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Literature Review

 **Introduction**

Students with high incidence disabilities (HID), including learning disabilities (LD) and emotional and behavioral disorders (EBD), demonstrate academic deficits in comparison to their typically achieving peers. Approximately 80 to 90% of students with high incidence disabilities struggle in the area of reading, and typically have difficulties in the areas of decoding, fluency, and comprehension (Mercer & Pullen, 2009). In addition to challenges in reading, students with high incidence disabilities also have writing difficulties, write fewer words in comparison to their typically achieving peers, and have difficulty in organization, spelling, handwriting, grammar and syntax (Kulikowich, Mason & Brown, 2008).

Expository writing is especially difficult for students with HID as it requires metacognitive skills and cognitive processes (Englert & Mariage, 2003). The deficits that students have in writing and reading can create academic challenges for these students in the content areas, including science and social studies (Mastropieri & Scruggs, 2008). However, composing written responses from extended informational text or prompts is at the core of many writing assignments in the content areas, including science and social studies (Spivey & King, 2009). Writing in classrooms often consists of activities that are intended to support the content read or learned in class. Common classroom writing activities include responding to questions in short answers or extended responses, creating summaries of text, note taking and generating written questions based on text read in class (Graham & Herbert, 2011).

These writing tasks commonly found within the content areas are expository writing, which requires students to explain, describe, or to present an argument. However, because reading and writing are interrelated tasks, there is emerging evidence that writing activities not only demonstrate students’ knowledge, but can improve a student’s reading and comprehension abilities. According to research, writing activities foster improvements in comprehension by (a) causing the writer to identify which parts of the text are most important, (b) organizing written text into a cohesive whole, (c) causing reader to reflect on what was learned, (d) helping to establish a personal connection with the text, (e) thinking about what the main idea of the text is by putting text into their own meaning (Applebee, 1984; Emig, 1977; Klein, 1999; Stotsky, 1982).Comprehension of text could be improved through the writing process by aiding in reflection, organization, and putting text into different words which facilitates overall understanding of the text Content literacy, including writing expository responses that can foster a greater understanding of the curriculum, can be supported by the incorporation of literacy strategies through the use of informational text and specific strategies to access and write about this text.  However, very few teachers incorporate content literacy strategies in their teaching in primary and secondary contexts (Fisher & Ivey, 2005).  For students with disabilities to have greater understanding of the topic through the writing activities assigned, specific writing interventions to support writing about content are required (Graham & Perin, 2009).

In addition, specific state and national assessments require writing tasks, including the creation of sentences, paragraphs, and essays, that are related to both narrative and informational texts (Kulikowich, Mason, & Brown, 2008). National content specific learning standards require students to write across content areas. Specifically for the area of science and social studies, the National Science Teacher Association, National Social Studies Teacher Association, and the Common Core standards require students as young as the third grade to write expository texts, including explanatory, informational, argumentative or position papers to demonstrate their understanding of the content (NSTA, 2013; NSSTA; 2010; CCS, 2014 ). Teachers often incorporate writing in the content area to demonstrate understanding of a topic, which is often based on informational text or a prompt.

Students of varying ability levels, including students with high incidence disabilities, are required to make progress towards these standards through written responses in class, which is challenging due to the cognitive deficits of students with HID (Englert & Mariage, 2003), and the limited instruction time spent on literacy skills (Cutler & Graham, 2008; Gilbert & Graham, 2010; Kiuhara, et al., 2009). Specifically, students with HID often have difficulty in content literacy due to underlying challenges in reading, including de-coding, comprehension, and vocabulary, and writing.  For expository writing, students with disabilities write fewer words, have greater grammatical errors, and fewer complete sentences.   The difficulties of constructing essays and presenting the information in a coherent manner may prevent students at-risk and students with disabilities from accurately demonstrating knowledge on state assessments as well as increasing their understanding of the content material.

According to NAEP, students with disabilities perform lower on national standards in reading as well as the content areas of science and social studies in comparison to their peers without disabilities.  The 2013 NAEP fourth grade reading assessment, reports that the national reading average of students with disabilities is 184, well below the reading proficiency score of 250, compared to students without disabilities, whose average reading score is 227.  For content areas, students with disabilities and students without disabilities scored 124 and 155 respectively in the area of science and 134 and 160 in social studies. Students with disabilities also performed lower than students without disabilities on the NAEP writing assessment with an average score of 113 compared to 154.   Since these assessments require student to read and comprehend informational texts as well as construct short responses, the deficits that students with disabilities exhibit in reading and writing may demonstrate the difficulty students with disabilities have accessing the content material due to cognitive deficits which impact their reading and writing in the content areas.

To access and be successful within these standards, students with disabilities will require specific strategies embedded in core content areas to increase their ability to write about informational text, which is often required within the content areas and on national and state assessments.  Several strategies have been found to support the writing needs of students across various types of writing including persuasive, argumentative and narrative essays (Hauth, 2013; De Le Paz, 2005, Dollins, 2012); Ferritti, 2000; Feritti, 2009). According to current research, content area lessons that embed supports including graphic organizers, self-regulated learning strategies, and explicit instruction, can support the student’s access of the content area curriculum (Graham & Herbert, 2010). Several research studies have effectively incorporated strategy instruction and graphic organizers to support writing in the content areas, including reading and writing, in social studies and science (Shuh, 2006; Hand, 2004; Reynolds, 2009).  However, very few of these studies determine the effects of strategies, including graphic organizers, strategy instruction, or technology, on the writing of students in the content areas (De La Paz, 2005; De La Paz, 2010; Hauth, 2013, Dollins, 2012).

**Statement of Problem**

Although students are required to read and write about content area topics, which are often associated with informational texts, most text presented within the lower primary grade levels are narrative texts, with informational texts as the least accessed and taught within the primary grade levels (Duke, 2000).  Fifty percent of texts on standardized assessments require students to answer questions, including short written responses, based on informational text in the fourth grade; however, this increases to 75% the 8th grade (Moss, 2005). This demonstrates a sharp increase in the type of text used in standardized assessments as grade levels increase although a limited amount of instructional time is spent teaching content literacy with these texts (Jeong, Gaffney, & Choi, 2010).  The increase of the use of informational text in upper elementary grades is often associated with the drop in achievement levels as student’s transition from primary to secondary school (Chall, 1983).  The National Assessment of Educational Progress (NAEP) also reports a drop in scores in some content areas, including social studies, from grade four to grade eight.  The increase in the use of informational text may play a role in the decreased scores of students as the grade levels increase.

In addition to limited exposure to informational text that is commonly found in content area classes in lower elementary grades, teachers also spend minimal time teaching writing across content areas. Previous research has stated that teachers spend an average of 15 minutes a day teaching writing and students spend an average of 20-25 minutes a day writing across the content areas (Cutler & Graham, 2008; Gilbert & Graham, 2010; Kiuhara, et al., 2009). However, according to a recent national survey (Evmenova & Regan, 2014) there is a statistically significant difference between writing strategies taught in science and math in comparison to language arts, with language arts teachers incorporating writing strategies more than teachers in science. In comparison to social studies, social studies teachers incorporate strategies slightly less than teachers of language arts. However, expository writing, including persuasive essays, are commonly required in each of the content areas.

Writing quality expository essays or responses requires students with disabilities to be exposed to information acquired through informational text in order to have the knowledge about the content to express in writing (Berkeley, 2014). In addition, students with disabilities, who struggle with writing tasks, including organization, also require specific strategies and supports for writing within these content areas (Gersten & Baker, 2001). Without specific strategies to help students write in the content areas in primary grades, students not only lack the skills to access and be successful within their current grade level, but also lack the appropriate foundation to understand and write about informational texts in the upper grade levels (Chall, 1983). Students in elementary school required the exposure to expository essays in the content area to have future success with writing these types of essays in upper grade levels.

To support the writing of students with disabilities across content areas, several recommendations have been made based on results from a meta-analysis of effective writing instruction (Graham & Perin 2009). According to this meta-analysis, effective writing instruction includes writing strategies, process oriented writing, specific product goals, which are commonly found in self-regulated learning strategies, and recommendations for writing about content in core academic areas including science and social studies. In addition, it’s been recommended to (a) increase the time students spend writing expository text, and (b) make the computers an integral part of writing instruction (Cutler & Graham, 2008).

**Definitions of Terms**

**High Incidence Disabilities**

This term is often used to describe the students that are typically receive instruction in the general education curriculum including students with learning disabilities, emotional and behavioral disorders, and mild intellectual disabilities. These students are most often identified and early childhood and are the largest subgroup of students receiving special education services (Henley, Ramsey & Algozzine, 2009).

**Elementary School**

Elementary indicates a range of grades from first to sixth grade. For the purposes of this study, students in elementary school include students in the fourth, fifth, and sixth grade.

**Learning disability**

A neurological disorder that affects the brains ability to receive, process, store, and respond to information (National Center for Learning Disabilities, 2007).

**Emotional and Behavioral Disorder**

A condition exhibiting one or more of following characteristics over a long period of time and a marked degree that affects a child’s educational performance (a) an inability to learn that cannot be explained by intellectual, sensory, or health factors (b) an inability to build or maintain satisfactory interpersonal relationships with peers and teachers (c) inappropriate types of behavior under normal circumstances (d) a general pervasive mood of unhappiness ( e) a tendency to develop physical symptoms or fears associated with school. (IDEA, 2004).

**Mild Intellectual Disability**

A mental or physical impairment or combination of both that is manifested before the age of 22 and is likely to continue. This disability results in the limitation in three or more of the following areas including self-care, receptive and expressive language, learning, mobility self-direction, independent living, and economic self-sufficiency (DDA, 2000).

**Content Areas**

Content areas refer to grade level subjects related to science, social studies, and math in which students learn content related to the subjects standards.

**Self-regulated learning strategies**

Self-regulated learning strategies are strategies that are guided by metacognition, strategic action, and motivation to learn (Zimmerman, 1990).

**Expository Writing**

Writing tasks commonly found within the content areas are exposition writing, which requires students to explain, describe, or to present an argument. This includes argumentative and persuasive writing related to content.

**Argumentative Writing**

Argumentative essay is a type of writing that requires the student to investigate a topic, collect, generate, and evaluate evidence, and establish a position on the topic.

**Persuasive Writing**

Persuasive writing is a writing task in which the writer attempts to convince the reader that their opinion is correct.

 **Literature Review**

This chapter presents an overview of literature on students with high incidence disabilities, learning disabilities (LD) and emotional and behavioral disorders (EBD) in relation to their academic achievement in the content areas of science and social studies, and reading and writing instruction. The first section will describe the academic achievement of students with high incidence disabilities in the areas of reading and writing and the challenges this population has within the content areas of language arts, science and social studies. The second section will describe the writing interventions that support expository writing of students with disabilities, including explicit strategy instruction, graphic organizers, and technology.

**Students with High Incidence Disabilities**

Students with HID, including learning disabilities, emotional and behavioral disorders, and mild intellectual disabilities, often have difficulties in reading and writing in addition to metacognitive processes. Meta-cognitive processes refer to a student’s awareness of their own thinking by regulated strategies used for successful learning. Students with HID often have deficits within these meta-cognitive processes and have difficulty thinking about their own thinking, which effects their ability to effectively learn (Pullen, Lane, & Kristen, 2011). This also effects a student’s ability to plan and organize, which is important to many aspects of academics including writing. (Note: this section will be expanded prior to proposal)

**Reading and Writing Relationship**

Reading and writing are often essential parts of the general education curriculum. However, because of the challenges that students with disabilities have in reading and writing, students may have difficulties understanding and succeeding in the general education curriculum. Students are often required to read text in textbooks and other classroom materials and synthesize this text orally or in writing, in their core academic classes (Graham & Herbert, 2011). Exposure to content information to gain background knowledge as well as content understanding within a subject is imperative to the overall writing quality found in expository essays.

 According to research, reading and writing may share approximately 50% of the cognitive processes in common within the functional language system, which consists of processes that impact reading, writing, listening and talking (Berringer, 2010). Language development occurs when the social environment interacts with the end organs. The end organs include the sensory system: (a) listening through the ears, (b) seeing through eyes while reading and writing; (c) using motor system including hands, which is related to written expression; and (d) speaking with the mouth that connects to aural language. Researchers have hypothesized that these language systems work together through the end organs and that each process has a relationship with another process (Berringer, 2010). However, language processes that are connected to the same end organ may have a greater biodirectional relationship, which each process greatly influencing the other. For reading, listening comprehension and writing, which are processes developed through the social environment through the sensory system, reading and writing may have a greater relationship, where reading and comprehension impact a student’s writing ability (Berringer, 2010). This language system develops over time in an interacting manner rather than a systematic way, especially during early childhood and primary years.

Research has determined that processes impacted by the sensory environment have a greater relationship. For example, reading comprehension has a great impact on several aspects of written language (Hayes, 1996). According to a study which utilized structural equation modeling to determine the relationship between reading and writing of students of varying ability levels, the researchers found a link between reading comprehension and writing (Berringer, Abbot, Abbott, Graham, & Richards, 2002). Based on the results, comprehension related to students overall quality of work. Reading fluency, a process related to motor system, affected factors such as handwriting. These findings were replicated by Berringer and his research team in 2010, where the researchers found a bidirectional relationship between reading comprehension and written expression for elementary aged students in third, fifth, and seventh grade (Berringer et al, 2010). However, in the first grade, reading and writing were not biodirectional, but rather reading and comprehension impacted writing ability, but writing did not impact a student’s reading or comprehension achievement (Berringer, et al, 2010).

Since reading and writing, for most stages in student’s development, are interrelated processes that develop in an interacting way, specific writing activities may increase student’s reading and comprehension abilities. Because of the interrelationship between these processes, teachers often use various language processes during instruction, such as responding to oral questions for comprehension and requiring students to construct written responses. A meta-analysis was performed to determine the overall effects of specific writing activities on the reading comprehension of students with and without disabilities throughout content areas including language arts, science, and social studies (Graham & Herbert, 2011). Most of the studies included in the meta-analysis incorporated the reading of expository text and approximately half were in the content areas of science and social studies. Results from the meta-analysis, which included 51 studies and found that the overall effect size of writing about text read on comprehension for norm-referenced measures is .37 and .50 for researcher created comprehension measures, with 95% of the studies producing a positive effect size for comprehension. Although student writing about text and writing instruction both increase the comprehension of students, specific writing activities has a greater impact on comprehension than others. Overall, the writing activities which had the largest effects on the comprehension of students are responding to text in writing and writing summaries for elementary aged students (Graham & Herbert, 2011). Responding to text in writing includes activities where students are required to write a personal response, analyze, or interpret text. This occurs in activities where students write a letter to a friend describing the text, analyzing characters in a novel, or developing an argumentative essay. These writing activities could possibly increase text comprehension because it requires students to respond to the text in an extended way through analysis, personalization, or interpretation, instead of simply rephrasing what was in the text (Applebee, 1987). According to the meta-analysis, responding to reading in writing had an effect size of .77, a large effect size demonstrating that writing about text has a greater effect on comprehension than reading activities including reading text, repeating reading, studying, or reading instruction. Thus, it is important that interventions target writing about content for students to have greater learning of the content and demonstrate this learning.

**Expository Writing Interventions**

Writing in the content areas is typically used as a measure of comprehension. In addition, the quality of expository essays can not only demonstrate understanding of content, but also improve comprehension outcomes. Thus, the strategies are used within these content areas to improve writing of students with and without disabilities to help with the coherence, organization, and accuracy of the written products. Specifically for special education, several interventions have been conducted with students with HID to improve various components of writing across genres, including expository and narrative.

**Literature search procedures**. In order to locate the studies that investigated the impact the expository writing of students with disabilities, a comprehensive literature search was conducted. Electronic databases included *EBSCO*, *ERIC*, *PsychINFO* and *Education Abstracts* were searched. Relevant search terms, including *expository writing and disabilities, science, writing, and disabilities, social studies, writing, and disabilities, content area, writing, and disabilities* were used. Due to the limited amount of expository interventions for students with disabilities in the content areas, literature search was increased to include general education students from kindergarten to twelfth grade in the content areas of language arts, science, and social studies.

 Studies were included in the review if they (a) used an experimental or quasi experimental design including single subject research, (b) included an intervention that contained instruction in writing, (c) focused on the content areas of language arts, science, or social studies, and (d) included students from second to twelfth grade, the grade level where writing about content is commonly found. Studies were excluded from the literature review if they (a) were not an experimental or quasi-experimental design, (b) if there was no instruction for student writing, and (c) if the participants were in post-secondary education, including college or technical or trade school. Studies were also excluded when only the experimental group had a writing task, when science lab writing activities were performed (rather than essay writing), and the measures focused on comprehension rather than writing. There was no limit on the publication years for the search.

**Summary of existing research**. The electronic search of expository writing interventions in the language arts, science and social studies content areas for students with and without disabilities resulted in a total of 10 studies ranging from the years 1988 to 2013 (Table 1).

Table 1.

*Expository Writing Interventions in Content Areas*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Study | Type of Writing | Grade | Participants  | Subject Area | Intervention |
| De La Paz, 2005 | Argumentative | 8th | Typical and LD | SS | Historical Reasoning and Argumentative Writing |
| Hauth, 2013 | Persuasive | 8th | EBD | SS | SRSD |
| Ponce, 2013 | Argumentative | 4th-8th  | Typical | SS | Graphic organizer |
| Monte-Sano, 2012 | Document analysis | 10th , 11th  | Typical  | SS | Reading instruction for writing |
| Monte-Sano, 2011 | Argumentative | 11th | Typical | SS | Historical Reasoning |
| Hand, 2004 | Article or Essay | 10th  | Typical | SS | Planning |
| Newell & Winograd, 1989 | ExplanationEssay | 11th  | Typical | SC | Reading instruction for writing |
| Guzel-Ozmen, 2006 | Explanation Essay | 9th to 10th  | Mild ID | SC and SS | Cognitive Strategy Instruction |
| Reynolds, 2009 | Summarization | 7th | Typical  | SS | Explicit Strategy Instruction |
| Schuh, 2006 | Explanation Essay | 5th, 6th  | Typical  | SC | Internet Resources |

**Expository Writing in Content Areas.** Writing interventions have been conducted for students with and without disabilities in the core content areas of science and social studies. These interventions were developed to support various expository writing tasks including summarization tasks, explanation essays, document analysis, and argumentative essays. The studies investigated the impact on the holistic quality of writing as well as additional writing measures, including number of words, number of essays parts, and planning skills. Several of these writing interventions incorporated the use of various informational texts and strategy instruction to generate ideas and formulate a well-developed expository text in the areas of social studies and science. In most of the studies located, interventions for students without HID did not included explicit strategy instruction, whereas interventions for students with HID contained specific strategy instructions, such as SRSD. However, most of the interventions within these content areas incorporated informational text or content learned within the class in conjunction with a strategy to improve writing.

 Expository writing interventions for students without disabilities occurred in the science and social studies classrooms and focused on increasing the holistic quality, structure, and content of the written responses of students in the general education setting. These interventions also focused on providing text in various formats and emphasis on text structure to improve content of writing in the content.

In one intervention study which determined the impact on graphic organizers on the expository writing of students in the fourth through eighth grade (Ponce, 2013), students read digital texts to provide background knowledge on texts, and then used computer based graphic organizers to plan essays, including articles or expository essays in various content areas. The graphic organizers were used to brainstorm, organizer, and plan the written text (Ponce). The results indicated that students who used the graphic organizer for pre-writing increased their holistic quality of writing in comparison to a control group who had traditional language arts instruction, although means and standard deviations were not reported for treatment and control groups. Although the use of digital text and graphic organizers increased the holistic writing quality for the 4th-8th-grade students who wrote expository text, an additional intervention that used digital resources to support the writing of elementary students did not yield beneficial results.

 In the research study conducted with5th-6th-grade students in the science content area, students in the experimental group read digital resources from the internet, while the control group read paper resources (Shuh, 2006). Both groups composed explanation essays after reading the digital resources. The researchers found that although the students who read text on the internet were more interested in the writing task, there was no difference between the internet group and the paper text group on the holistic quality of writing; 2.71 (*SD* = 1.14) for fifth grade, and 2.72 (*SD* = 1.45) for sixth grade in the control group, and scores of 2.53(*SD* = .92) and 3.22 (*SD* = 1.35) for fifth and sixth grade in the treatment group. Although technology can be used as a tool to increase interest of student writing, specific strategies must be incorporated with technology in order to impact student writing quality

 Reading text combined with specific strategies can impact the writing quality for students with various abilities and needs, including those without disabilities. Additional research studies within content areas of social studies determined the effects of text instruction on expository writing. In an intervention study, which included reading multiple historical documents, students did not receive any explicit writing instruction. The researchers found that student reading of multiple historical texts increased their ability to develop arguments in writing (Monte-Santo, 2011). Reading of texts also impacted the writing ability of eleventh grade students who wrote explanation essays after reading science texts (Newell & Winograd, 1989). The researchers found that reading the science texts to gain previous knowledge helped to increase number of words written in the experimental group.

 While most of the studies investigating the expository writing by students without disabilities focused on the inclusion of text and digital resources, one study determined the effectiveness of explicit strategy instruction on the summarization essays of the 7th-grade students in the general education classroom in science and social studies content area (Reynolds & Perin, 2009). Students in the experimental group read a series of essays in social studies and learned explicit strategy instruction, which focused on setting goals and using the mnemonic PLAN and WRITE to create expository essays. The mnemonic PLAN represented the pre-writing process of Paying attention to the prompt, Listing your ideas, Adding supporting details, Numbering your ideas. WRITE represented the process of Working from your plan to develop a thesis statement, Remembering your goals, Including transition words, Trying to use different kinds of sentences, and Using exciting words. Students in the comparison group also had an explicit strategy instruction, which focused on the structure of text. Specifically, students in the comparison group used graphic organizer to structure text and received explicit instruction how to structure text through a series of lessons and activities. In addition, there was a neutral literacy control group, in which students did not receive any explicit instruction, but read the same passages as the treatment and comparison groups and then completed writing activities. The results from the study indicated that both explicit instruction interventions increased the holistic quality of the summarization text produced by the students in comparison to a neutral literacy control group. Holistic writing scores for the PLAN and WRITE group as compared to the text structure group and the neutral literacy group were 9.76 (*SD* = 1.69), 8.98 (*SD* = 1.66), 7.79 (*SD* = 2.11), respectively, indicating that explicit strategy instruction can be an effective strategy for students in the general education curriculum.

 Strategy instruction was also found effective for high school students with low to high writing ability in an historical reasoning study and argumentative essay study conducted by De La Paz and Felton (2010). In this intervention, a historical reasoning strategy was combined with self-regulated strategy development (SRSD) to increase the holistic writing quality of argumentative essays of high school students in the social studies content area. The SRSD lessons consisted of six stages that (a) activated background or content knowledge (b) discussed the strategy (c) modeled the strategy (d) encouraged students memorizing the strategy (e) supported of the strategy by the teacher and (f) provided independent practice of the strategy. In the intervention, students were taught how to analyze historical documents through a series of historical argument lessons. For the historical reasoning portion of the lessons, students learned to consider the author of the source, understand the source, critique the source, and create a more focused understanding of the source. Students also received instruction on how to apply SRSD writing strategies to complete an argumentative essay, as compared to a traditional instruction control group. Students in the experimental group showed increases in length, 327.86 (*SD* =101.38) as compared to the control group, 281.57 (*SD* = 123.17). In addition, there was a greater probability of the high scores of holistic quality found within the experimental group, with a greater possibility of low quality essays to be found in the control. Researchers stated that (a) explicit strategy instruction can help support the writing of students with low to high writing abilities, and (b) that quality writing can increase the understanding of the content.

 So, the explicit strategy instruction, used in two studies for students without disabilities (Reynolds & Perin, 2009; De la Paz & Felton, 2010), was found to benefit the holistic writing quality of students with low to high writing ability. In turn, explicit strategy instruction was also effective for students with HID in the few studies that determine the effectiveness of an intervention of the expository writing of that target population across content areas (De la Paz, 2005; Hauth, 2013). In the studies located, students with HID were taught various explicit strategies within the content areas to support writing, including SRSD. In an expository writing intervention conducted by De la Paz (2005), the researcher determined the effectiveness on the historical reasoning strategy combined with SRSD for students with and without learning disabilities on answering argumentative prompts in writing. The results were similar to the aforementioned study including high school students without disabilities. The SRSD and historical reasoning group outperforming the traditional instruction group in the measures of length (*M* = 339.8, *SD* = 87.6 vs. M = 248.1, SD = 74.9), persuasiveness (*M* = 4.1, *SD*=1.4 vs. *M* = 0.8, *SD* = 0.2) , arguments (*M* = 1.4, *SD* = 0.4 vs. *M* = 0.8, *SD* = 0.5) , and accuracy (*M* = 3.9; SD = 0.7 vs. M = 3.4, SD = 0.8).

 SRSD was also used for persuasive writing instruction in an additional intervention (Hauth, 2013) for students with EBD in the social studies content area. In this single subject research study, 8th-grade students received SRSD instruction after six weeks of social studies instruction. The SRSD intervention focused on planning and writing using the POW + TREE strategy; plan, organize, and writing, and then identify topic, reasons, explanation, and endings. Specific 8th-grade social studies standards were embedded into the intervention. After the intervention, the participants increased in the number of words, essay parts, strategy knowledge, and holistic quality of the essays demonstrating 100 % PND on all measures.

Further, positive results were found for explicit writing instruction with students that have mild intellectual disabilities in the social studies and science content area (Guzel-Omen, 2006). In this explanation essay writing intervention, 10th-11th-grade students with mild intellectual abilities in the experimental group received cognitive strategy instruction (CSIW) intervention which was modified with components of SRSD, which focused on the writing process with an emphasis on think aloud strategies and modeling. The students in the intervention group wrote problem and solution essays based on science and social studies textbook passages. The passages were re-written in a problem solution format to provide students with the background knowledge to answer the prompts. After the intervention, students increased in areas of writing text elements, planning time, and overall writing quality for each participant demonstrating 100% PND. Thus, the results of this study indicated that students with mild intellectual disabilities can also benefit from a specific writing instruction.

**Summary**. Based on the review of expository essay intervention research in the content areas, it is important to provide students content knowledge through text as well as specific strategies and supports in order to ensure quality essays. Simply providing students with text in different formats, including digital text, does not impact the quality of students’ writing in the content area. Rather specific strategies and supports are required to support students with and without disabilities and improve their writing. Specific strategy instruction including self-regulated learning strategies and graphic organizers may support student writing of content especially for students with disabilities, who require extra support for writing. Those specific strategies can support metacognition and organization, which are important components of composing expository texts within the content areas (Englert & Mariage, 2003).

**Persuasive and Argumentative Writing.** Argumentative and persuasive writing is commonly used in the content areas as it requires students to construct essays using claims, data, and evidence, and both are considered to be within the expository genre. Due to the limited amount of studies related to writing in the content areas for students with disabilities, and the importance of argumentative and persuasive writing skills in relation to informational text, persuasive and argumentative writing interventions unrelated to content areas were also included in the literature search..

Literature search procedures: In order to locate that investigated the impact of argumentative writing of students with disabilities unrelated to content areas, electronic databases including *PsyhInfo* and *EBSCO* databases were searched. The following terms were used to search for persuasive and argumentative writing for students with disabilities, *disabilities, argumentative, writing; disabilities, persuasive, writing; disabilities; persuasive and disabilities; argument, writing, and disabilities; argument and disabilities.*

Studies were included in the literature review they had (a) an experimental or quasi-experimental design (b) had writing as a dependent measure in the treatment and comparison groups and (c) and if students had a HID. Studies were excluded that (a) did not have an experimental or quasi experimental design (b) only had writing in the treatment group were and (c) was a comparison study which compared the writing samples of students without an intervention component. The final sample resulted in 19 studies that determined the impact of an intervention on the persuasive writing of students with disabilities, including ADHD, LD, EBD, and mild intellectual disabilities (Table 2). All years were included for the search, and resulted in studies from the years 1988 to 2014.

Table 2.

*Argumentative and Persuasive Interventions for Students with HID*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Study | Type of Writing | Grade | Participants | Subject | Intervention |
| Unzueta, 2012 | Single Subject | 7th and 8th  | LD | General | Graphic organizer |
| Cuenca-Carlino, 2013 | Single Subject | 6th, 7th, 8th  | EBD | General | SRSD |
| Mastropieri, 2014 | Single Subject | 8th | LD, EBD, Autism | General | SRSD |
| Troia, 2002 | Group Experimental | 4th and 5th  | LD | General | Explicit Strategy Instruction |
| Reynolds, 1988 | Group Experimental | 6th, 7th, 8th  | LD | General | Revision Strategy |
| Ferritti, 2009 | Group Experimental | 4th and 6th  | LD and typical | General | Elaborated Goal Setting |
| Ferritti, 2000 | Group Experimental | 4th and 6th  | LD and typical | General | Elaborated Goal Setting |
| Linemann, 2008 | Group Experimental | 4th and 5th  | ADHD and typical | General | SRSD  |
| Deatline-Buchman, 2006 | Single Subject | 4th  | Learning disabilities | General | Planning sheet |
| Little, 2010 | Single Subject | 2nd  | EBD | General | SRSD |
| Kuihara, 2012 | Single subject | 10th  | LD | General | SRSD |
| Mason, 2010 | Single subject | 7th and 8th | EBD | General | SRSD |
| Mastropieri, 2009 | Single subject | 8th | EBD | General | SRSD |
| De la Paz, 1997 | Single subject | 5th-7th | LD | General | SRSD |
| Hoover, 2012 | Single subject | High school | LD | General | SRSD |
| Mason, 2011 | Single subject | 7th | LD | General | SRSD |
| Troia, 1999 | Group | 5th grade | LD | General | Planning |
| Barry, 2004 | Group | 8th grade | LD | General | Explicit instruction |

**Persuasive and argumentative writing interventions.**  Writing interventions to improve the persuasive writing of students with HID included specific strategy instruction, including SRSD, specific components of self-regulated learning, such as goal setting and planning, or supports to aid in organization, including graphic organizers. These interventions resulted in positive outcomes for students with HID including increases in number of words, number of sentences, organization, and increases in planning time.

Since students with HID may have difficulty with organization of information to develop a cohesive persuasive response, interventions often try to support the difficulties in organization. That can be done with specific strategy instruction or supports such as graphic organizers. Four 7th-8th-grade with learning disabilities participated in a study by Unzueta (2013). The study investigated the effects of a graphic organizer to support the organization of persuasive essays using a single-subject design. Students used the software program Inspiration 8.0 to plan and organize their thoughts in response to a persuasive prompt unrelated to content. For the study, a persuasive writing template in Inspiration 8.0 was used. Students were taught how to persuade in writing and how to use the graphic organizer in order to plan and organize their writing through a series of 40-minute instructional lesson. After planning and organizing in the graphic organizer, students transferred the text into Microsoft Word to create the first draft. In comparison to baseline, students increased in the number of t-units, words, supporting details, and planning time. Results indicate that organization and planning through the use of a graphic organizer can positively impact the persuasive writing of students with learning disabilities.

Planning and organization was also the focus of a study conducted by Deatline-Buchman (2006) in order to help 4th-grade students with learning disabilities write persuasive essays. In this single-subject study, the researchers used a planning sheet to help students plan and organize persuasive essays. Using the planning sheet, students determined a goal for their writing, identified their audience, and wrote the pros and cons of their topic. Students then created their first draft on paper? from the planning sheet, and worked in pairs to plan and revise. Students increased in their planning and writing time in comparison to baseline, and also increased in the number of words written. The researchers indicated that explicit planning instruction can help students with learning disabilities plan and write persuasive essays.

In addition to planning and organization supports, interventions have specifically targeted goal setting and determined the effect of goal setting on argumentative writing of 4th-6th-grade students with learning disabilities(Feritti 2000; Feritti, 2009) . In a group research study by Ferriti (2000), the researcher determined the effect of elaborated goal setting on the argumentative writing of students with and without learning disabilities. Students in the experimental group received a persuasive writing prompt with an elaborated goal including a general goal and sub goals while students in the control group received just a general goal.. The experimental group participants showed an increase in the number of alternative standpoints in the argumentative essay. That study was later replicated by Ferritti in 2009, when the impact of goal setting on 4th-6th-grade students with and without learning disabilities was determined. The procedures were replicated, but students in this study responded to a persuasive prompt. In post-test writing samples, students in the elaborated goal group created essays that were more persuasive than the students in the control group with the general goal. Results from these studies indicated that writing may be a goal directed activity and students require a goal to successfully complete the writing task.

In addition to interventions focused on planning/organization and goal setting, some studies have also determined the effects on revision strategies for students with disabilities. In an intervention study with 6th-8th- grade students with learning disabilities, a revision strategy was used to support persuasive writing (Reynolds, 1988). In this quasi-experimental group study, students in the experimental and control group received explicit instruction in prewriting and planning. However, students in the experimental group received additional instruction in revision using the mnemonic COPS, which represents (a) capitals and organization, (b) order and organize, (c) punctuate (s) spelling. After responding to a persuasive prompt and using the strategy, students in the experimental group outperformed students in the comparison group with improvements in mechanics. However, there was no difference between the groups on the content.

Aforementioned studies have determined the effectiveness of specific separate components of writing, including planning, organization, goal setting, and revision on the persuasive writing of students with learning disabilities in comparison to a control group or baseline phase. However, additional studies investigated the effectiveness of the explicit instruction using the combined components of writing found to be effective. In a group experimental study conducted by Troia and Graham (2002), researchers developed an explicit strategy intervention that taught the writing process with three specific steps including goal setting, planning, and organization. During the planning phase, students learned the mnemonics STOP (Stop, Think Of Purpose) and LIST (List ideas and Sequence ideas) to support planning. Explicit strategy instruction occurred over a period of seven days with a total of seventy-five minutes per session. The comparison group also received instruction in the writing process, including drafting, proofreading, revising, and editing, but did not have the explicit strategy instruction in goal setting, planning, and organizing. At post-test, the experimental group and the comparison group were not significantly different in the quality of essays (*M* = 5.00, *SD* = 1.7 vs. *M* = 4.83, *SD*=7.1). However, the experimental group wrote longer essays in comparison to the control group (*M* = 93.50, *SD* =50.91 vs. *M* = 91.90, *SD* =36.56 number of words). Students in the experimental group had modest increases in length and quality. Although the components used in this study were effective in previous research, the implementation of these components could have affected the overall results. For example, brainstorming was not tightly related to each portion of the persuasive essay. In addition, in a previous study by Troia (1999), the same explicit three-step strategy instruction was implemented. In that study, students with learning disabilities also increased the number of words written but not the quality of writing. Therefore, the results in were consistent across two studies. It’s been recommended that in order to have the increases in writing quality, students must make a connection between the strategy being used and the brainstorming process (Troia & Graham, 2002).

Goal setting, brainstorming, planning, revision, and explicit strategy instruction can all improve specific measures of persuasive writing. However, without specific emphasizing that strategies are used to improve writing, quality of writing may not be increased. Self-regulated strategy development (SRSD) attempts to increase student’ understanding of specific steps and strategies can improve writing quality. In review of the persuasive writing of students with HID, SRSD was used to target the improvements in persuasive writing of students of varying grade levels. In a study by Linemann (2008), a single subject design was used to determine the effects of SRSD on the persuasive writing of students with ADHD and poor writers in 4th-5th grade. In the study, four students received SRSD instruction over a period of eight to 12 sessions of 20 to 30 minutes. In the instruction, students learned the mnemonics: POW for planning (Plan, Organizer and Write) and TREE (Topic sentence, Reasons, Explanation, and Ending) for organization. Students wrote in response to persuasive prompts using the strategies learned during the intervention. This intervention resulted in increase in number of words and essay parts.

Subsequently, SRSD was used to improve the persuasive writing of students with disabilities in a study conducted by Cuenca-Carlino (2013). In this single-subject study, SRSD was used as a writing intervention for students with EBD in 6th-8th grade. The POW+TREE mnemonic was also used as the strategy to plan and organizer the persuasive response. Results were positive, with students increasing in holistic quality and number of essay parts. Results were replicated with students with LD, EBD, and autism in 8th grade in another single subject study (Mastropieri, Scruggs & Cerar, 2014). Students also used the POW+TREE mnemonic to plan and organizer their persuasive writing. In comparison to baseline, students increased in quality, number of words, number of transition words, and number of parts. SRSD may help students with disabilities to write logical, organized, persuasive responses. (Note: the section will be expanded prior to proposal)

Students with disabilities often have difficulty in various areas of writing, including responding to persuasive and argumentative prompts. However, goal setting, planning and organization can support students’ writing, including developing coherent well-organized essays. These interventions can also support the length of writing and the number of essay parts, including number of reasons and supporting evidence, in the essay. Interventions with SRSD had an impact of the holistic writing quality of students with disabilities, as well as improvements in other measures including essay parts and length.

**Conclusion**

Students with disabilities struggle in the area of writing; however, writing is often required as a demonstration of content in the science and social studies content area. Argumentative writing in the content area is also a part of national and state standards. This form of writing requires students to used facts and evidence to support a claim. Students with disabilities, who often struggle with organization of ideas and writing cohesively, require supports to write this type of essay.

In review of research across content areas, most studies required students to write argumentative essays in response to text. These interventions included a reading component as well as a writing component, demonstrating the need for students to be able to write in response to text explored in class. In these intervention studies, explicit strategy instruction, technology, and graphic organizers were beneficial to improving the overall quality of writing. However, only three studies pertaining to writing within the content areas that included students with disabilities.

Although there has been limited research in writing across content areas for students with disabilities, previous research showed evidence for improving writing of students with disabilities outside of the content area This research has found that explicit strategy instruction (e.g., SRSD) and self-regulated learning strategies (e.g., goal setting) have the potential to increase the writing ability of students with HID including length, number of parts, planning time, writing time, organization, and holistic quality. Still, there is very little research to how to use these strategies to support students’ writing alighted with a specific content are. It is important to explore the effective instructional strategies to improve the writing of students across subjects, specifically for students with disabilities.

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