruction of the writing process?
    a. 0-45 minutes
    b. 46 minutes to 2 hours
    c. 2+ hours to 4 hours
    d. 4+ hours
    e. Other: _____

11. In your teaching, how much time in a month or length or a unit do students spend expressing ideas through writing?
    a. 0-45 minutes
    b. 46 minutes to 2 hours
    c. 2+ hours to 4 hours
    d. 4+ hours
    e. Other: _____
12. In general, what types of topics do you learn in Professional Development (PD)?
13. When attending professional development (PD), how often do the sessions relate to or address the teaching of writing to students?
    a. None of the Time
    b. About 10% of the Time
    c. About 30% of the Time
    d. About 50% of the Time or More
    e. Other: _____
14. Compared to the amount of time that your PD sessions address Writing instruction, what amount of time is spent on Reading and Math instruction?
    a. I spend similar amounts of time learning about teaching writing, math, and reading.
    b. i spend more time learning about teaching writing than on math and reading instruction.
    c. i spend more time learning about teaching reading and math than on writing instruction.
    d. i spend more time learning about teaching reading than on math and Writing instruction.
    e. I spend more time learning about teaching Math than on Reading and Writing instruction.
15. When students have a writing assignment in your class, how often are they given a technique or template that encourages prewriting?
    a. None of the Time
    b. A Little Bit of the Time
    c. Some of the Time
    d. Most of the Time
    e. Every Time

Appendix C Interview Protocol

INTRODUCTION

Thank you for talking with me today about your experiences. My name is Sarah DeMaria and I am a doctoral student in the School of Education at Pitt.

For this particular study, I am interviewing high school special education teachers to learn more about how teachers feel about teaching writing. I differentiate between explicit instruction of the writing process (i. e. teaching students how to write) and students spending time expressing their ideas through writing (i. e. practicing writing or giving answers about content in writing). Before we get started, I want to remind you of a few things:

- There are not any right or wrong answers.
- We will not use your name in any reports or presentations that come from this work.
- Please ask me questions at any time or let me know if you would like to go back to any previous questions.
- Your participation is voluntary and you can choose not to answer any questions or stop at any point.

Do you have any questions about what I have just said or anything else?
Do I have your permission to audio-record this interview?

*****

Ok, let's begin. For this first section of the interview, I will be asking you some background information about how you became a teacher and the types of students and classes that you have taught in.

*****

PART 1: General Background Information

1. How long have you been a teacher?
2. Can you describe the path you took to get into teaching?
3. What teaching certifications do you currently hold?
4. What grade levels have you taught?
5. What types of environments do you teach in (i. e. pull-out classes, co-teaching, etc.)?

*****

For the second part of the interview, I will be asking you questions about the writing skills of the current students you work with.

*****

PART 2: Questions about Students' Writing

1. What do you think the role of writing instruction is for your students?
2. In general, what are your students' writing strengths?
3. In general, what aspect(s) of writing do your students need to work on the most?
4. When you teach writing skills to students, how do you assess whether they have learned the skills? <*Follow-up questions to prompt interviewee ONLY IF NEEDED.*> Why do you think they do/do not? OR Do they typically incorporate the skills into future work?
5. In the survey, you said you spend x amount of time on teaching prewriting to students. What does this look like in your practice? <*Follow-up questions to prompt interviewee ONLY IF NEEDED.*> Can you describe to me what prewriting techniques or templates you use with students in your classes?

*****

For this third part of the interview, I will be asking you questions about your experiences of teaching writing.

*****

PART 3: Questions about Teachers' Experiences Learning about and Teaching Writing

1. In your teacher education classes, what type of writing interventions or general writing instruction did you learn about? <*Follow-up questions to prompt interviewee ONLY IF NEEDED.*> If you learned about teaching writing, can you describe briefly what you learned to do to help students write texts of various kinds?
2. Can you please describe where else you may have learned about teaching writing? For example, are you self-taught?
3. In the survey, you said that about x% of the PD sessions relate to or address the teaching of writing to students. Can you tell me about some of those sessions on writing instruction? What are some of the challenges you have experienced when teaching writing to students?

4. What types of resources have been helpful or would be helpful to implement writing interventions in your classroom? <*Follow-up questions to prompt interviewee ONLY IF NEEDED.*> For example, would additional people to carry-out the intervention help or additional people to run a typical class while you do an intervention pull-out? Are there other resources like supplies or writing prompts, etc.?

*****

For this fourth part of the interview, I will be asking you specific questions about the methods you use to teach writing, the challenges you may face when teaching writing, and the supports that you may need to implement writing interventions.

*****

PART 4: Specific Questions About Teaching Writing and Writing Interventions

1. In the survey, you said students spend x minutes on expressing ideas through writing in the course of a week and x minutes on expressing ideas through writing in the course of a month or unit. Can you describe what students' writing typically looks like in your classroom?
2. In the survey, you said you spend x minutes on explicit instruction of the writing process to students in the course of a week and x minutes on explicit instruction of the writing process to students in the course of a month or unit. Can you tell me what specific methods of instruction that you have used?
3. When teaching writing, what parts of the writing process do you tend to focus on? <*Follow-up questions to prompt interviewee ONLY IF NEEDED.*> Prewriting? Writing? Editing/revising? <THIRD QUESTION TO DROP IF SHORT ON TIME>
4. Are you familiar with self-regulated strategy development (SRSD)? If yes, can you describe it and have you taught writing with that method before? How did you learn about it? <SECOND QUESTION TO DROP IF SHORT ON TIME>

*****

For the final section of the interview, I have one question that I would like you to take a moment to think about.

*****

PART 5: Conclusion

1. Can you think of any other information that I would need to know to get a more complete idea of your views on teaching writing? <FIRST QUESTION TO DROP IF SHORT ON TIME>

Appendix D Thematized Codebook

THEME: Practices in Writing Instruction **Parent Codes**	**Schools**
Writing is necessary	• Ability to communicate • Preparation for college • Basic life writing skills (e.g., applications, notetaking, emails) • Career • Traditional writing skills
Types of writing instruction	• Research writing • Explicit instruction of writing • Grammar and punctuation (aka error correction) • Prewriting • Teacher revising/editing • Student revising/editing • Creative writing • Opinion-based writing • Literature analysis writing • Actual writing part of writing process • Students get to pick own topic • Rough drafting • Teaching writing skills students show they need growth in • Formal writing as different than texting • Students learn to make their own graphic organizer
Writing tools	• Rubric • Checklist • Modeling the writing process • Providing structure/template for the writing piece • Adult support/conferencing • Printing out to edit/revise • Grammarly • Correction prompts on Word/Google Docs • Chromebook tools • Graphic organizer • Prompted to review writing • Mind-map

	• List of background information • Past student work examples • Color-coding/highlighting
Self-regulated strategy development (SRSD)	• Not familiar with • Familiar with
Writing interventions	• Not used in high school • Most students don't need it • Some SPED students could benefit from it • School doesn't offer access/programs of it • Students are using other types of strategies/programs to compensate • Lack of training/experts in interventions at high school level • Trained in specific type • Dislikes the intervention trained in • Just doesn't use it
When writing happens in the classroom	• Project/paper • Short response • Warm-up/entrance ticket • Exit ticket • Writing assignments based on students' needs • Outlining • Worksheets • Exam-based
THEME: Perceptions and Assessment of Students' Writing	
Parent Codes	**Subcodes**
Student writing weaknesses	• Based on demographics • Not from demographics • From potential maternity leave • From COVID-19 • Need to give more detail • Need to explain more/elaborate • Mind-mapping too abstract • Rigid writing • Run-on sentences • Needs punctuation • Disorganized/unstructured • Clearly indicating main idea • Stuck on idea of five-paragraph essay • Will not prewrite unless told to • Texting-influenced writing • Will not edit/revise unless prompted
Student writing strengths	• Based on prior learning

	• Writing thesis statements • Structured writing when supported • Sentence transitions • Students know their own process • "There aren't a whole lot." • Including parts of sentences (e.g., subjects, verbs) • Bulleted list writing • Concise emails • Willing to write • Continue to go back to central idea • Good ideas • Creativity • Grammar
Assessing	• Independent writing assignments • Quick checks • Expectations listed in directions/verbally • Grades • Rubrics used to assess • Authentic/actual writing • Measuring concepts communicated versus grammar • Measuring grammar skills
THEME: Challenges Teaching Writing	
Parent Codes	**Subcodes**
Challenges teaching writing	• Hard to fit in enough class time • Not given curriculum • Unsure how to teach it • Students do not want to write • Keystones don't model proper writing process • Not prioritized in standardized testing • Other teachers not teaching or assessing it
THEME: Education and Supports Needed to Teach Writing	
Parent Codes	**Subcodes**
Education and/or training needed to teach writing	• Self-taught • Sought own professional development • District/charter automatically trained via professional development • Learned in classes • Asked the district to be sent to professional development
Lack of education and/or training to teach writing	• Focus on reading was a priority • Did not get any

	• Did not get much • Focused on other topics • Takes time to teach teachers how to teach writing
Supports and/or resources to teach writing	• Used materials from other teachers • Used but modified materials from other teachers • Did not use materials from other teachers • Made own materials • Teachers working across grades • Librarian helping with materials • Found on internet
Lack of supports and/or resources needed to teach writing	• Lack of cohesion between 9th to 10th to 11th to 12th grade writing curriculum • No free resource bank of materials • No planning time with other teachers

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